

DISCOVERY CLEAN WATER ALLIANCE

# Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study Report



An Alliance Capital Project delivered by Clark Regional Wastewater District as Administrative Lead for the Discovery Clean Water Alliance



*Prepared for*

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## Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study Report

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## Acronyms and Abbreviations

°C	degrees Celsius
°F	degrees Fahrenheit
µg/L	micrograms per liter
1Q10	lowest daily flow with a return interval of once in 10 years
7Q10	lowest 7 consecutive day flow with a return interval of once in 10 years
30Q5	lowest 30 consecutive day flow with a return interval of once in 5 years
Alliance	Discovery Clean Water Alliance
AZB	acute mixing zone boundary (for acute aquatic life criteria)
cfs	cubic feet per second
cm	centimeter
cm/sec	centimeters per second
CTD	conductivity-temperature-depth
DF	dilution factor (expressed as centerline or flux-average dilutions)
DGPS	Differential Global Positioning System
District	Clark Regional Wastewater District
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
EPE	estimated percent error
ESA	Endangered Species Act
fps	foot (feet) per second
m	meter
m/sec	meters per second
mgd	million gallons per day
mg/L	milligrams per liter
MZB	chronic mixing zone boundary (for chronic aquatic life and human health criteria)
NAVD 88	North American Vertical Datum of 1988
NGVD 29	National Geodetic Vertical Datum of 1929
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NTU	nephelometric turbidity unit
OD	outside diameter
PDT	Pacific Daylight Time
ppb	parts per billion

QA/QC	Quality Assurance/Quality Control
RM	River Mile
RPA	reasonable potential analysis
RTK	real-time kinetics
SCTP	Salmon Creek Treatment Plant
SCUFA	Self-Contained Underwater Fluorescence Apparatus
S/m	Siemens per meter
TMDL	total maximum daily load
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey
UV	ultraviolet
VP	Visual Plumes
WAC	Washington Administrative Code
WLA	waste load allocation
WSE	water surface elevation



## Executive Summary

### Background

#### SCTP Facilities and Columbia River Outfall

The Salmon Creek Treatment Plant (SCTP), located in northwest Vancouver in Clark County, is operated by the Clark Regional Wastewater District (District) and is an asset of the Discovery Clean Water Alliance (Alliance). The SCTP treatment facilities use the activated sludge process with primary clarifiers, aeration basins, and secondary clarifiers. The effluent flow is disinfected by ultraviolet (UV) lamps prior to discharge into the outfall.

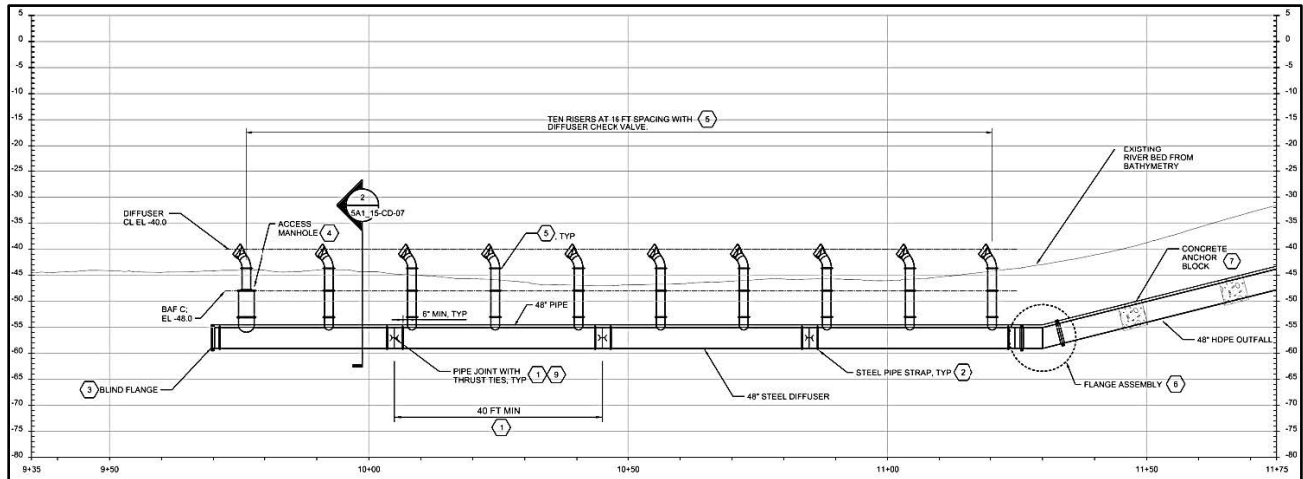
The SCTP is operated in accordance with National Pollutant Discharge Elimination System (NPDES) Permit No. WA0023639 (effective April 1, 2012). The Alliance submitted an application for renewal of the NPDES Permit in 2016 in accordance with the permit requirements. The Washington Department of Ecology (Ecology) administratively extended the NPDES permit in 2017. In 2021, the Alliance submitted a supplement to their application for renewal of the NPDES permit to update the effluent data applied by Ecology in permit renewal. Ecology has indicated it plans to renew the NPDES permit for the SCTP in the near future.

The SCTP effluent is discharged via a 7,000-foot-long, 30-inch-diameter effluent pipeline that terminates with a new 10-port outfall diffuser in the Columbia River. The original 5-port outfall diffuser (labeled as "existing" outfall in Figure ES-1) in the Columbia River ceased use after connection to the new 48-inch-diameter river outfall segment with 10-port diffuser was completed in July 2022 and flows were routed to the new diffuser. The SCTP outfall discharge is located near River Mile (RM) 96 in the lower Columbia River, approximately 5 miles downstream of the Willamette River confluence and approximately 8 miles upstream of the Lewis River confluence.



Figure ES-1. Overview of SCTP, Existing 30-inch-diameter and New 48-inch-diameter Effluent Pipelines, and the Location of the Original and New Outfall Diffusers in the Columbia River

Effluent flows from the SCTP are currently routed via the existing 30-inch-diameter effluent pipeline from the SCTP to the onshore connection to the new 48-inch-diameter outfall and diffuser in the Columbia River. This connection was installed in July 2022, and the installation of the 48-inch-diameter effluent pipeline from the SCTP to the river shoreline will be completed in 2023-2025. During this Outfall 001 Mixing Performance Study in 2022, effluent from the SCTP flowed via the existing 30-inch-diameter effluent pipeline to the junction structure and through the new 48-inch-diameter outfall to the new diffuser in the river. The new 48-inch-diameter outfall extends from the onshore connection (east riverbank) and terminates with the 144-foot-long, 10-port diffuser located offshore in the river channel (Figure ES-2). All 10 diffuser risers are flanged to 20-inch Tideflex elastomeric check valve ports.



**Figure ES-2. Profile View Drawing Excerpt of SCTP New Outfall Diffuser in the Columbia River**

Source: Final Design Drawings from the Contract Provisions and Plans for the Phase 5A Project: Package 1 - Salmon Creek Treatment Plant Columbia River Outfall (Jacobs, 2021a)

### SCTP Outfall Diffuser Mixing Zones

The water depth of the diffuser ports centerline is 42.1 feet at the 7Q10 (7-day period of lowest river flow for a 10-year return period) low river flow conditions. This minimum water depth at the diffuser ports is applied in the definition of the mixing zone boundaries in accordance with Washington Administrative Code (WAC) Section 173-201A-400 in the Water Quality Standards for Surface Waters of the State of Washington. The SCTP outfall diffuser is located near RM 96 where tidal-induced flow reversals occur during lower river flows, as documented in the *Engineering Report for the Phase 5A Project – Columbia River Outfall and Effluent Pipeline* (CH2M HILL [CH2M], 2018), and, therefore, Ecology's estuary mixing zone was applied to the original diffuser and the new outfall diffuser.

In accordance with the mixing zone rules in WAC 173-201A-400 the chronic mixing zone boundary (MZZ) for the new outfall diffuser is 242 feet in any horizontal direction from the diffuser ports, and the acute mixing zone boundary (AZB) is 24 feet from the diffuser ports. Figure ES-3 illustrates the new SCTP outfall diffuser and the acute and chronic mixing zone boundaries in the Columbia River. The AZB and MZZ were the focal points of field measurements of dilutions to allow for direct comparisons to model-predicted dilutions.



Figure ES-3. Schematic Illustration of SCTP New Outfall Diffuser Location and Acute and Chronic Mixing Zone Boundaries in the Columbia River

Source: Jacobs Mapping-Maxar Imagery, June 2021

### Project Requirements, Objectives, and Approach

To document the design of the SCTP effluent pipeline and Columbia River outfall (Phase 5A Project), the Alliance and District submitted an *Engineering Report for the Phase 5A Project – Columbia River Outfall and Effluent Pipeline* (Jacobs, 2018) to Ecology in March 2018 for review and approval. On February 11, 2019, Ecology issued their letter approving the Engineering Report with specific comments and conditions for approval as follows:

- *Engineering Analysis* – “The outfall diffuser structure is well considered for the location, but mixing will need to be confirmed with a dye study after installation”; and
- *Impact on Mixing and Seasonal Mixing Zone Ratios* – “Final mixing zone ratios and seasonal mixing zone ratios (critical low-flow season tentatively proposed as May-Oct inclusively) have not been...agreed upon to date. After completion of construction, the District will need to submit a request for seasonal mixing zones [dilutions] if they want to enjoy less stringent limits in the non-critical seasons. This request would need to be supported with ambient and effluent flow data, and a mixing zone study (including dye study results) that is sufficient to support the determination of seasonal mixing zones at the critical conditions in each of the established seasons.”

In addition, the Endangered Species Act (ESA) Biological Opinion approval of the Phase 5A Project – Columbia River Outfall and Effluent Pipeline prepared by National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service and the U.S. Army Corps of Engineers (USACE) includes the following terms and conditions:

- *Outfall Mixing Performance Study Report* – “Verify compliance with State water quality criteria, and verify that the outfall diffuser functions as designed, by performing a Field Tracer Performance Study

during the first low river flow season (September-October) following outfall construction. Use the field-measured dilutions to calibrate and validate the dilution modeling that serves as the basis for design. Use the calibrated model to predict dilutions under design river flows and effluent flows, as defined in the Washington State Department of Ecology's (Ecology) Permit Writer's Manual (2018) and in the applicant's Phase 5A Project Engineering Report. Document the results of the Field Tracer Performance Study and dilution modeling in the Outfall Mixing Performance Study Report."

The objectives of the Outfall Mixing Performance Study for the new SCTP Columbia River Outfall diffuser were to collect site-specific field measurements of the new SCTP outfall diffuser dilution performance, to generate dilution modeling results for the field study conditions to select the representative dilution model, and to generate dilution modeling results for critical low river flow conditions (as defined in Ecology's guidance), to evaluate discharge compliance with water quality standards, and to produce a technical study report that documents the dilution performance of the new SCTP Columbia River Outfall diffuser under critical receiving water conditions during dry and wet season conditions. This study has been designed and conducted following Ecology's guidance for determining dilutions under critical receiving water conditions as defined in WAC 173-201A-020 (Ecology, 2022), Tables VI-3 and VII-1, and in Appendix C of the Permit Writer's Manual: *Guidance for Conducting Mixing Zone Analyses* (Ecology, 2018). In addition, the Alliance has determined that they do not need to request seasonal dilution factors (DFs) for the non-critical seasons at this time, and, therefore, this study addresses dry and wet season discharge conditions to define discharge dilutions under critical receiving water conditions.

## Study Findings

### Field Tracer Study

The field tracer study of the new SCTP outfall diffuser dilution performance and in-situ current measurements was conducted on September 21 and 22, 2022. The field tracer study was conducted during low river flow conditions, and the daily average flow in the Columbia River near RM 96 was approximately 96,000 cubic feet per second (cfs) on September 21<sup>st</sup> and 88,000 cfs on September 22<sup>nd</sup>, 2022. More than 20,000 tracer concentration measurements were recorded during the study to characterize the dilutions of the discharge plumes from the new SCTP Outfall 001 diffuser at the acute and chronic mixing boundaries.

Continuous measurements of the effluent flow and initial tracer (dye) concentrations were recorded and all field dilution study measurements were recorded and summarized in this report. Figure ES-4 provides a summary of the dilutions measured at the (schematically illustrated) AZB and MZB and ambient current speeds measured during each sampling profile and transect in the river. During the 2022 field tracer study, field measurements of current speed and direction at the SCTP outfall diffuser site provided accurate measures of the duration of tidal current reversals. The recorded duration of tidal current reversals for both ebb-flood and flood-ebb reversals on September 21 and 22, 2022, were all within 10 minutes. The current meters installed within 100 feet of the SCTP outfall diffuser midpoint recorded current speed and direction at 10 minute intervals, so the actual tide reversal duration could be less than 10 minutes.

Field tracer study dilutions and current measurements conducted before, during, and after tidal-induced current reversals were applied in reflux calculations at the SCTP outfall diffuser MZB. Reflux calculations of discharge plumes from the new SCTP outfall diffuser were developed applying the methods defined in Appendix 6 – Guidance for Conducting Mixing Zone Analyses, Section 1.6.3 – Quantify Far-field Accumulation (Reflux), in the Permit Writer's Manual (Ecology, 2018) - Method 1, Alternative 1, as described in the guidance. The field measurements and reflux calculations demonstrate no reflux at the chronic MZB and the measured duration of tidal current reversal was within 10 minutes at the diffuser.

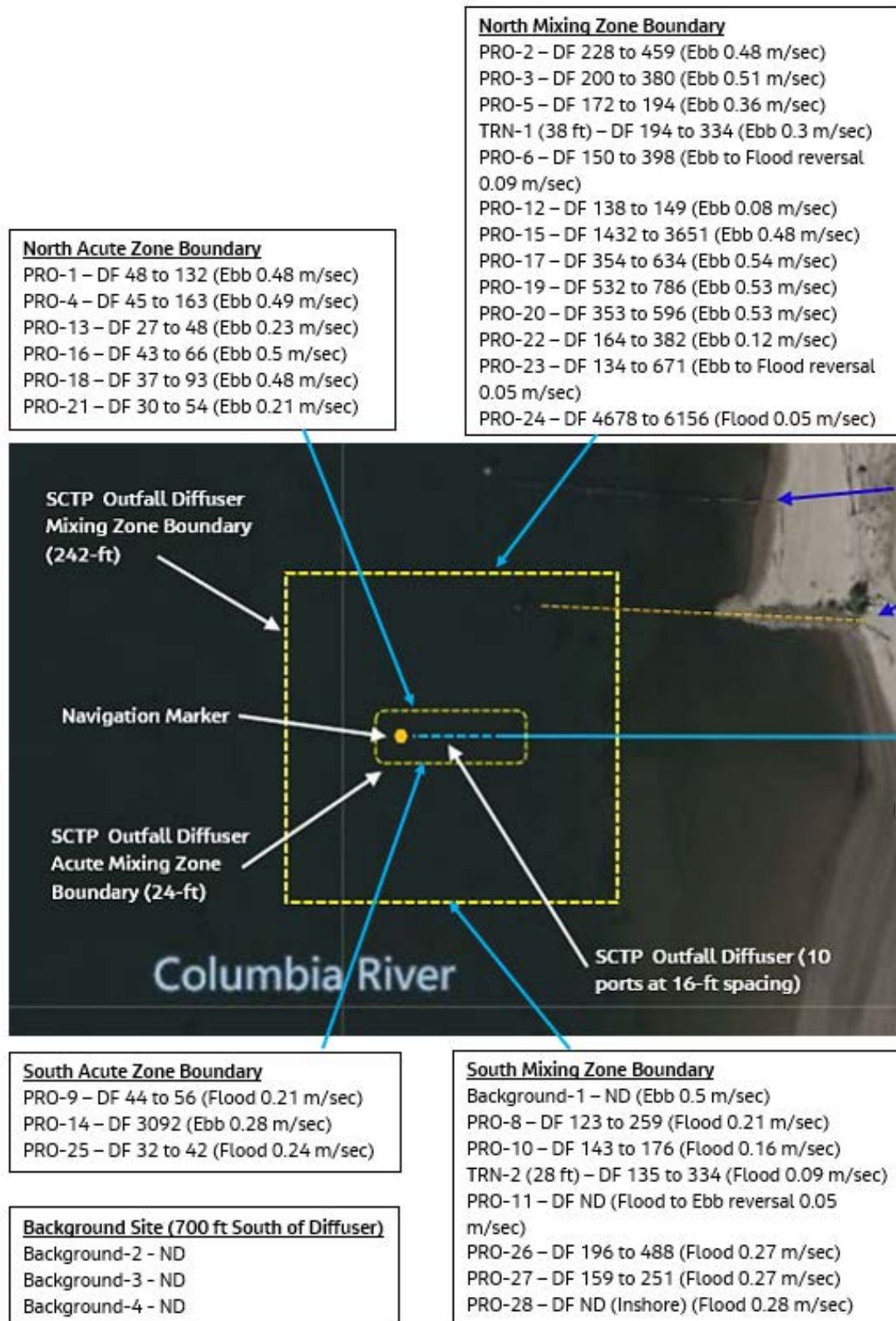
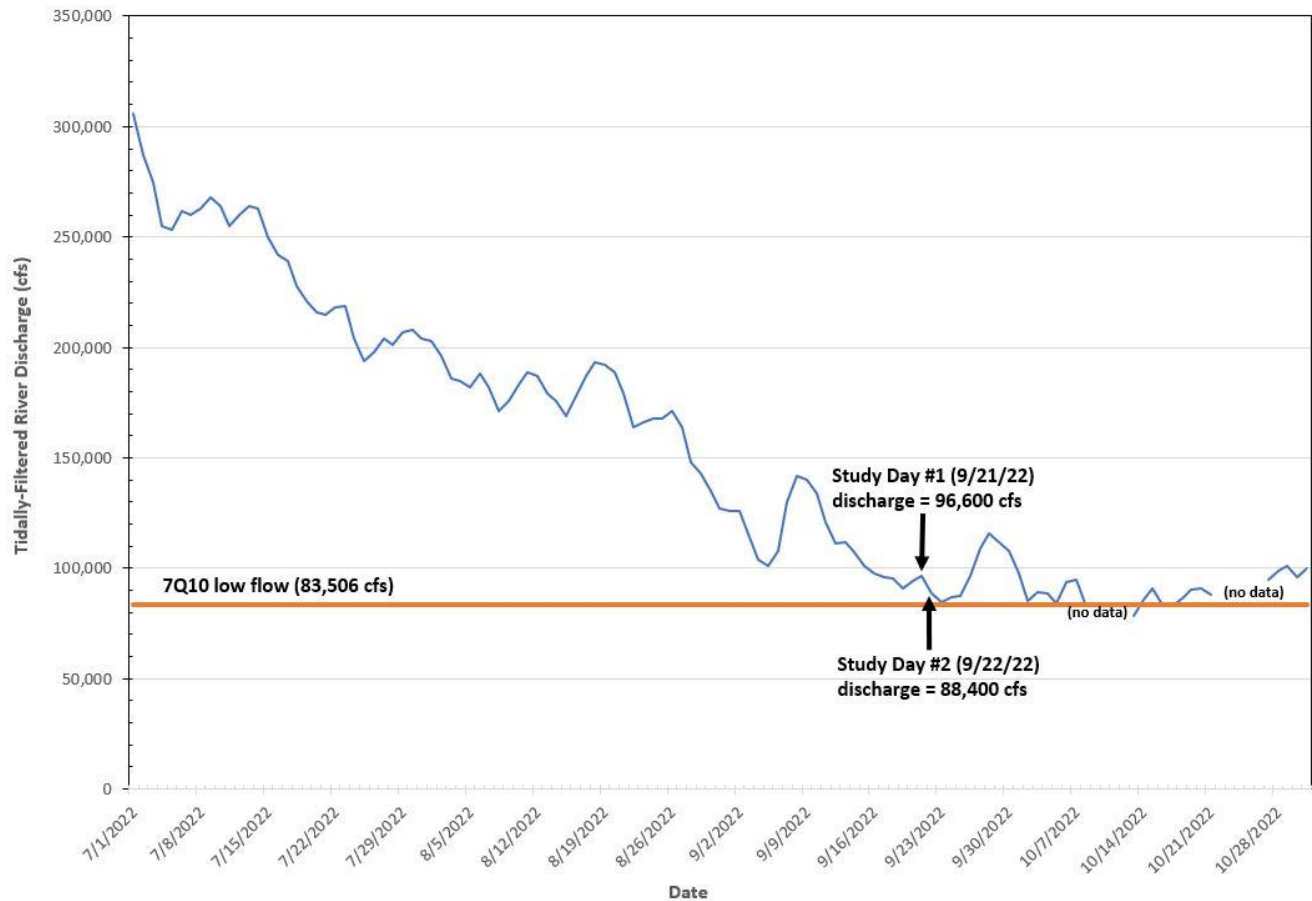


Figure ES-4. Summary of Dilutions and Current Speeds Measured at the SCTP Outfall Diffuser Acute and Chronic Mixing Zone Boundaries

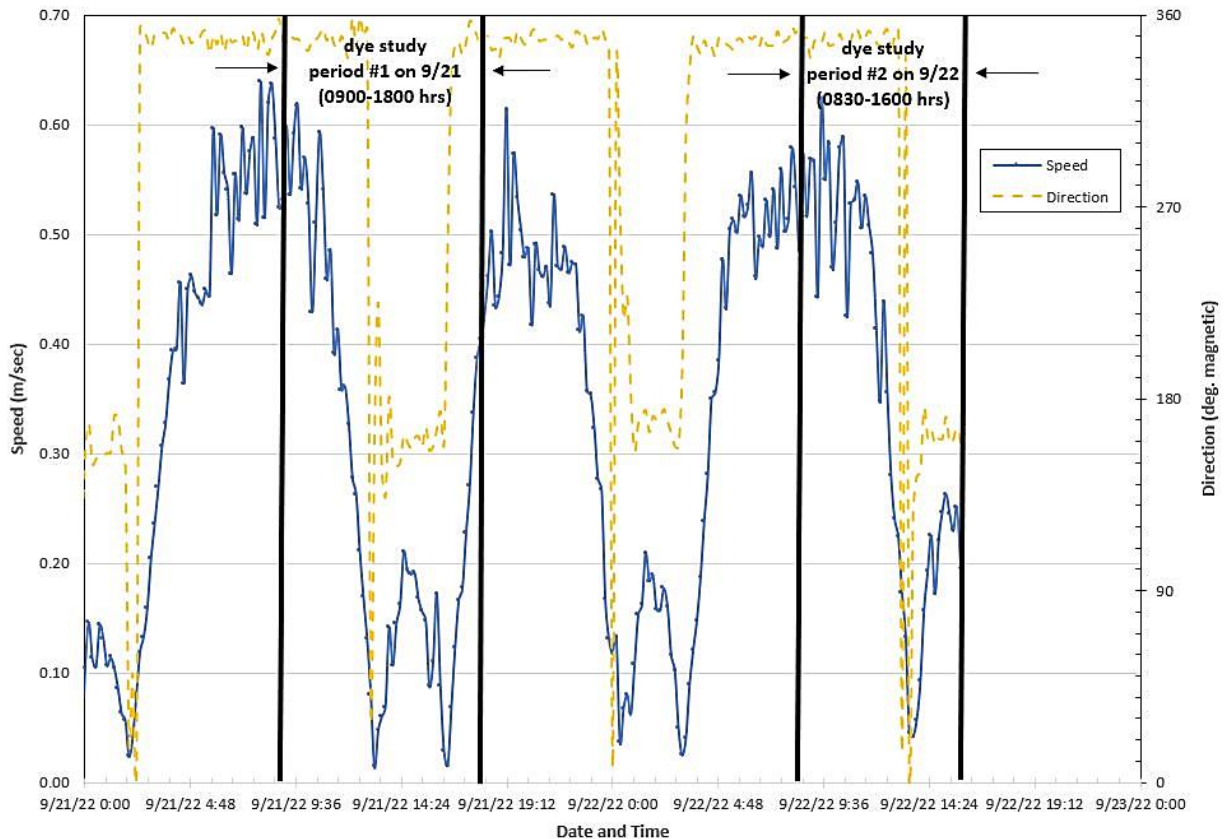
### River Flow and Currents Conditions

The Columbia River flows recorded by the USGS at Vancouver, Washington (gage 14144700), during the 4-month dry season period in summer and fall of 2022 are shown in Figure ES-5. The tidally-filtered river discharge flow during the 2022 field data collection period was approximately 96,000 cfs on September 21 and 88,000 cfs on September 22, 2022. The river flow conditions during the field study were close to the 7-day, 10-year low flow, or 7Q10 low flow value of 78,506 cfs.



**Figure ES-5. Columbia River Tidally-Filtered Discharge at Vancouver, Washington, for the 2022 Dry Season Period (July through October)**

Over the 48-hour deployment period, the current meter instruments located near the Outfall 001 diffuser measured current speeds ranging from 0.01 to 0.64 meter per second (m/sec), with mean current speeds of 0.34 m/sec for both the mid-depth and near-bottom meters. Figure ES-6 presents the near-bottom current meter data as a time-series plot of current velocity (i.e., speed and direction), and this figure illustrates the semi-diurnal tidal patterns that affect the ambient current speed and direction during the low river flow period. The highest measured current velocities (i.e., those greater than 0.40 m/sec) coincide with ebb (northward-flowing) tides that have a direction of about 340° to 350° magnetic. Conversely, the lowest current velocities measured (less than 0.25 m/sec) coincide with flood tides (southward-flowing) having a direction of about 150° to 180°. These data from the near-bottom meter represent the ambient currents in the near-field and at the diffuser discharge depth.



**Figure ES-6. Time-Series Plot of Near-Bottom Currents in the Columbia River at RM 96 near the SCTP Outfall 001, September 20–22, 2022**

Figure ES-7 provides a scatter plot of the near-bottom current records and this illustrates the relative strength of ebb and flood tidal currents, as well as the measurements recorded during the transition periods. Figure ES-7 shows the small number of tidal direction transition measurements relative to those measured during ebb and flood tide periods. Analysis of the entire data records of both instruments indicates that flood tides occurred only approximately 24 percent of the time during this late summer/early fall period; this portion of time can vary depending on river discharge (since the tidal signal is dampened during high river flow conditions, this percentage will decrease).

Critical conditions are those environmental conditions that result in minimal mixing and the lowest dilution, specifically the environmental conditions that represent acute and chronic aquatic life criteria, in addition to chronic human health criteria. For the outfall modeling analysis specified in Appendix C of the Permit Writer's Manual: *Guidance for Conducting Mixing Zone Analyses* (Ecology, 2018), the following design flows were calculated for use in the dilution modeling:

- 7Q10 low-flow, *dry season* (July–October): 83,506 cfs
- 7Q10 low-flow, *wet season* (November–June): 104,150 cfs
- 30Q5 flow, *dry season* (July–October): 99,893 cfs
- Harmonic mean river flow (annual basis): 191,106 cfs

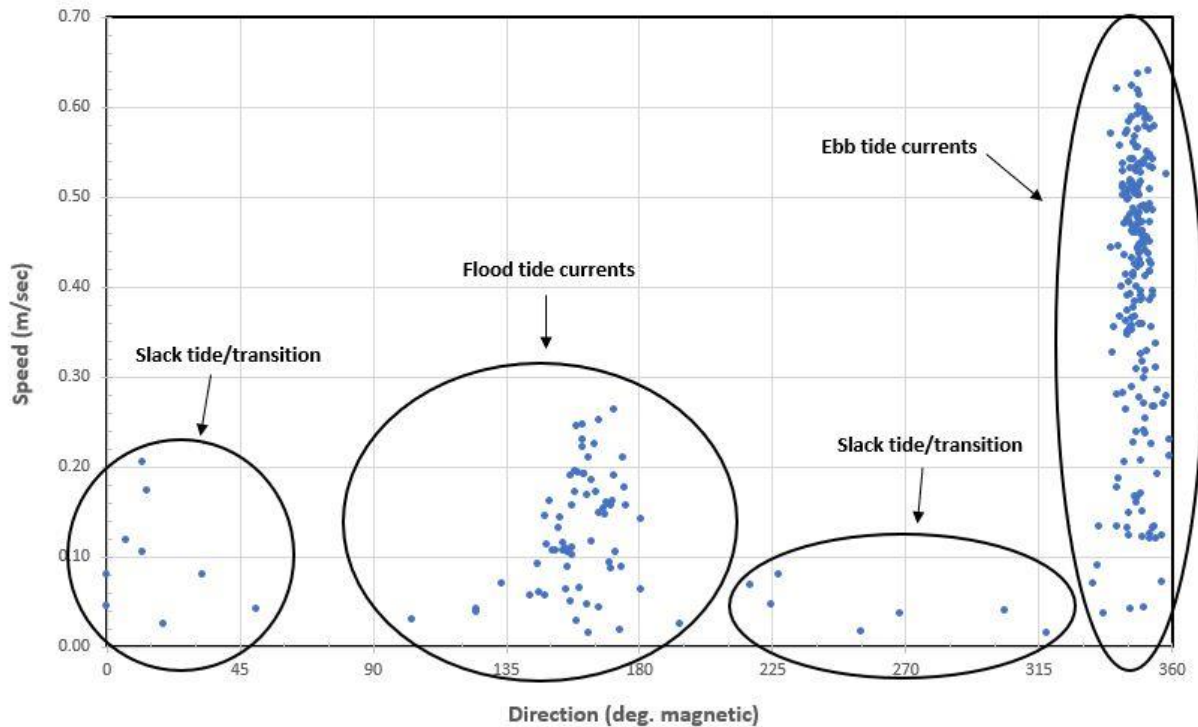


Figure ES-7. Scatter Plot of Near-Bottom Currents in the Columbia River at RM 96 Near the Salmon Creek Treatment Plant Outfall 001, September 20–22, 2022

### Effluent Flows for Dilution Modeling

Effluent flows are a key input for dilution modeling. These existing and projected effluent flows are summarized below in Table ES-1. The highest daily maximum effluent flow in each season is used to evaluate compliance with acute aquatic life water quality criteria. The highest monthly average effluent flow in each season is used to evaluate compliance with chronic aquatic life and human health (non-carcinogen) water quality criteria. The annual average effluent flow is used to evaluate human health (carcinogen) water quality criteria.

Table ES-1. SCTP Existing (2019–2022) and Projected Future Effluent Flows (million gallons per day) Used in the Dilution Modeling

Effluent Flow Scenario	Existing Flows (2019-2022)	Projected Phase 5 Flows	Projected Phase 6 Flows	Projected Phase 7 Flows	Projected Buildout Flows
Dry Season Maximum Day	13.50	17.33	19.41	23.56	37.31
Dry Season Maximum Monthly	9.58	13.15	14.73	17.88	29.21
Annual Average	7.88	13.71	15.36	18.65	28.92
Wet Season Maximum Day	14.33	23.4	26.24	31.86	50.90
Wet Season Maximum Monthly	9.98	17.50	19.60	23.80	38.18

Notes: *dry season* is defined as the period from July through October; *wet season* is defined as the period from November through June.



### Dilution Modeling

Dilution modeling was used to predict dilution performance of the outfall diffuser under critical (worst-case) receiving water conditions and for a range of receiving water conditions expected to occur at the discharge site. Field measurements collected in September 2022 have been used to assist in the selection of the dilution model used in this evaluation. The UM3 model in Visual Plumes agrees most closely to the field-measured dilutions at both the AZB and MZB, and this model was selected to evaluate the dilution performance of the SCTP Outfall 001 diffuser. The UM3 model is accepted for use by Ecology under appropriate situations, particularly when there are field measurements available for use in model validation.

Consistent with the guidance provided in Section 13.1 of the Permit Writer’s Manual (Ecology, 2018), all the DFs presented in this study report are flux-average values. The use of flux-average DFs is recommended for both marine environments and for rivers with reversing flows under all conditions (i.e., at both the AZB and MZB).

The modeling results for acute aquatic life criteria, chronic aquatic life criteria, and human health criteria under critical conditions show worst-case predicted DFs as listed below in Table ES-2.

**Table ES-2. Minimum Model-Predicted Dilution Factors for the SCTP Outfall 001**

	Existing Effluent Flows	Projected Phase 5 Effluent Flows	Projected Phase 6 Effluent Flows	Projected Phase 7 Effluent Flows	Projected Buildout Effluent Flows
Acute Aquatic Life Criteria (AZB = 24 feet)	30	27	25	23	19
Chronic Aquatic Life Criteria (MZB = 242 feet)	169	149	142	132	92
Human Health (Carcinogen) (MZB = 242 feet)	202	169	163	154	135
Human Health (Non-Carcinogen) (MZB = 242 feet)	214	192	185	173	173

### Water Quality Criteria and Temperature Discharge Compliance

An updated Reasonable Potential Analysis (RPA) for the SCTP discharge to the Columbia River was completed using the most recent 5 years of effluent monitoring data and the model-predicted dilutions developed by this study through the projected buildout effluent flows. This RPA found that the Outfall 001 diffuser’s dilution performance exceeds the minimum dilution requirements to demonstrate compliance with state water quality standards for the discharge to the Columbia River, including temperature, pH, and toxic pollutants under WAC 173-201A.

An energy (mass) balance equation was applied to calculate the excess temperature at the MZB (the difference between the mixed temperature of effluent and river water and the background river temperature or temperature criteria). This worst-case temperature screening evaluation assumed that the river water temperature equals the temperature criterion of 20.0 degrees Celsius (°C) (year-round) and applied the maximum measured effluent temperature of 23.3°C. At the existing effluent flows and the effluent flows projected in Phase 5 and Phase 6, the estimated worst-case excess temperature difference

for the replacement outfall is 0.02°C. At the effluent flows projected in Phase 7 and under buildout conditions, the estimated worst-case excess temperature difference for the replacement outfall is 0.03°C.

For toxic pollutants, the highest DFs required for compliance with state water quality criteria were for copper, ammonia, and Bis(2-Ethylhexyl)Phthalate (BEHP) according to the RPA. The dilution model predicts minimum DFs well above these required DFs under critical conditions through projected buildout conditions.

# 1. Introduction

## 1.1 Project Background

The Salmon Creek Treatment Plant (SCTP) is operated by the Clark Regional Wastewater District (District) and it is an asset of the Discovery Clean Water Alliance (Alliance). The Alliance serves four member agencies: City of Battle Ground (Battle Ground), Clark County (County), Clark Regional Wastewater District (District), and the City of Ridgefield (Ridgefield). These Members jointly own and manage regional wastewater assets under Alliance ownership through an interlocal framework established under the State of Washington Joint Municipal Utility Services Act (Revised Code of Washington 39.106).

The *Salmon Creek Wastewater Management System Wastewater Facilities Plan/General Sewer Plan* (CH2M, 2004a) includes capital improvements in three programmatic phases that will result in an overall facility capacity of 17.5 million gallons per day (mgd) maximum monthly average wet weather flow as well as outfall system and pumping improvements. The Phase 5 Expansion Program consists of the following three separate elements:

- **Phase 5A Project—Columbia River Outfall and Effluent Pipeline** involves constructing a new effluent pipeline and river outfall to address long-term system hydraulic capacity and diffuser performance. The Engineering Report for the Phase 5A Project was submitted to the Washington State Department of Ecology (Ecology) and approved in 2019. The Phase 5A Project includes: (1) Installing a new outfall diffuser in the Columbia River at an offshore site, (2) installing a 48-inch-diameter outfall pipeline from the SCTP pump station to the new outfall diffuser in the river, (3) replacing the four effluent pumps, and (4) removing the existing SCTP outfall in the river. The existing 30-inch-diameter outfall pipe will be retained from the SCTP pump station to a point where it connects to the new outfall and diffuser structure.
- **Phase 5B Package 1—Odor Control/Existing Facilities Improvements Project** addresses odor control and various existing facility improvements. The Engineering Report for the Phase 5B Package 1 Project was submitted to Ecology and approved in 2019, and the project construction was completed in 2021.
- **Phase 5B Package 2—Secondary Treatment Process Improvements Project** addresses facility loading and treatment capacity with updated process and hydraulic analyses, and related facility improvements. The Engineering Report for the Phase 5B Package 2 Project was submitted to Ecology and approved in 2021, and project construction is underway.

This Outfall 001 Mixing Performance Study of the new SCTP outfall diffuser in the Columbia River has been completed to fulfill the requirements specified in Ecology's approval of the Engineering Report for the Phase 5A Project—Columbia River Outfall and Effluent Pipeline (issued February 11, 2019), as well as conditions specified in the Endangered Species Act (ESA) Biological Opinion project approval by National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service and the U.S. Army Corps of Engineers (USACE). This Outfall 001 Mixing Performance Study Report has been submitted to Ecology by the District and Alliance.

This study documents the dilution performance of the new SCTP outfall diffuser and documents discharge compliance with State water quality standards. Verification of the outfall diffuser performance was achieved using field studies and modeling of the newly installed outfall and diffuser in the Columbia River.

### 1.1.1 NPDES Permit and Treatment Facilities

The SCTP is operated in accordance with National Pollutant Discharge Elimination System (NPDES) Permit No. WA0023639 (effective April 1, 2012). The Alliance submitted an application for renewal of the NPDES permit in 2016 in accordance with the permit requirements. Ecology administratively extended the NPDES permit in 2017. In 2021, the Alliance submitted a supplement to their application for renewal of the

NPDES permit to update the effluent data applied by Ecology in permit renewal. Ecology has indicated they plan to renew the NPDES permit for the SCTP in the near future.

The SCTP treatment facilities use the activated sludge process with primary clarifiers, aeration basins, and secondary clarifiers. Influent flows to the plant are measured with a magnetic meter, screened by two filter-belt type screens, and de-gritted through two circular vortex grit chambers before flowing into three separate primary clarifiers to reduce total suspended solids and biochemical oxygen demand. The primary effluent flow exiting the clarifiers flows to aeration basins to provide treatment in anaerobic/anoxic and aerobic zones. The SCTP operates three secondary clarifiers to settle/remove solids, and the settled solids are pumped either back to the mixing box or wasted to the sludge/biosolids process train. After the clarifiers, the effluent flow is disinfected by ultraviolet (UV) lamps prior to discharge into the outfall.

### 1.1.2 SCTP Outfall Site and Improvements

The SCTP outfall discharge is located near River Mile (RM) 96 in the lower Columbia River, approximately 5 miles downstream of the Willamette River confluence and approximately 8 miles upstream of the Lewis River confluence. The original 30-inch effluent pipeline from the SCTP to the Columbia River is a 7,000-foot-long pipeline that terminated with a 5-port diffuser in the river. This original outfall diffuser (labeled as “existing” outfall in Figure 1-1) in the Columbia River ceased use after connection to the new river outfall diffuser was completed in July 2022 and flows were routed to the new diffuser.



**Figure 1-1. Overview of SCTP, Existing 30-inch and New 48-inch Effluent Pipelines, and the Location of the Original and New Outfall Diffusers in the Columbia River**

Effluent flows from the SCTP are currently routed via the existing 30-inch-diameter effluent pipeline to the onshore connection to the new 48-inch-diameter outfall and diffuser in the Columbia River (Figure 1-2). This connection was installed under the 5A1 construction contract and the installation of the 48-inch-diameter effluent pipeline from the SCTP to the river shoreline will be completed in the 5A2 construction contract in 2023-2025. Approximately 870 feet of the existing 30-inch-diameter outfall pipe and the diffuser section were removed from the river up to the onshore tie-in structure during the 2022 in-water work period (refer to Figure 1-2). The existing 30-inch-diameter effluent pipeline from the SCTP to the

onshore connection to the new 48-inch-diameter outfall will remain in place to serve as a back-up pipeline for use if maintenance is required on the new effluent pipeline. During the Outfall 001 Mixing Performance Study in 2022, effluent from the SCTP flowed via the existing 30-inch-diameter effluent pipeline to the junction structure and through the new 48-inch-diameter outfall to the new diffuser in the river.

Figure 1-3 is an excerpt from the plan view in Drawing 5A1\_05-PP-01 showing the layout of the new outfall and diffuser and the original outfall. Appendix A provides seven selected drawings from the bid documents (Contract Provisions and Plans) for the Phase 5A Project: Package 1—Salmon Creek Treatment Plant Columbia River Outfall (Jacobs, 2021a).

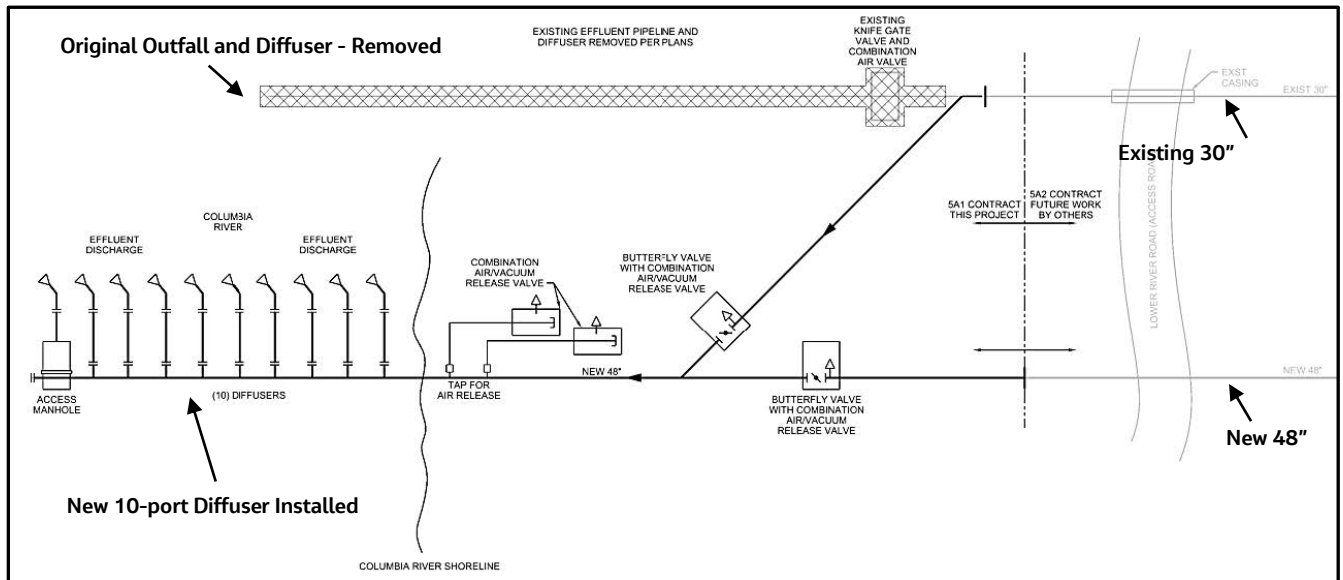


Figure 1-2. Excerpt of Process Flow Diagram of 30-inch- to 48-inch-diameter Effluent Pipeline Connection at Columbia River Shoreline and 48-inch-diameter Outfall Diffuser in the River (based on Drawing 5A1\_01-G-10, Jacobs, 2021a)

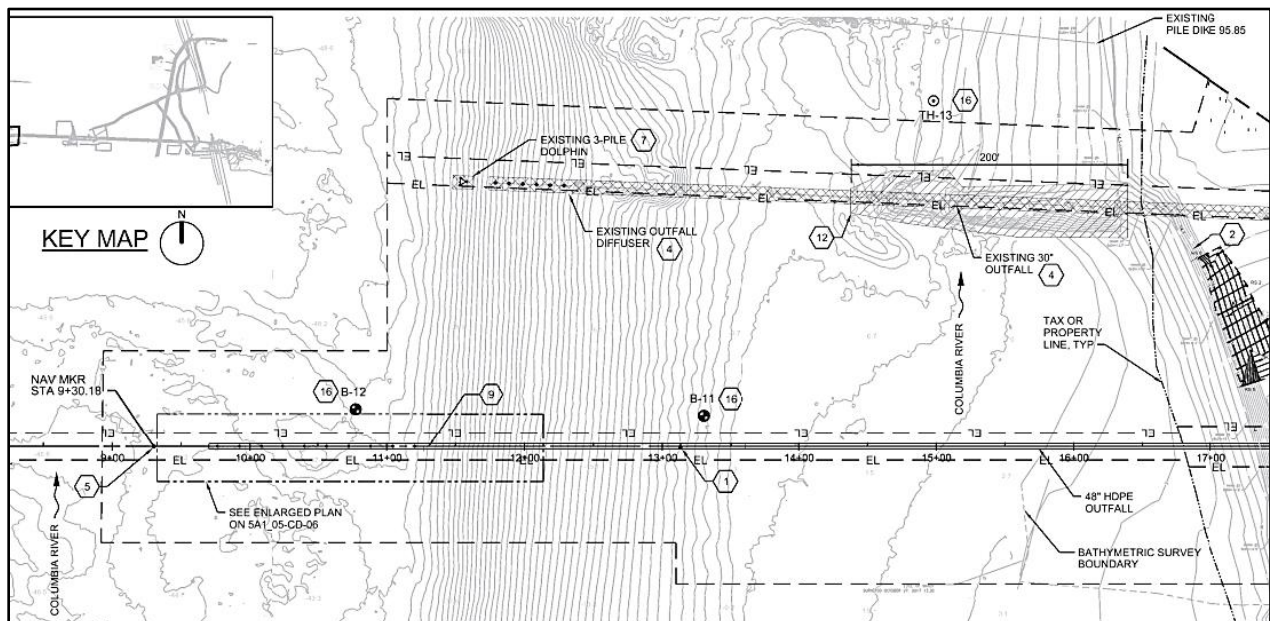
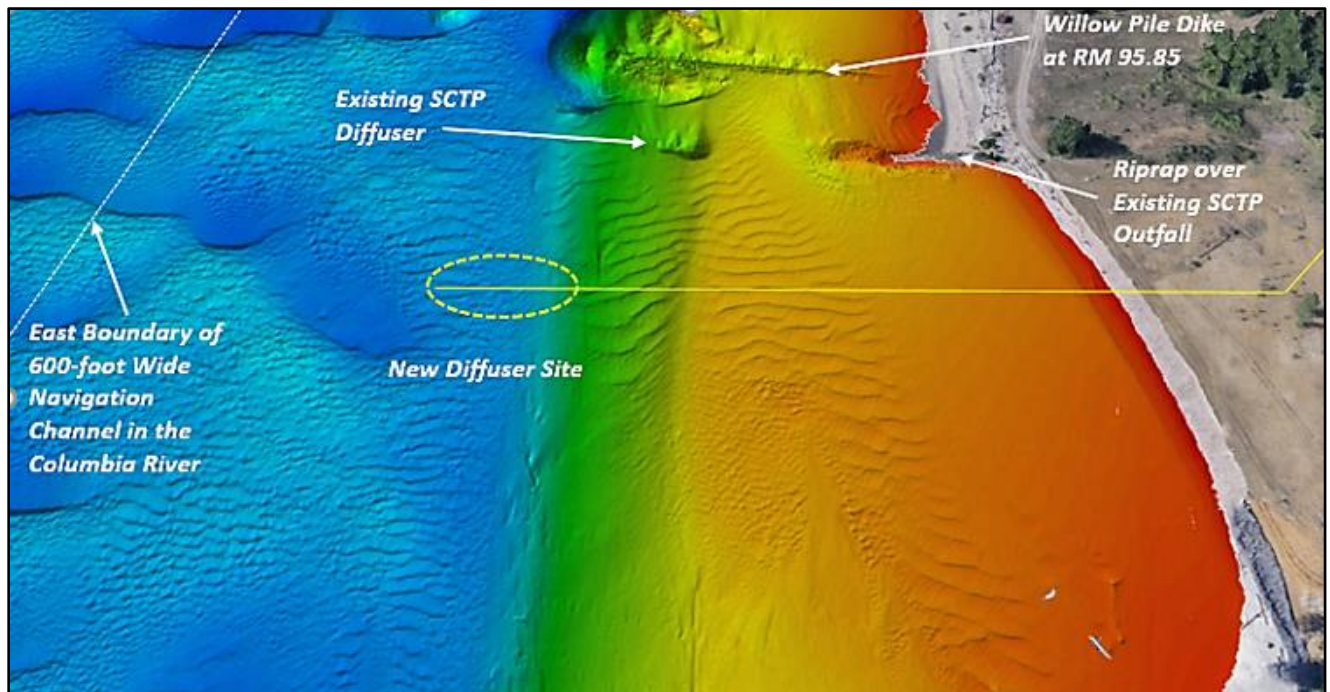


Figure 1-3. Excerpt of Plan View Drawing 5A1\_05-PP-01 of SCTP Existing 30-inch-diameter Outfall and Diffuser and Replacement 48-inch-diameter Outfall and Diffuser in the Columbia River

Figure 1-4 provides a bathymetry image that illustrates the locations of the original outfall diffuser and the new outfall diffuser site in the Columbia River and south (upstream) of the Willow Pile Dike. The color-defined bathymetry shown in Figure 1-4 ranges from shallow nearshore areas (red, orange, yellow) to intermediate depths (green), to deep offshore areas (blue). The new outfall diffuser was installed further offshore and at greater depth than the original outfall diffuser. The SCTP outfall site is subjected to diurnal tide-induced elevation changes throughout the year, and the river flow has flood tide-induced reversals during low to moderate river flows in the Columbia River. Tidal elevation ranges can be as large as approximately 3 feet under lower river flows and large flood tidal exchange periods.

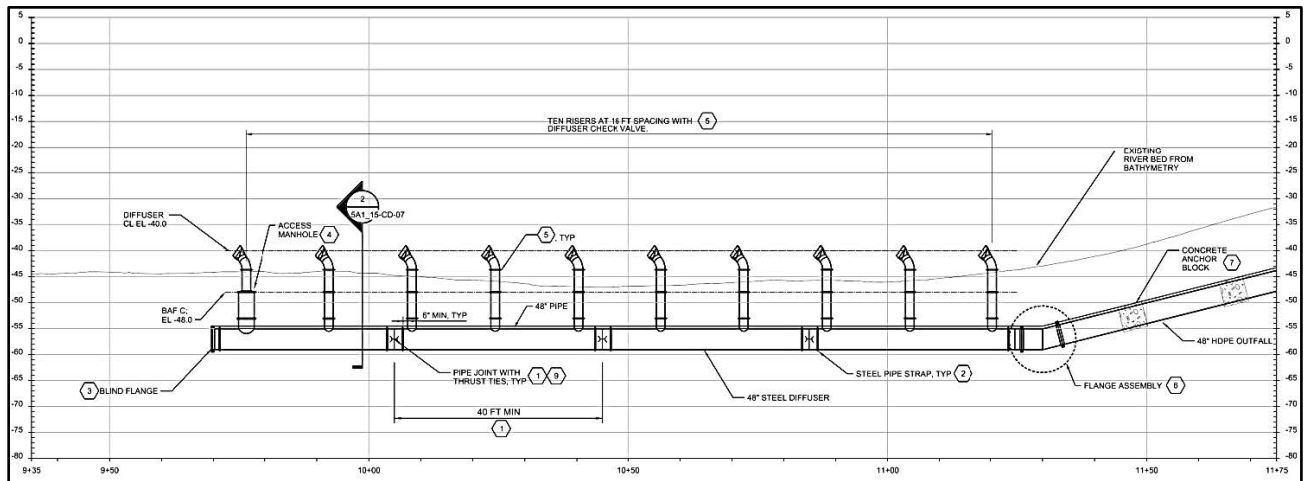


**Figure 1-4. Existing and New SCTP Outfall Diffuser Sites in the Columbia River near River Mile 96**

Source: Bathymetric Survey Report by Solmar Hydro, Inc. 2017

The new SCTP outfall extends approximately 750 feet offshore from the east riverbank and the 144-foot-long diffuser section is located offshore (west) of the riverbed slope in the deeper river channel (Figure 1-4).

The new 48-inch-diameter high-density polyethylene outfall pipe is buried under the riverbed and the outfall pipe changes to steel pipe at the start of the 144-foot-long outfall diffuser pipe section. The diffuser section is a horizontal pipe with a burial depth of 6 to 8 feet over the pipe crown. The outfall diffuser consists of 10 concrete-coated vertical steel riser pipes that extend above the riverbed. The first 9 riser pipes consist of 20-inch-inside-diameter pipe sections, and the last offshore riser consists of a 36-inch access manhole with 20-inch riser flanged to the top. All 10 risers are flanged to elastomeric 45-degree integrated elbows fitted with 20-inch Tideflex elastomeric check valve ports. Figure 1-5 is an excerpt from the plan view in Drawing 5A1\_15-CD-06 showing a profile of the new 10-port outfall diffuser (refer to drawings in Appendix A). The post-construction dive inspection, which was conducted November 30 – December 1, 2022, showed that all 10 check valve ports were unobstructed (see full report also included in Appendix A).



**Figure 1-5. Profile View Drawing Excerpt of SCTP New Outfall Diffuser in the Columbia River**

Source: Final Design Drawings from the Contract Provisions and Plans for the Phase 5A Project: Package 1 - Salmon Creek Treatment Plant Columbia River Outfall (Jacobs, 2021a)

### 1.1.3 SCTP Outfall Diffuser Mixing Zones

The outfall diffuser check valves at the upper steel flange of each 20-inch steel riser were installed with the port centerline at an elevation of -40.0 feet (National Geodetic Vertical Datum of 1929 [NGVD 29]). The water depth of the diffuser ports centerline is 42.1 feet at the 7Q10 (7-day period of lowest river flow for a 10-year return period) low river flow conditions. This minimum water depth at the diffuser ports is applied in the definition of the mixing zone boundaries in accordance with Washington Administrative Code (WAC) Section 173-201A-400 in the Water Quality Standards for Surface Waters of the State of Washington. The SCTP outfall diffuser is located where tidal-induced flow reversals occur during lower river flows in the dry season, as documented in the *Engineering Report for the Phase 5A Project—Columbia River Outfall and Effluent Pipeline* (CH2M, 2018), and, therefore, Ecology's estuary mixing zone was applied to the original diffuser and the new outfall diffuser.

In accordance with the mixing zone rules in WAC 173-201A-400, the acute mixing zone boundary (AZB) for the new outfall diffuser is 242 feet in any horizontal direction from the diffuser ports, and the AZB is 24 feet from the diffuser ports. Figure 1-6 provides a scaled schematic representation of the new SCTP outfall diffuser and the AZB and chronic mixing zone boundary (MZB) in the Columbia River. These boundaries were the focal points of field measurements of dilutions to allow for direct comparisons to model-predicted dilutions. Refer to Figure 2-1 later in this report for an accurate survey-based plan view of the new outfall and AZB and MZB boundaries.



Figure 1-6. Schematic Illustration of SCTP New Outfall and Diffuser Location and Acute and Chronic Mixing Zone Boundaries in the Columbia River

Source: Jacobs Mapping-Maxar Imagery, June 2021

## 1.2 Project Purpose, Requirements, and Objectives

### 1.2.1 Project Purpose and Requirements

To document the design of the SCTP effluent pipeline and Columbia River outfall (Phase 5A Project), the Alliance and District submitted an *Engineering Report for the Phase 5A Project—Columbia River Outfall and Effluent Pipeline* (CH2M, 2018) to Ecology in March 2018 for review and approval. On February 11, 2019, Ecology issued their letter approving the Engineering Report with specific comments and conditions for approval as follows:

- *Engineering Analysis* – “The outfall diffuser structure is well considered for the location, but mixing will need to be confirmed with a dye study after installation”; and
- *Impact on Mixing and Seasonal Mixing Zone Ratios* – “Final mixing zone ratios and seasonal mixing zone ratios (critical low-flow season tentatively proposed as May-Oct inclusively) have not been...agreed upon to date. After completion of construction, the District will need to submit a request for seasonal mixing zones [dilutions] if they want to enjoy less stringent limits in the non-critical seasons. This request would need to be supported with ambient and effluent flow data, and a mixing zone study (including dye study results) that is sufficient to support the determination of seasonal mixing zones at the critical conditions in each of the established seasons.”

In addition, the Endangered Species Act (ESA) Biological Opinion approval of the Phase 5A Project—Columbia River Outfall and Effluent Pipeline prepared by NOAA National Marine Fisheries Service and USACE includes the following terms and conditions:



- *Outfall Mixing Performance Study Report* – “Verify compliance with State water quality criteria, and verify that the outfall diffuser functions as designed, by performing a Field Tracer Performance Study during the first low river flow season (September–October) following outfall construction. Use the field-measured dilutions to calibrate and validate the dilution modeling that serves as the basis for design. Use the calibrated model to predict dilutions under design river flows and effluent flows, as defined in the Washington State Department of Ecology’s (Ecology) Permit Writer’s Manual and in the applicant’s Phase 5A Project Engineering Report. Document the results of the Field Tracer Performance Study and dilution modeling in the Outfall Mixing Performance Study Report.”

These requirements listed above provide the basis for conducting this Outfall Mixing Performance Study. In addition, the Alliance and District have determined that they do not need to request seasonal dilution factors (DFs) for the non-critical seasons at this time, and, therefore, this study addresses dry and wet season discharge conditions to define discharge dilutions under critical receiving water conditions as defined in WAC 173-201A-020 (Ecology, 2022), Tables VI-3 and VII-1, and in Appendix C of the Permit Writer’s Manual: *Guidance for Conducting Mixing Zone Analyses* (Ecology, 2018).

### 1.2.2 Project Objectives

The objectives of the Outfall Mixing Performance Study for the new SCTP Columbia River Outfall diffuser are to collect site-specific field measurements of the new SCTP outfall diffuser dilution performance, to generate dilution modeling results for the field study conditions to select the representative dilution model, and to generate dilution modeling results for critical low river flow conditions (as defined in Ecology’s guidance), to evaluate discharge compliance with water quality standards, and to produce a technical study report that documents the dilution performance of the new SCTP Columbia River Outfall diffuser under critical receiving water conditions during dry and wet season conditions.

This study has been designed and conducted following Ecology’s guidance for determining dilutions under critical receiving water conditions as defined in WAC 173-201A-020 (Ecology, 2022), Tables VI-3 and VII-1, and in Appendix C of the Permit Writer’s Manual: *Guidance for Conducting Mixing Zone Analyses* (Ecology, 2018). Further, the selection and application of dilution models were consistent with the *Guidance for Conducting Mixing Zone Analyses* in Ecology’s Permit Writer’s Manual, and the validation and calibration of models using field tracer study were consistent with Section 1.6.2 in the *Guidance for Conducting Mixing Zone Analyses*. Lastly, application of dilutions at the AZB and MZB were done in accordance with Ecology’s Permit Writer’s Manual.

### 1.2.3 Mixing Zone Study Plan

An Outfall Mixing Performance Study Plan was developed to document the specific approach and methods for conducting the Outfall Mixing Performance Study of the new SCTP outfall diffuser discharge to the Columbia River. This Study Plan includes the detailed approach and methods for collection of field measurements, quality assurance and control measures, dilution modeling, and reporting. The Study Plan document was submitted to Ecology for review in mid-June 2022, and it was approved by Ecology in late-June 2022. The SCTP Outfall 001 Mixing Performance Study Plan is provided in Appendix B-1 in this report. The Study Plan was developed specifically to define the field measurements methodology necessary for this study to provide the elements defined in Ecology’s Permit Writer’s Manual, as well as to provide the dilution modeling objectives and approach.

## 1.3 Study Approach

The Outfall 001 Mixing Performance Study involves the collection of site-specific field measurements including a dye tracer study of the new SCTP outfall diffuser under low river flow conditions, and then using these data to develop accurate model predictions of discharge dilutions for the field-measured conditions and then other dry and wet season low river flow conditions. The approach and details of the steps performed in the Outfall 001 Mixing Performance Study include the following key study activities: (1) collection of site-specific field measurements of the dilution performance of the new Columbia River

Outfall under low river flow conditions, (2) collection of field measurements of receiving water characteristics (i.e., current speeds and directions), (3) field measurements of the duration and magnitude of reflux potential during tidal-induced flow reversals at the diffuser site, (4) dilution modeling of the field-measured conditions to select and calibrate the dilution model used for critical seasonal conditions, (5) development of dilution modeling predictions for a range of critical dry and wet season discharge and tidal-influenced conditions, and (6) assessment of discharge compliance with State water quality chemical criteria and temperature standards.

The study was conducted using the estuary-based mixing zone boundary distances for the SCTP outfall diffuser (refer to Figure 1-6), in accordance with guidance provided in Ecology's Permit Writer's Manual.

Jacobs conducted the field study of the new SCTP Outfall 001 diffuser during low river flow in the late summer period (mid-September). Since the discharge site is subject to tidal-induced flow reversals, the field study was time to capture ebb and flood tidal conditions. The field study included the collection of site-specific physical measurements (e.g., current speed and direction, water column density profiles) near Outfall 001 and a 2-day dye tracer study of the outfall diffuser to represent the discharge dilutions during both ebb and flood tidal conditions. The dye tracer study used a fluorescent, water soluble, biodegradable dye (Rhodamine WT) as the wastewater surrogate tracer because calibrated fluorometers can accurately measure this dye tracer to 0.5 parts per billion (ppb). The measured difference between the initial dye tracer concentrations in the effluent prior to discharge to the river and the dye tracer concentration measured in the river near the Outfall 001 diffuser are the field-measured dilutions for specific river flow and tidal conditions.

Field-measured dilutions were compared to model-predicted dilutions for the same conditions, and the most accurate and representative dilution model was selected to apply in all modeling cases for a wide range of river flow conditions. Dilution modeling was then performed using receiving water data, SCTP effluent data, and the selected dilution model under a range of critical discharge and ambient conditions as defined in Ecology's Permit Writer's Manual.

Effluent chemistry data for SCTP were used to assess the discharge compliance with the acute and chronic chemical criteria and effluent temperature data were used to assess compliance with temperature standards. This study report was prepared to summarize the Outfall 001 Mixing Performance Study, including the field data, dilution modeling, and supporting documentation. This study report has been submitted to Ecology to meet the requirements specified in Section 1.2.1.

In addition, this report includes Ecology's Mixing Zone Study Requirement Checklist in Appendix B-2 to clearly define where the information required by Ecology for mixing zone studies can be found within this SCTP Outfall 001 Outfall Mixing Performance Study Report.

## 2. Field Study – Methods and Results

This section describes the study methodology, data analysis methods, and results of the field data collections, as well as summarizing the receiving water and effluent characteristics data used in this outfall mixing performance study. The methods and instruments used to conduct this study follow the Study Plan (refer to Appendix B).

### 2.1 Field Activities and Methods

The field study of the SCTP Outfall 001 was conducted by Jacobs from September 18 through 23, 2022. Field data collections included the following elements: a 2-day tracer study to measure dilutions in the receiving water upstream and downstream of the outfall diffuser under ebb and flood tides; site-specific field measurements of the receiving water conditions around the Outfall 001 diffuser under critical low river flow conditions; and instrument calibrations before and after use for the field tracer study.

The field measurements conducted at the outfall site are summarized below:

- A comprehensive bathymetric survey was conducted to record water depths and riverbed and channel conditions upstream and downstream of the outfall diffuser construction site in August 2021. The bathymetric survey covered an area approximately 1,200 feet in length (south to north along shore) and approximately 1,500 in width (from shoreline into river – west) in the Columbia River. This detailed river bathymetry was used as the base chart for the field study navigation in September 2022. A post-construction bathymetry survey was conducted in January 2023 following the removal of the original outfall and nearshore riprap cover, and this bathymetry survey is included in Appendix A-2 along with the post-construction dive inspection of the new outfall diffuser.
- Measurements of current speed and direction, and depth were recorded in the river during the field tracer study using an anchored buoy cable-array with two mounted current meters located approximately 100 feet upstream (east) of Outfall 001 diffuser midpoint. Two Nortek Aquadopp acoustic doppler current profiler meters were positioned at mid-depth and near bottom to record river velocity and water elevation change measurements for 3 minutes every 10 minutes for the 46 hours of deployment. The meter data are provided in Tables C-1 and C-2 in Appendix C.
- Preparation of the tracer (Rhodamine WT dye) injection into the SCTP effluent, set up and testing of the initial tracer sampling and measurement instruments, preparation of tracer standards (effluent and receiving water), and calibrations of the field instruments were performed.
- Initial effluent tracer concentrations were monitored and recorded using a Turner Designs, Inc., 10-AU fluorometer and SCUFA in situ fluorometer. Effluent was pumped from a weighted hose intake located approximately 50 feet downstream of the UV level control weir and within approximately 5 feet of entrance to the Outfall 001 pipe. This allowed the initial dye tracer samples to be collected after the effluent flow with the dye plunged over the weir and mixed in the pump station chamber.
- Receiving water tracer measurements were performed using a Turner Designs, Inc., Self-Contained Underwater Fluorescence Apparatus (SCUFA) in situ fluorometer, integrated with a SeaBird Electronics SBE-19PlusV2 conductivity-temperature-depth (CTD) instrument. These were used to perform vertical sampling profiles (and horizontal transects) of dye concentrations, temperature, conductivity, and sampling depths. Detailed tabular listings of all tracer measurements and resulting dilutions are provided in Tables D-1 through D-34. Pre- and post-study instrument calibration plots are provided in Figures D-1 and D-2 for the two fluorometers used to measure initial dye concentrations and provided in Figure D-3 for the receiving water fluorometer (see Appendix D). Effluent initial dye concentration measurements at the SCTP injection site on September 21 and 22, 2022, are plotted in Figure D-4 in Appendix D.
- Field tracer measurements were performed from a 21-foot jet sled, and field sampling locations were recorded using a Trimble Differential Global Positioning System (DGPS) with onboard navigation

system (Hypack software) displaying precise sampling locations. Sampling profiles and transects are described and plotted in Section 2.2.

- During the study period, measurements of the tracer concentrations were recorded as vertical water column profiles at distances from the outfall diffuser in the path of the discharge plume, depending on tidal conditions. These data collections were used to define the effluent concentrations (dilutions), and to determine the width and location of the discharge plume in the water column. The SCTP Outfall 001 mixing zone boundaries are defined in the Predesign Engineering Report and reiterated in Section 1.1.3 as follows: the AZB at 24 feet in any direction from the outfall diffuser ports, and the MZB at 242 feet in any direction from the outfall diffuser (see Figure 1-6).
- Pre- and post-study instrument calibrations and the download of field data from all instruments were completed for the SCUFA submersible fluorometers and the Turner 10-AU fluorometer. The manufacturer or instrument rental source calibration verifications for the Aquadopp current meters and Sea-Bird CTD instruments were confirmed prior to the study.

### 2.1.1 Tracer Injection and Initial Tracer Measurements

The field tracer study used a fluorescent, water soluble, non-toxic tracer (Rhodamine-WT dye) that was injected into the flowing effluent immediately upstream of the UV level control weir (downstream of UV disinfection). The injection rate was calculated for the range of effluent discharge flow rates so that the initial effluent tracer concentration could be kept as constant as possible throughout the entire study. The tracer injection rate was adjusted in response to changes in the real-time effluent flow rate (displayed on a supervisory control and data acquisition computer screen near the outfall box structure). Initial dye concentration measurements were recorded using a Turner 10-AU fluorometer and a Turner SCUFA instrument that were submerged in a continuous flow of effluent pumped from the effluent flowing through the pump station to the outfall inlet. The sample intake hose was located approximately 50 feet downstream from the UV level control weir where the tracer was injected.

The dye tracer was injected into the effluent flow with a MasterFlex® model 7523-80 variable speed peristaltic pump. To provide a backup pump, two separate pumps were set up and calibrated prior to the start of the dye injection; only one of the pump setups was used for the duration of the injection. The tracer injection rate ranged between 12.5 and 26 milliliters per minute during the injection periods to align with the changing effluent flows, and the target injection concentration was 800 ppb.

The effluent flows during the tracer measurements in the river ranged from 4.8 to 10.4 mgd, which is a typical diurnal flow range for dry weather discharge conditions; initial tracer (dye) concentrations entering the outfall after mixing ranged from 680 to 925 ppb during the field measurements period (refer to Figure D-4 in Appendix D). On September 21, the tracer injection at the treatment plant began at 0711 Pacific Daylight Time (PDT) and ended at 1730 PDT. On September 22, the tracer injection at the treatment plant began at 0715 Pacific Daylight Time (PDT) and ended at 1530 PDT.

The Turner 10-AU fluorometer and SCUFA instruments provided continuous measurements of the mixed tracer concentration in the effluent flowing to the outfall pipe. The distance from the initial tracer sampling point to the first outfall diffuser port on Outfall 001 is approximately 7,000 feet, and the calculated travel time in the 30-inch-diameter and 48-inch-diameter outfall segments to the diffuser ranged from 74 minutes at 5 mgd flow to 37 minutes at 10 mgd flow during the 2-day study. Initial dye concentrations prior to discharge from the SCTP outfall diffuser in the river were calculated continuously based on the effluent flow at the SCTP and travel time to the diffuser.

### 2.1.2 Field Tracer Measurements in River

Field measurements of tracer discharged from the SCTP outfall diffuser began at 0900 PDT and ended at 1802 PDT September 21, and began at 0834 PDT and ended at 1547 PDT September 22. The field tracer study included the following measurements and methods:

- Vertical profile measurements of tracer concentrations in the water column at the AZB and MZB both south and north of the outfall diffuser (depending on ebb and tidal currents), as well as at a background stations located up-current of the outfall and outside of any plume influence. Horizontal transects to measure across the discharge plume at a fixed depth were also performed twice when the plume depth in the water column was clearly determined. Measurements of temperature, conductivity, and turbidity were recorded at the same time and the same locations as the tracer measurements. Sampling position coordinates were determined using DGPS logging and the Hypack navigation system.
- Field dilution measurements in the river were performed from a 21-foot-long jet sled equipped with onboard navigation (real-time DGPS). The measurements of receiving water tracer concentrations were monitored using a SCUFA (in situ) fluorometer. The SCUFA was integrated with a SeaBird Electronics SBE-19 PlusV2 CTD instrument with direct data (real-time) logging to a laptop computer aboard the vessel.
- Sampling depths and tracer concentrations were recorded throughout each profile. Vertical sampling profiles were conducted to document the maximum dye concentrations (lowest dilutions) in the water column at fixed locations (anchored vessel) in the river. In addition, two transects were conducted along the north and south mixing zone boundary to document plume location and width.

### 2.1.3 Field Instruments and Calibration

Instruments and equipment used for the field study are listed in Table 2-1. A three-person scientific team was used to deploy instruments, set up and calibrate equipment, monitor recorders, record data, and perform the sampling activities. The 21-foot jet sled was used for deployment and retrieval of current meters and the ambient water quality measurements and tracer measurements. The work vessel was operated by AKS by an American-Congress-on-Surveying-and-Mapping-certified hydrographer to provide real-time navigation logging.

**Table 2-1. Instruments Used for Field Data Collections**

Equipment Item	Purpose	Number of Units	Accuracy Standard
Sea-Bird Electronics SBE-19PlusV2 CTD	Measure conductivity, temperature, and depth	2	Conductivity: $\pm 0.001$ S/m Temperature: $\pm 0.01^\circ\text{C}$ Depth: $\pm 0.05$ m
Turner Designs SCUFA submersible fluorometer	Measure effluent and ambient dye concentrations & turbidity (separate calibrations for effluent & river instruments)	4	<i>Fluorescence</i> : min. detection 0.05 ppb * (ambient) and max. detection 2,000 ppb (effluent); <i>Turbidity</i> : detection to 0.05 NTU
Dell Latitude D830 Laptop Computer	Sea-Bird CTDs data logging, Aquadopp current meters setup, and SCUFA calibrations	2	Not applicable
Trimble R7 GNSS	Vessel positioning	2	$\pm 0.02$ m
Nortek Aquadopp current meter	Measure in situ current velocity (speed & direction), temperature, and instrument water depth	2	Speed: $\pm 0.5$ cm/sec Temperature: $\pm 0.01^\circ\text{C}$ Depth: $\pm 0.5\%$ full scale

\* Note: SCUFA instrument accuracy of 0.1 ppb is conservatively assumed for calculation purposes.

$^\circ\text{C}$  = degrees Celsius; cm = centimeter; cm/sec = centimeters per second; m = meter; max. = maximum; min. = minimum; NTU = nephelometric turbidity unit; S/m = Siemens per meter.

Each instrument was tested and calibrated before the field study. The calibration methods for each instrument were followed as described in the Study Plan (Appendix B).

#### 2.1.4 Quality Assurance/Quality Control

The Quality Assurance/Quality Control (QA/QC) measures applied by Jacobs followed engineering standards of performance for data collection, calibration, and verification methods to ensure that the outfall mixing zone study provided high quality and verifiable data. The QA/QC goals and measures for key study elements are defined below.

##### 2.1.4.1 Initial Tracer Injection and Concentrations

**QA Goal.** Provide known and verifiable tracer (dye) injection rates and initial tracer concentrations.

**QC Measures.** Tracer injection pumps and tubing systems were calibrated twice (i.e., pre- and post-study) and tested to confirm the delivery rate of the dye tracer. Duplicate injection pumps and tubing systems were set up as a contingency against sudden failure of one system. Effluent tracer measurements were recorded every 10 seconds using the 10-AU fluorometer and every minute using the SCUFA instrument. These initial tracer concentration data provide an accurate measure of the effluent tracer concentration before discharge to the river.

##### 2.1.4.2 Tracer Measurements

**QA Goal.** Provide verifiable equipment calibration with pre- and post-study calibrations of fluorometer instruments.

**QC Measures.** The calibration record for each instrument was recorded, and calibrations were within the manufacturer's acceptable tolerances. Tracer (dye) standards were prepared using background river water and volumetric glassware, and these standards included concentrations of 5, 10, 25, and 50 ppb. The Turner Designs, Inc., SCUFA fluorometers were set up and calibrated within their range of linear readings (1 to 50 ppb) using these dye standards, both before and following the tracer study. The SCUFA instruments used to measure effluent initial concentrations were calibrated using effluent tracer standards of 500, 750, and 1,000 ppb. Variances in the post-study calibration from the pre-study calibration were corrected in the field measurements data by using calculated correction factors developed from the pre- and post-study calibration data. Plots of the pre-study and post-study calibration results for the 10-AU fluorometer and SCUFA instrument used for initial dye measurements in the effluent are provided in Figures D-1 and D-2 in Appendix D, and pre-study and post-study calibration results for the SCUFA fluorometer used in the river measurements are provided in Figure D-3 in Appendix D.

##### 2.1.4.3 Sample Positioning

**QA Goal.** Maintain accurate positioning of measurement sites.

**QC Measures.** During the current meter array deployment and field tracer study, vessel and sample positioning were determined using a real-time DGPS with real-time kinetics (RTK) corrections. The DGPS signal estimated percent error (EPE) output was checked before, during, and after the tracer study to confirm that the signal EPE was less than 1 meter.

##### 2.1.4.4 Instrument and Equipment Redundancy

**QA Goal.** Provide equipment redundancy (i.e., backup equipment) for all key instruments used in the study.

**QC Measures.** Redundant or backup instruments were prepared and kept in standby for the fluorometer instruments, DGPS, injection pumps, conductivity/temperature/depth instruments, and the laptop computers. Duplicate Aquadopp current meters were deployed on one cable array to provide redundant measurements. A calibrated backup SCUFA instrument on a Sea-Bird CTD was also available in the event that the primary fluorometer instrument used for the river measurements did not function.

##### 2.1.4.5 Field Study Planning

**QA Goal.** Pre-study planning and organization to clarify site-specific conditions and plan for efficient and uninterrupted field work.

**QC Measures.** A Study Plan was developed and submitted to Ecology in June 2022 and it was approved by Ecology later in June 2022. In addition, a field operation plan for conducting the study was developed as the basic element of quality assurance and control activities. The operations plan was provided to the Alliance, District, and SCTP personnel before the field study and included equipment, personnel assignments, communications, logistics, and project schedules. A site logistics visit to the SCTP was conducted on July 13, 2022, to review the specifics for dye injection and instrument setup for the study.

## 2.2 Field Tracer and Dilution Measurements

Tracer injection and field tracer sampling measurements were conducted on September 21 and 22, 2022. The field tracer study was conducted during low river flow conditions, and the daily average flow in the Columbia River near RM 96 was approximately 96,000 cubic feet per second (cfs) on September 21 and 88,000 cfs on September 22, 2022. More than 20,000 tracer concentration measurements were recorded during the study to characterize the dilutions of the discharge plumes from the new SCTP Outfall 001 diffuser at the acute and chronic mixing boundaries. Continuous measurements of the effluent flow and initial tracer (dye) concentrations were recorded on September 21 and 22 (refer to Figures D-4 and D-5 in Appendix D).

The effluent initial tracer concentrations have been applied along with the river tracer measurements to calculate the actual wastewater dilutions in the river. Initial dye concentrations prior to discharge from the SCTP outfall diffuser in the river were calculated continuously based on the effluent flow at the SCTP and travel time to the diffuser (travel time ranged from 74 minutes at 5 mgd flow to 37 minutes at 10 mgd flow) and travel time from diffuser ports to river sampling sites (travel time range from 15 to 60 seconds to the AZB; and 5 to 12 minutes to the MZB). Field measurements of tracer concentrations in the river were conducted as water column profiles to document the plume elevation and concentrations in the river water column. Two transects were conducted to confirm plume locations and document the lateral extents (width) of the plume and the range of concentrations.

On September 21, field tracer measurements of the Outfall 001 diffuser performance were conducted on the river during a 9-hour period from 0900 to 1802 PDT. Fourteen detailed water column profiles and two transects were conducted at the AZB (24 feet from the diffuser) and at the MZB (240 feet from the diffuser). On September 22, field tracer measurements of the Outfall 001 diffuser performance were conducted on the river during a 7-hour period from 0900 to 1600 PDT. Fourteen detailed water column profiles were conducted at the AZB and at the MZB. These twenty-eight water column profiles and two transects collected 16 hours of field tracer measurements to characterize the SCTP Outfall 001 diffuser performance under ebb and flood tide conditions during low river flow stage.

In addition, background profiles were recorded in four profiles during the study: two before the start of mixing zone measurements on September 21, one at the end of the day on September 21, and one before the start of mixing zone measurements on September 22. These background profiles were performed 250 and 700 feet up-current (south) in the river channel during ebb tide conditions. It is important to perform background measurements to document any background tracers or fluorescent interference in the river. Background measurements show no detected tracer dye with values reading 0.02 to 0.22 ppb as background levels equal to the instrument detection limits.

The coordinates of the first and last outfall diffuser ports, based on the as-built drawings, were applied in the onscreen vessel navigation display using the RTK-GPS to provide accurate measurement of distances from the diffusers and the locations of the AZB (24 feet from the diffuser) and at the MZB (240 feet from the diffuser).

All field dilution study measurements are provided for all tracer measurement profiles and transects in Tables D-1 through D-34 in Appendix D. The locations of all tracer sampling profiles in the river conducted during the Outfall 001 study are shown in Figure 2-1 along with the river bathymetry contours. Figure 2-1 is a CAD-generated figure showing the location of each sampling profile and transect (start and

end), the current meter array location (CM deployment), and the navigation marker offshore of the diffuser end.

Table 2-2 summarizes the field tracer study sampling and measurement results for the SCTP Outfall 001. The table includes profile and transect name, sampling times, sampling date, sampling site location, water depth at sites, tidal condition during sampling, ambient current speed, water sampling depth, the primary plume depth in the water column, a description of each profile and transect, a summary of the dilution results for each profile and transect, and the corresponding appendix data table for each. The dilution measurements in Table 2-2 are presented in three columns as minimum average dilution (average of lowest readings in profile or transect), the detected plume average dilution (average of main plume body in profile or transect), and the profile average dilution (average of all readings in water column). Profiles and transects were conducted at the north and south AZB (24 feet from the diffuser) and at the north and south MZB (242 feet from the diffuser), dependent on the tidal current direction of flow.



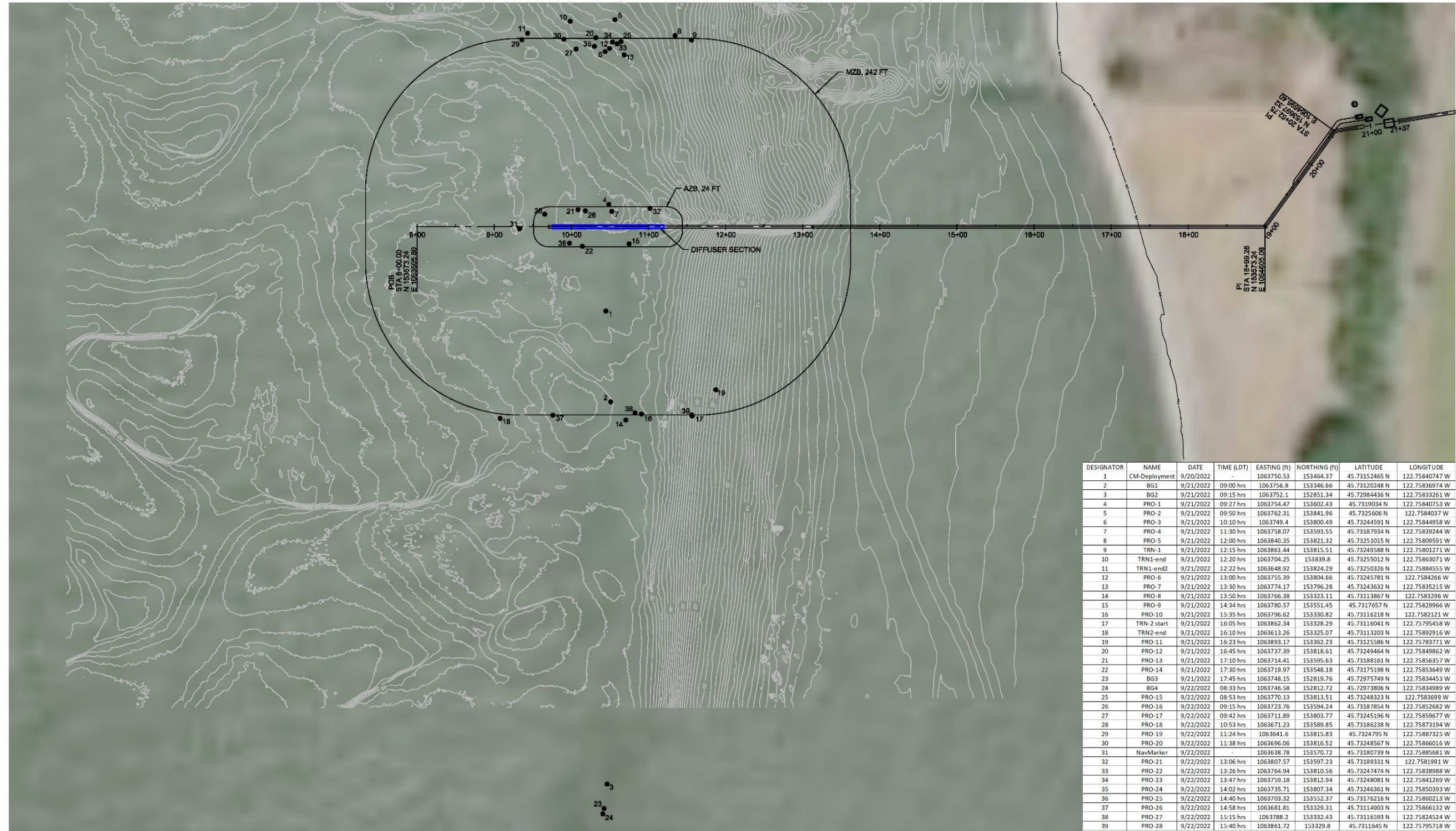


FIGURE 2-1. SCTP OUTFALL 001 FIELD TRACER SAMPLING SITES (SEPT. 21-22, 2022)



SCALE 1" = 60'-0"



**Table 2-2. Summary of Field Tracer Study Measurements for the SCTP Outfall**  
*Outfall Mixing Zone Study Conducted on September 21 and 22, 2022*

Profile and Transect Name	Sampling Time (PDT)	Sampling Date	Sampling Location	Water Depth (feet)	Tidal Condition	Current Speed (m/sec)	Sampling Depth (feet below surface)	Primary Plume Depth (ft)	Minimum Average Dilution	Detected Plume Average Dilution	Profile Average Dilution	Sampling Details	Appendix Data Tables
BKGRD-1	0900-0908	9/21/22	Background site south of diffuser	49	Ebb (flow north)	0.50 m/sec	continuous	-	ND	ND	ND	Background located 240 feet south of diffuser	D-1
BKGRD-2	0914-0920	9/21/22	Background site south of diffuser	49	Ebb (flow north)	0.53 m/sec	continuous	-	ND	ND	ND	Background located 700 feet south of diffuser	D-2
PRO-1	0928-0934	9/21/22	North AZB (24 ft)	48	Ebb (flow north)	0.48 m/sec	continuous	33 - 44 ft	48	132	-	Port plumes near bottom at AZB	D-3
PRO-2	0951-1002	9/21/22	North MZB (242 ft)	48	Ebb (flow north)	0.53 m/sec	continuous	20 - 38 ft	228	459	691		D-4
PRO-3	1010-1042	9/21/22	North MZB (242 ft)	48	Ebb (flow north)	0.51 m/sec	continuous	28 - 43 ft	200	380	599		D-5
PRO-4	1128-1146	9/21/22	North AZB (24 ft)	48	Ebb (flow north)	0.49 m/sec	continuous	38 - 44 ft	45	163	-	Port plumes near bottom at AZB	D-6
PRO-5	1157-1224	9/21/22	North MZB (242 ft)	48	Ebb (flow north)	0.36 m/sec	continuous	32 - 38 ft	205	291	997	Inshore location	D-7
TRN-1	1227-1238	9/21/22	North MZB (242 ft)	41-45	Ebb (flow north)	0.30 m/sec	38 ft	38 ft	194	334	387	Transect E to W along north MZB	D-8
PRO-6	1300-1313	9/21/22	North MZB (242 ft)	50	Ebb/Flood Reversal	0.09 m/sec	continuous	2 ft & 45 ft	150	398	1675	Plume at surface and near bottom depths	D-9
PRO-7	1332-1341	9/21/22	North MZB (242 ft)	49	Flood (flow south)	0.04 m/sec	continuous	14 ft	994	994	3571	Background at north MZB after tide reversal	D-10
PRO-8	1353-1413	9/21/22	South MZB (242 ft)	47	Flood (flow south)	0.21 m/sec	continuous	2 - 42 ft	123	259	2383	Measures at south MZB at early flood tide	D-11
PRO-9	1434-1514	9/21/22	South AZB (24 ft)	48	Flood (flow south)	0.21 m/sec	continuous	35 - 42 ft	44	56	-	Port plumes near bottom at AZB	D-12
PRO-10	1542-1558	9/21/22	South MZB (242 ft)	48	Flood (flow south)	0.16 m/sec	continuous	24 - 44 ft	143	176	8642	Measures at south MZB - East side	D-13
TRN-2	1607-1616	9/21/22	South MZB (242 ft)	35-51	Flood (flow south)	0.09 m/sec	28 ft	28 ft	135	334	334	Transect E to W along South MZB	D-14
PRO-11	1626-1635	9/21/22	South MZB (242 ft)	27	Flood (flow south)	0.06 m/sec	continuous	-	ND	ND	ND	Located at south MZB inshore side	D-15
PRO-12	1647-1658	9/21/22	North MZB (242 ft)	50	Flood/Ebb Reversal	0.08 m/sec	continuous	8 - 46 ft	138	149	218	Measures at north MZB at early ebb tide	D-16
PRO-13	1710-1724	9/21/22	North AZB (24 ft)	50	Ebb (flow north)	0.23 m/sec	continuous	41 - 46 ft	27	48	-	Port plumes near bottom at AZB	D-17
PRO-14	1733-1742	9/21/22	South AZB (24 ft)	49	Ebb (flow north)	0.28 m/sec	continuous	-	3092	-	-	Background at south MZB after tide reversal	D-18
BKGRD-3	1750-1802	9/21/22	Background site south of diffuser	51	Ebb (flow north)	0.42 m/sec	continuous	-	ND	ND	ND	Background site 700 feet south of diffuser	D-19
BKGRD-4	0834-0842	9/22/22	Background site south of diffuser	49	Ebb (flow north)	0.52 m/sec	continuous	-	ND	ND	ND	Background site 700 feet south of diffuser	D-20
PRO-15	0854-0906	9/22/22	North MZB (242 ft)	48	Ebb (flow north)	0.48 m/sec	continuous	39 - 44 ft	1432	3651	-	Measures at north MZB inshore of plume	D-21
PRO-16	0915-0930	9/22/22	North AZB (24 ft)	48	Ebb (flow north)	0.50 m/sec	continuous	40 - 44 ft	43	66	-	Port plumes near bottom at AZB	D-22
PRO-17	0944-1002	9/22/22	North MZB (242 ft)	50	Ebb (flow north)	0.54 m/sec	continuous	30 - 44 ft	354	634	1605	Measures at north MZB - offshore (W) side	D-23
PRO-18	1054-1108	9/22/22	North AZB (24 ft)	47	Ebb (flow north)	0.48 m/sec	continuous	40 - 45 ft	37	93	-	Port plumes near bottom at AZB	D-24
PRO-19	1125-1136	9/22/22	North MZB (242 ft)	52	Ebb (flow north)	0.53 m/sec	continuous	32 - 36 ft	532	786	5780	Measures at north MZB - offshore (W) end	D-25
PRO-20	1139-1154	9/22/22	North MZB (242 ft)	50	Ebb (flow north)	0.53 m/sec	continuous	40 - 46 ft	353	596	1740	Measures at north MZB - offshore (W) side	D-26
PRO-21	1306-1319	9/22/22	North AZB (24 ft)	48	Ebb (flow north)	0.21 m/sec	continuous	35 - 42 ft	30	54	-	Port plumes near bottom at AZB	D-27
PRO-22	1328-1337	9/22/22	North MZB (242 ft)	48	Ebb (flow north)	0.12 m/sec	continuous	36 - 43 ft	164	382	1078	Measures at north MZB midpoint at late ebb	D-28
PRO-23	1347-1400	9/22/22	North MZB (242 ft)	48	Ebb/Flood Reversal	0.05 m/sec	continuous	2 - 16 ft	134	671	1550	Measures at north MZB mid during tide reversal	D-29
PRO-24	1403-1407	9/22/22	North MZB (242 ft)	48	Flood (flow south)	0.05 m/sec	continuous	2 ft	4678	6156	-	Background at north MZB after tide reversal	D-30
PRO-25	1440-1450	9/22/22	South AZB (24 ft)	48	Flood (flow south)	0.24 m/sec	continuous	37 - 43 ft	32	42	-	Port plumes near bottom at AZB	D-31
PRO-26	1458-1509	9/22/22	South MZB (242 ft)	47	Flood (flow south)	0.27 m/sec	continuous	30 - 36 ft	196	488	488	Measures at south MZB midpoint - early flood	D-32
PRO-27	1517-1532	9/22/22	South MZB (242 ft)	47	Flood (flow south)	0.27 m/sec	continuous	30 - 41 ft	159	251	977	Measures at south MZB - inshore of midpoint	D-33
PRO-28	1541-1547	9/22/22	South MZB (242 ft)	34	Flood (flow south)	0.28 m/sec	continuous	-	ND	ND	ND	Measures at south MZB - inshore on slope	D-34



## **2.2.1 Review of Outfall 001 Tracer Study Measurements**

Vessel positioning to record profiles and transects was coordinated to collect representative water column data in the plume at the AZB and MZB as shown in Figure 2-1. The work vessel was anchored for each profile and positioned to align with the AZB or MZB distance from the outfall diffuser. Transects were conducted from east to west along a mixing zone boundary with the instrument at a fixed depth (where plume was located from prior profile). The results of these profiles and transects are presented in the following section for sampling on September 21 and 22, 2022.

### **2.2.1.1 Profiles BKGRD-01 and BKGRD-02 (0900 to 0922 PDT; September 21)**

Field measurements were initiated south of the Outfall 001 diffuser (upstream under ebb tide flow) to document background conditions. Profile BKGRD-01 was conducted 250 feet south (upstream) and BKGRD-02 was conducted 700 feet south (upstream) of the Outfall 001 diffuser. Both background profiles did not detect any tracer dye but did yield background readings of 0.02 to 0.22 ppb in the water column. Background measurements can be due to turbidity and low level background fluorescence in the river due to algae or other inputs.

### **2.2.1.2 Profiles PRO-01, PRO-02, PRO-03, and PRO-04 (0928 to 1146 PDT; September 21)**

Profiles PRO-01 and PRO-04 were conducted at the north AZB (24 feet north of diffuser midpoint) during ebb tide. The water depths at these two profiles at the AZB were both 48 feet and river ebb current velocities ranged from 0.48 to 0.49 meter per second (m/sec) during these profiles. Measurements in PRO-01 recorded the main body of the port discharge plumes at 33 to 44 feet depth in 48 feet of water column (near bottom plume). The minimum average dilution in the plume was 48 and the average dilution for the detected plume was 132.

Two profiles were conducted at the north MZB (242 feet north of the diffuser midpoint) during ebb tide. The water depths at these two profiles at the AZB were both 48 feet and river ebb current velocities ranged from 0.53 to 0.51 m/sec during these profiles. Measurements in PRO-02 recorded the main body of the discharge plume at 20 to 38 feet depth in 48 feet of water column (mid-depth plume). The minimum average dilution in the plume was 228 and the average dilution for the range of detected plume was 459. Measurements in PRO-03 recorded the main body of the discharge plume at 28 to 43 feet depth in 48 feet of water column (plume in lower half of water column). The minimum average dilution in the plume was 200 and the average dilution for the range of detected plume was 380. Figure 2-2 provides a screen-shot of the PRO-03 raw tracer measurements data in the water column showing the detected tracer and the main plume location below 25 feet depth. The fluorescence indications at the surface are false and these are due to ambient light as the fluorometer enters the surface waters.

PRO-04 was conducted at the north AZB during ebb tide with ebb current velocity of 0.49 m/sec. Measurements in PRO-04 recorded the main body of the port discharge plumes at 38 to 44 feet depth in 48 feet of water column (near bottom of plume). The minimum average dilution in the plume was 45 and the average dilution for the range of detected plume was 163. Figure 2-3 provides a screen-shot of the PRO-04 raw tracer measurements data in the water column showing the detected port plumes location below 30 feet depth.

Refer to Table 2-2, Figure 2-1, and Tables D-3 through D-6 in Appendix D.

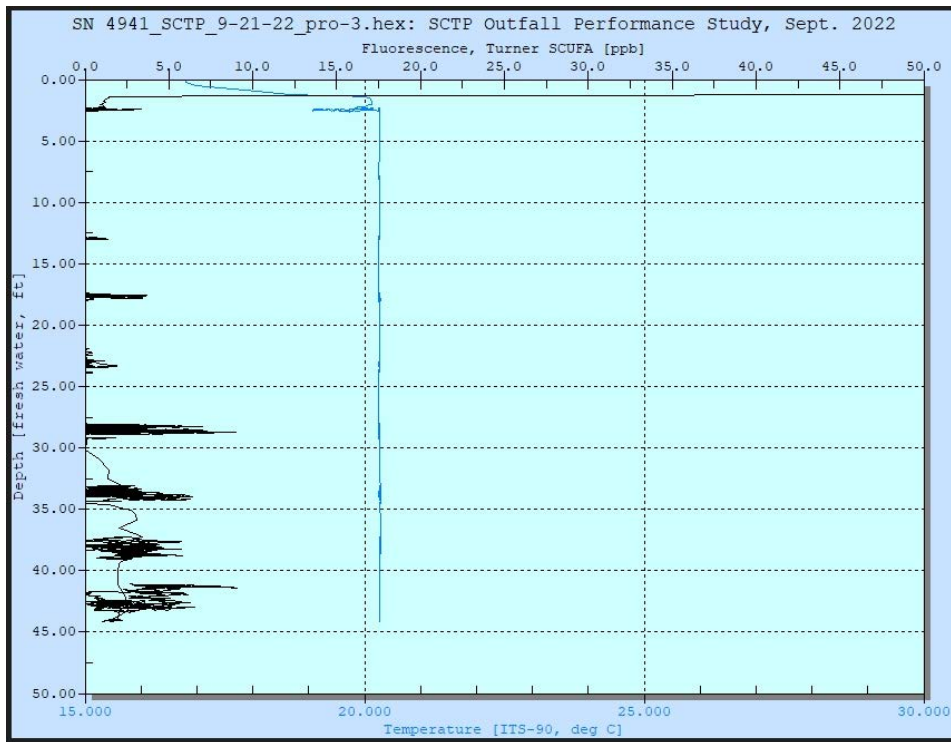


Figure 2-2. Screen-shot of PRO-03 Record in the Water Column at North MZB (Ebb Tide)

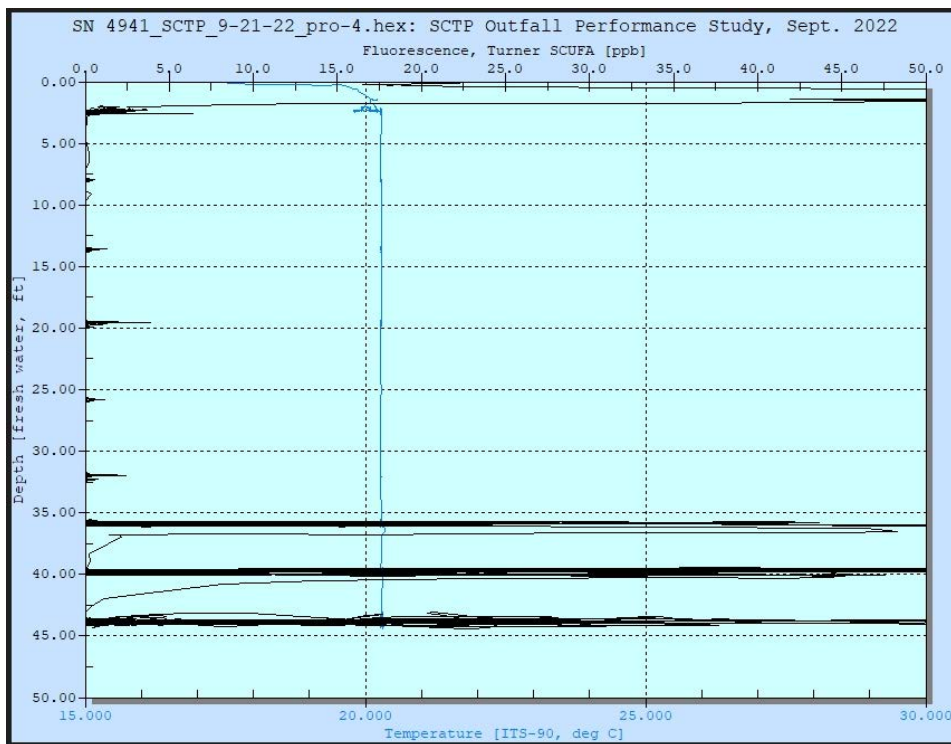


Figure 2-3. Screen-shot of PRO-04 Record in the Water Column at North AZB (Ebb Tide)

**2.2.1.3 Profiles PRO-05, PRO-06, and PRO-07 and Transect TRN-1 (1157 to 1341 PDT; September 21)**

Three successive profiles and one transect were conducted at the north MZB (242 feet north of the diffuser) during late ebb time and tide reversal to flood tide. Profile PRO-05 and Transect TRN-1 were conducted at the north MZB during late ebb tide. The water depth at Profile PRO-05 was 48 feet and depths along Transect TRN-1 ranged from 41 to 45 feet, and ebb river current velocities ranged from 0.36 to 0.30 m/sec during these measurements. PRO-05 was located at the north MZB at the inshore (east) end and downstream of diffuser ports No. 1 and 2. Measurements in PRO-05 recorded the main body of the discharge plume at 32 to 38 feet deep in 48 feet of water column. The minimum average dilution in the plume was 205 and the average dilution for the range of detected plume was 291. Measurements along TRN-1 were recorded from east to west along the north MZB at a fixed sampling depth of 38 feet. The sampling depth was selected based on the maximum plume tracer concentrations measured in PRO-05. The minimum average dilution in TRN-1 was 194 near the midpoint of the diffuser and the average dilution for the range of detected plume was 334 across the detected plume width. Refer to Table 2-2, Figure 2-1, and Tables D-7 and D-8 in Appendix D.

Profile PRO-06 was conducted at the north MZB near the diffuser midpoint during the tidal reversal from ebb to flood tide. The water depth at Profile PRO-06 was 50 feet and the ebb river current velocity at the start of the profile was 0.09 m/sec. Measurements in PRO-06 recorded the main body of the discharge in two separate plumes: one in the surface layer and one at the bottom (45 feet) of water column. The minimum average dilution in the plume was 150 and the average dilution for the range of detected plume was 398.

Profile PRO-07 was conducted at the north MZB near the diffuser midpoint (same anchored position as PRO-06) immediately after tidal reversal from ebb to flood tide. The early flood tide river current velocities at the start of the profile was 0.04 m/sec and directed south on flood tide. Measurements at PRO-07 recorded the discharge plume during early flood tide and only very low traces of dye (0.02 to 0.38 ppb) were recorded in the water column, and only three instantaneous dye measurements of 0.93 to 2.65 ppb were recorded at 14-foot depth in the water column. The minimum average dilution in these three possible detected plume values at 14 feet was 994 and the average dilution in the profile was 3,571. Note that background readings of 0.02 to 0.22 ppb in the water column were measured at the background sampling stations BKGRD-01 and BKGRD-02. Refer to Table 2-2, Figure 2-1, and Tables D-9 and D-10 in Appendix D.

**2.2.1.4 Profiles PRO-08, PRO-09, and PRO-10 and Transect TRN-2 (1353 to 1616 PDT; September 21)**

Three successive profiles and one transect were conducted at the south MZB (242 feet south of the diffuser) and the south AZB (24 feet south of the diffuser) during flood tide. Profile PRO-08 and PRO-10 and Transect TRN-2 were conducted at the south MZB, and PRO-09 was conducted at the south AZB.

PRO-08 was located at the north MZB near the diffuser midpoint and the water depth was 47 feet, and flood (south) current velocity measured 0.21 m/sec during the profile. Measurements in PRO-08 recorded the discharge plume throughout the 48 feet of water column with the highest concentrations near surface and at 19 to 36 feet deep. The minimum average dilution in the surface plume was 123 and 188 to 248 average dilutions at 19 to 36 feet deep. The average dilution for the range of detected plume was 259. Figure 2-4 provides a screen-shot of the PRO-08 raw tracer measurements data in the water column showing the discharge plume throughout the water column.

Profile PRO-09 was conducted at the south AZB (24 feet north of diffuser midpoint) during flood tide. The water depth at the profile was 48 feet and the flood current velocity was 0.21 m/sec. Measurements in PRO-09 detected the port discharge plumes only at 35 to 42 feet deep in 48 feet of water column (near bottom plume). The minimum average dilution in the plume was 44 and the average dilution for the range of detected plume was 56. Figure 2-5 provides a screen-shot of the PRO-09 raw tracer measurements

data in the water column showing the discharge plumes only at 35 to 42 feet deep. The fluorescence indications at the surface are false and these are due to ambient light as the fluorometer enters the surface waters.

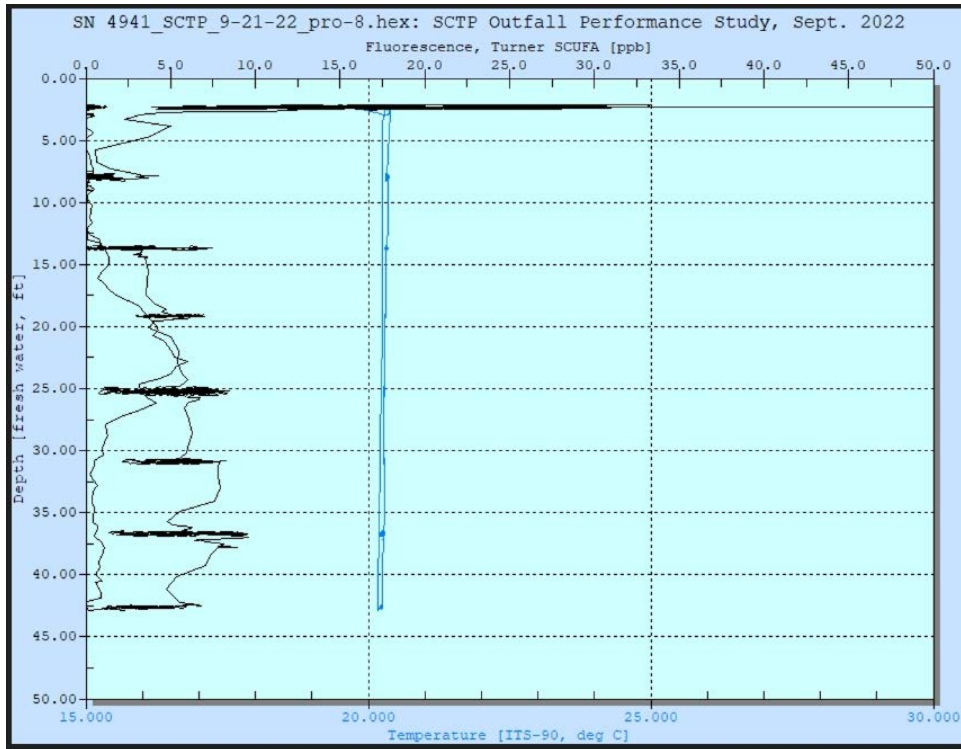


Figure 2-4. Screen-shot of PRO-08 Record in the Water Column at the South MZB (Flood Tide)

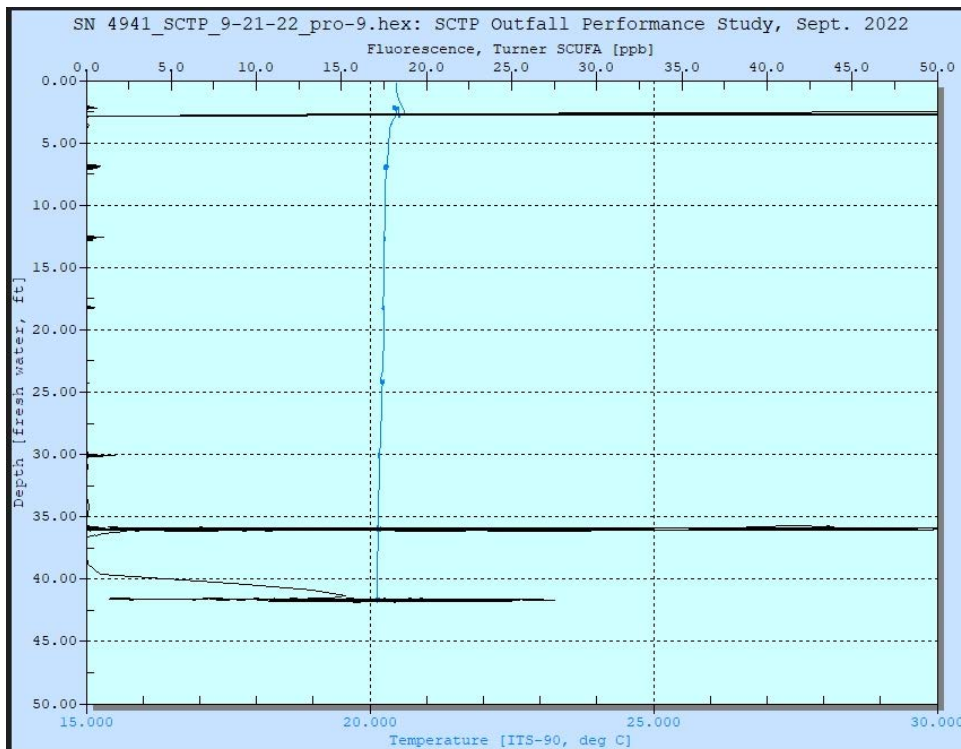


Figure 2-5. Screen-shot of PRO-09 Record in the Water Column at the South AZB (Flood Tide)



PRO-10 was located at the south MZB at the inshore (east) end and downstream of diffuser ports No. 1 and 2. The profile water depth was 48 feet and the flood (south) current velocity recorded was 0.16 m/sec during the profile. Measurements in PRO-10 recorded the discharge plume at 24 to 44 feet deep in the water column with the highest concentrations at 25 to 30 feet deep. The minimum average dilution in the plume was 143 and the average dilution for the range of detected plume was 176.

Measurements along TRN-2 were recorded from east to west along the south MZB at a fixed sampling depth of 28 feet. Water depths along Transect TRN-2 ranged from 35 to 51 feet, and flood current velocity recorded was 0.09 m/sec during these measurements. The minimum average dilution in TRN-2 was 135 near the midpoint of the diffuser and the average dilution for the range of detected plume was 334 across the detected plume width. Refer to Table 2-2, Figure 2-1, and Tables D-11 through D-14 in Appendix D.

#### **2.2.1.5 Profiles PRO-11, PRO-12, PRO-13, and PRO-14 and BKGRD-3 (1626 to 1802 PDT; September 21)**

Four successive profiles were conducted: two at both the south MZB and north MZB, and two profiles at both south AZB and north AZB during late flood tide to tide reversal and early ebb tide. In addition, profile BKGRD-03 was conducted at the background sampling station at the end of the first day of the field tracer study.

Profile PRO-11 was conducted at the south MZB and inshore of diffuser port No. 1 on the slope at a profile water depth of 27 feet. The late-flood (south) current velocity recorded was 0.06 m/sec during the profile. Measurements in PRO-11 did not record the discharge plume in the water column.

Tidal reversal from flood to ebb tide was observed at the diffuser site at 1630, just before profile PRO-12 was conducted at the north MZB. PRO-12 was conducted at the north MZB near the diffuser midpoint; the water depth was 50 feet, and ebb (north) current velocity measured 0.08 m/sec during the profile. Measurements in PRO-12 recorded the discharge plume throughout the water column with the highest concentrations below 7- to 46-foot depth. The minimum average dilution in the plume was 138, and the average dilution for the range of detected plume was 149. The average dilution for the entire water column profile was 218.

Profiles PRO-13 was conducted at the north AZB, west of the diffuser midpoint, during early ebb tide. The water depth at the profile was 50 feet and the ebb current velocity was 0.23 m/sec. Measurements in PRO-13 detected the port discharge plumes consistently at 41 to 46 feet deep in the water column (near bottom plume). The minimum average dilution in the plume was 27 and the average dilution for the range of detected plume was 48.

Profile PRO-14 was conducted at the south AZB after tide reversal to ebb tide to determine if any background plume concentrations were detectable in the water column 15 minutes after tide reversal. The water depth at the profile was 49 feet and the ebb current velocity was 0.28 m/sec. Measurements in PRO-14 recorded only very low traces of possible dye (0.02 to 0.45 ppb) in scattered measurements in the water column. Instantaneous measurements ranged from 0.02 to 0.34 ppb below 18-foot depth and ranged from 0.02 to 0.45 ppb in the upper water column. The minimum average dilution in the water column was 3,092. Note that background readings of 0.02 to 0.22 ppb in the water column were measured at the background sampling stations BKGRD-01 and BKGRD-02.

Profile BKGRD-03 was conducted 700 feet south (upstream) of the Outfall 001 diffuser. This background profile did not detect any tracer dye and yielded background readings of 0.02 to 0.12 ppb in the water column.

Refer to Table 2-2, Figure 2-1, and Tables D-15 and D-19 in Appendix D.

#### **2.2.1.6 Profile BKGRD-04 (0834 to 0842 PDT; September 22)**

Field measurements were initiated south of the Outfall 001 diffuser (upstream under ebb tide flow) to document background conditions. Profile BKGRD-04 was conducted 700 feet south (upstream) of the Outfall 001 diffuser. This background profile did not detect any tracer dye but did yield background readings of 0.02 to 0.12 ppb in the water column. Background measurements can be due to turbidity and low background fluorescence in river due to algae and other inputs.

#### **2.2.1.7 Profiles PRO-15, PRO-16, PRO-17, PRO-18, PRO-19, and PRO-20 (0854 to 1154 PDT; September 22)**

Six successive profiles were conducted at the north MZB (242 feet north of the diffuser) and the north AZB (24 feet north of the diffuser) during ebb tide on September 22.

Profile PRO-15 was conducted at the north MZB and inshore of the first diffuser port during ebb tide at a depth of 49 feet with ebb currents velocity of 0.48 m/sec. Measurements in PRO-15 recorded only traces of plume at 39 to 44 feet deep in the water column indicating that this inshore location was essentially outside of the discharge plume path. The minimum average dilution in the plume was 1,432 and the average dilution for the range of detected plume was 3,651.

Profiles PRO-16 was conducted at the north AZB and offshore of the diffuser midpoint during ebb tide. The water depth at PRO-16 was 48 feet and the ebb current velocity measured was 0.50 m/sec during the profile. Measurements in PRO-16 recorded the plume only below 39 feet with the port discharge plumes at 40 to 44 feet deep in 48 feet of water column (near bottom plume). The minimum average dilution in the plume was 43 and the average dilution for the range of detected plume was 66.

Profiles PRO-17 was conducted at the north MZB and west of the last offshore diffuser port during ebb tide. The water depth at PRO-17 was 50 feet and the ebb current velocity measured was 0.54 m/sec during the profile. Measurements in PRO-17 recorded the plume only below 30 feet with the main plume presence below 40-foot depth in 50 feet of water column (near bottom plume). The minimum average dilution in the plume was 354 and the average dilution for the range of detected plume was 634, indicating that this profile location was on the outer edge of the discharge plume.

Profile PRO-18 was conducted at the north AZB and offshore (west) of the diffuser midpoint during ebb tide. The water depth at PRO-18 was 47 feet and the ebb current velocity measured was 0.48 m/sec during the profile. Measurements in PRO-18 recorded the plume only below 39 feet with the port discharge plumes at 40- to 45-foot depth in 47 feet of water column (near bottom plume). The minimum average dilution in the plume was 37 and the average dilution for the range of detected plume was 93.

Profile PRO-19 was conducted at the north MZB and west of the last offshore diffuser port (directly north of the navigation marker) during ebb tide. The water depth at PRO-19 was 52 feet and the ebb current velocity measured was 0.53 m/sec during the profile. Measurements in PRO-19 recorded the plume traces only below 33 feet with the limited plume presence at 34- to 35-foot depth in 52 feet of water. The minimum average dilution in the plume was 532 and the average dilution for the range of detected plume was 786, indicating that this profile location was on the outer edge of the discharge plume.

Profile PRO-20 was conducted at the north MZB and approximately north of the last offshore diffuser port during ebb tide. The water depth at PRO-20 was 50 feet and the ebb current velocity measured was 0.53 m/sec during the profile. Measurements in PRO-20 recorded the plume only below 34 feet with the main plume presence below 40-foot depth in 50 feet of water column (near bottom plume). The minimum average dilution in the plume was 353 and the average dilution for the range of detected plume was 596, indicating that this profile location was on the outer edge of the discharge plume. These profiles conducted offshore of the last diffuser port document the location of the outer edge of the discharge plume under strong ebb current velocities.

Refer to Table 2-2, Figure 2-1, and Tables D-21 through D-26 in Appendix D.

### **2.2.1.8 Profiles PRO-21, PRO-22, PRO-23, and PRO-24 (1306 to 1407 PDT; September 22)**

Four successive profiles were conducted: one at the north AZB and three at the north MZB during the period of late ebb tide, during tide reversal to flood tide, and during early flood tide.

Profile PRO-21 was conducted at the north AZB and inshore of the diffuser midpoint during late ebb tide. The ebb current velocity recorded was 0.21 m/sec during the profile and the water depth was 48 feet. Measurements in PRO-21 recorded the plume only below 34 feet with the port discharge plumes centered at 36- to 42-foot depth in 48 feet of water column (near bottom plume). The minimum average dilution in the plume was 30 and the average dilution for the range of detected plume was 54.

Profile PRO-22 was conducted at the north MZB and near the diffuser midpoint during late ebb tide. The ebb current velocity recorded was 0.12 m/sec during the profile and the water depth was 48 feet. Measurements in PRO-22 recorded the plume only below 18 feet with the main body of discharge plume centered at 36- to 42-foot depth in 48 feet of water column (near bottom plume). The minimum average dilution in the plume was 164 and the average dilution for the range of detected plume was 382.

Tidal reversal from ebb to flood tide was observed at the diffuser site at 1340-1350, during period of conducting profile PRO-23 at the north MZB. PRO-23 was conducted at the north MZB near the diffuser midpoint, the water depth was 48 feet, and early flood (south) current velocity averaged 0.05 m/sec during the profile. Measurements in PRO-23 recorded the discharge plume in the upper 16 feet of the water column with the highest concentrations in the surface layer (2 feet). The minimum average dilution in the plume was 134, and the average dilution for the range of detected plume was 671. Figure 2-6 provides a screen-shot of the PRO-23 tracer measurements data in the water column showing the discharge plumes in the upper water column.

Profiles PRO-24 was conducted at the north MZB after tide reversal to flood tide to determine if any background plume concentrations were detectable in the water column 15 to 20 minutes after tide reversal. The water depth at the profile was 48 feet and the flood current velocity measured was 0.05 m/sec. Measurements in PRO-24 recorded only very low traces of possible plume (0.02 to 0.50 ppb) in scattered instantaneous measurements in the upper 6 feet of water column. No groupings of dye measurements were detected. The minimum average dilution in the water column was 4,678. Note that background readings of 0.02 to 0.22 ppb in the water column were measured at the background sampling stations.

Refer to Table 2-2, Figure 2-1, and Tables D-27 through D-30 in Appendix D.

### **2.2.1.9 Profiles PRO-25, PRO-26, PRO-27, and PRO-28 (1440 to 1547 PDT; September 22)**

Four successive profiles were conducted during flood tide: one at the south AZB and three at the south MZB during flood tide. Profile PRO-25 was conducted at the south AZB near midpoint of diffuser during flood tide. The water depth at the profile was 48 feet and the flood current velocity was 0.24 m/sec. Measurements in PRO-25 detected the port discharge plumes only below 35-foot depth, with the port plumes located at 37- to 43-foot depth in the water column (near bottom plume). The minimum average dilution in the plume was 32 and the average dilution for the range of detected plume was 42. Figure 2-7 provides a screen-shot of the PRO-25 tracer measurements data in the water column showing the discharge plumes located at 37 to 43 feet depth.

PRO-26 was located at the south MZB and offshore (west) of the diffuser midpoint. The profile water depth was 47 feet and the flood (south) current velocity recorded was 0.27 m/sec during the profile. Measurements in PRO-26 recorded the discharge plume at 30- to 36-foot depth in the water column with the highest concentrations at 30-foot depth. The minimum average dilution in the plume was 196 and the average dilution for the range of detected plume was 488.

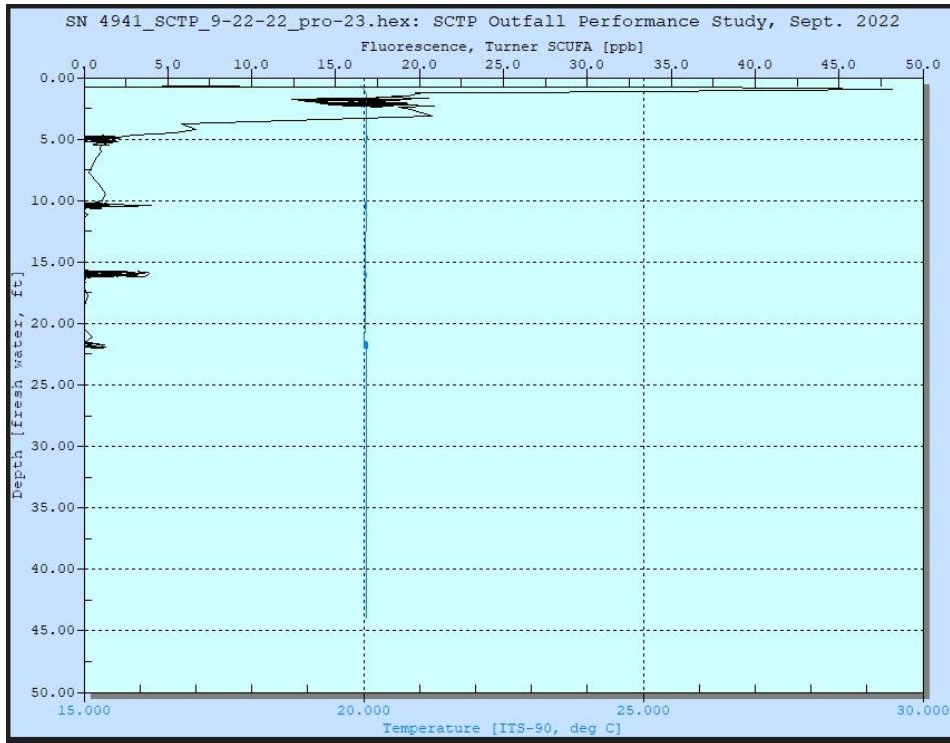


Figure 2-6. Screen-shot of PRO-23 Record in the Water Column at the North MZB (Ebb/Flood Tide Reversal)

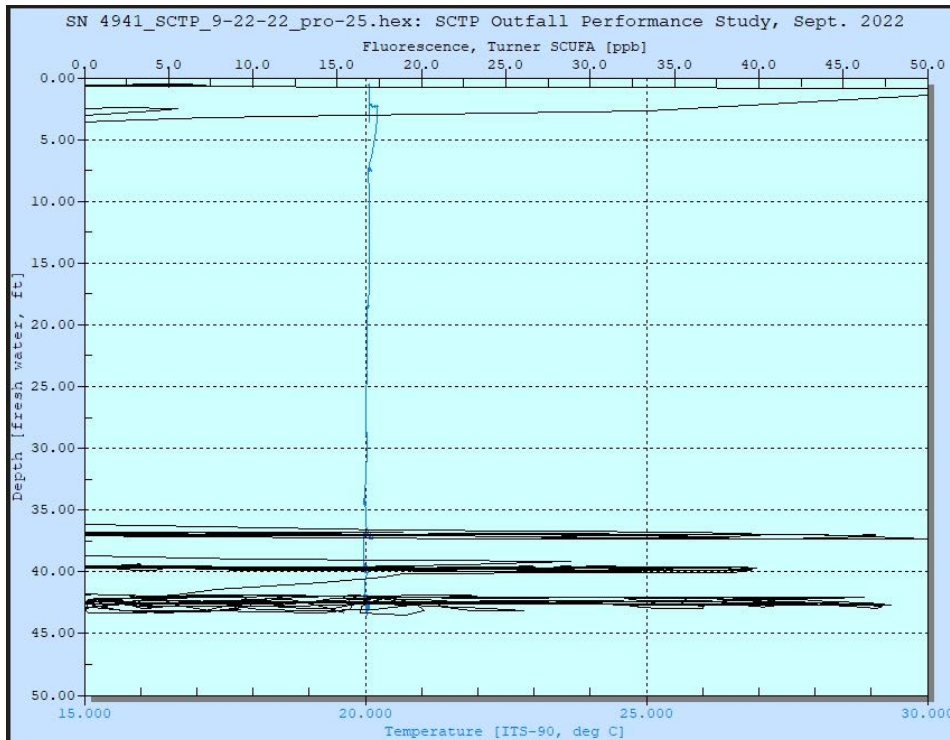


Figure 2-7. Screen-shot of PRO-25 Record in the Water Column at the South AZB (Flood Tide)

PRO-27 was located at the south MZB and inshore (east) of the diffuser midpoint. The profile water depth was 47 feet and the flood (south) current velocity recorded was 0.27 m/sec during the profile. Measurements in PRO-27 recorded the discharge plume at 30- to 41-foot depth in the water column with the highest concentrations at 35-foot depth. The minimum average dilution in the plume was 159 and the average dilution for the range of detected plume was 251.

PRO-28 was located at the south MZB and inshore of the diffuser on the slope. The profile water depth was 34 feet and the flood (south) current velocity recorded was 0.28 m/sec during the profile. Measurements in PRO-28 did not record any tracer concentration or the discharge plume in this profile, demonstrating that PRO-28 was inshore of the edge of the discharge plume on flood tide.

Refer to Table 2-2, Figure 2-1, and Tables D-31 through D-34 in Appendix D.

### 2.3 Evaluation of Plume Reflux Potential

Ecology's Permit Writer's Manual (Ecology, 2018) specifies that a field tracer study is the best means to define plume reflux for an outfall diffuser site that has tidal-induced flow reversals and potential plume reflux or overlap. The extensive field measurements of dilution for the new SCTP outfall diffuser conducted in September 2022 have been used as the basis for this evaluation of potential plume reflux.

Plume reflux for discharged plumes for the new SCTP outfall diffuser have been developed applying the methods defined in Appendix 6 – Guidance for Conducting Mixing Zone Analyses, Section 1.6.3 – Quantify Far-field Accumulation (Reflux), in the Permit Writer's Manual (Ecology, 2018) for Method 1, Alternative 1, as described in the guidance. Alternative 1 is applied when "tracer concentrations are measured in the near-field at the mixing zone boundary in the approximate centerline of the effluent plume."

In 2018, an *Evaluation of Plume Reflux Potential for the New Columbia River Outfall Diffuser for the Salmon Creek Treatment Plant Phase 5A Project – Columbia River Outfall and Effluent Pipeline* (Jacobs, 2018) was submitted to Ecology to support the 5A Engineering Report (CH2M, 2018). This early evaluation of plume reflux potential for the new 10-port SCTP outfall diffuser was developed based on the 2003 extensive field dilution study of the original 5-port SCTP outfall diffuser (CH2M, 2003). The 2018 evaluation documents that the original 5-port SCTP diffuser does not experience plume reflux due to the rapid tidal reversals, width of the Columbia River at RM 96 (>2,500 feet), and dynamic currents and mixing processes in the Columbia River. The 2018 evaluation of plume reflux potential for the new 10-port SCTP outfall diffuser is a very conservative representation since the new SCTP diffuser is located over 100 feet offshore of the original SCTP outfall diffuser and more than 20 feet deeper than the original diffuser. This early evaluation concluded that the new SCTP diffuser will not exhibit plume reflux potential and no adjustments to model-predicted dilutions are necessary.

Field measurements of current speed and direction at the SCTP outfall diffuser site provided accurate measures of the duration of tidal current reversals. The recorded duration of tidal current reversals for both ebb-flood and flood-ebb reversals on September 21 and 22, 2022, were all within 10 minutes. The current meters installed within 100 feet of the new SCTP outfall diffuser midpoint recorded current speed and direction at 10 minute intervals, so the actual tide reversal duration could be less than 10 minutes.

The 2022 field tracer study data are summarized in Table 2-2 and in Appendix D-2. Table 2-2 summarizes the location, depth, time, dye readings, and calculated DFs based on initial effluent dye concentrations and measured river dye concentrations. Dilutions summarized in Table 2-2 are minimum average dilution in plume, detected plume average dilution, and the profile average dilution. These tables provide data to understand plume direction and tidal reversal, to allow the definition of reflux. Table 2-3 presents a summary of a subset of 2022 field tracer study currents and dilution measurements focused on the measurements conducted before and after tidal-induced current reversals. Selected field measurements presented in Table 2-3 were applied in reflux calculations at the SCTP outfall diffuser MZB, and measurements that coincide with current reversals are identified in bold text in Table 2-3.

**Table 2-3. Measured Current Speeds and Directions and Minimum Average Dilutions During Tidal-induced Flow Reversals at the SCTP Outfall Diffuser in the Columbia River – Low River Flow Period (September 21 & 22, 2022)**

Time and Profile/Transect Number	Tide Condition	Current Direction	Current Speed (m/sec)	Conditions Observed	Minimum Average Plume Dilution
<i>September 21, 2022</i>					
<b>1300–1313 (PRO-6)</b>	<b>Ebb/flood reversal</b>	Downstream (north) to upstream (south)	0.09	<b>Currents reversed south in 5-10 minutes</b>	150 (North-MZB)
1332–1341 (PRO-07)	Flood	Upstream (south)	0.04	Early flood tide flowing upstream	<b>994 (North-MZB after reversal)</b>
1353–1413 (PRO-08)	Flood	Upstream (south)	0.21	Flood tide (~90% velocity)	123 (South-MZB)
1434–1514 (PRO-09)	Flood	Upstream (south)	0.21	Flood tide (~90% velocity)	44 (South-AZB)
1542–1558 (PRO-10)	Flood	Upstream (south)	0.16	Flood tide (~50% velocity)	143 (South-MZB)
1607–1616 (TRN-2)	Flood	Upstream (south)	0.09	Late Flood tide flowing upstream	135 (South-MZB)
<b>1626–1635 (PRO-11)</b>	<b>Flood/ebb reversal</b>	Upstream (south) to downstream (north)	0.06	<b>Currents reversed north in 5-10 minutes</b>	<b>2168 (South-MZB after reversal)</b>
1647–1658 (PRO-12)	Ebb	Downstream (north)	0.08	Early ebb tide flowing downstream	138 (North-MZB)
1710–1724 (PRO-13)	Ebb	Downstream (north)	0.23	Ebb tide flowing downstream	27 (North-AZB)
1733–1742 (PRO-14)	Ebb	Downstream (north)	0.28	Ebb tide flowing downstream	<b>3092 (South-MZB after reversal)</b>
<i>September 22, 2022</i>					
1139–1154 (PRO-20)	Ebb	Downstream (north)	0.53	Ebb tide (~50% velocity) flowing downstream	353 (North-MZB)
1306–1319 (PRO-21)	Ebb	Downstream (north)	0.23	Ebb tide flowing downstream	30 (North-AZB)
1328–1337 (PRO-22)	Ebb	Downstream (north)	0.12	Late ebb tide flowing downstream	164 (North-MZB)
<b>1347–1400 (PRO-23)</b>	<b>Ebb/flood reversal</b>	Downstream (north) to upstream (south)	0.05	<b>Currents reversed south in 5-10 minutes</b>	134 (North-MZB)
1403–1407 (PRO-24)	Flood	Upstream (south)	0.05	Early flood tide flowing upstream	<b>4678 (North-MZB after reversal)</b>
1440–1450 (PRO-25)	Flood	Upstream (south)	0.24	Flood tide (~90% velocity)	32 (South-AZB)

Plume reflux field measurements were as follows:

- PRO-07 (1332-1341 on 9-21-22) measurements at the north MZB within 20 minutes of tidal reversal from ebb to flood tide flow (DF = 994 = 0.1 percent effluent in background) to represent  $V$  = initial maximum effluent concentration
- PRO-11 (1626-1635 on 9-21-22) measurements at the south MZB within 5 minutes of tidal reversal from flood to ebb tide flow (DF = 2168 = 0.04 percent effluent in background) to represent  $\tilde{V}$  = quasi-steady-state maximum effluent concentration
- PRO-14 (1733-1742 on 9-21-22) measurements at the south MZB within 50 minutes of tidal reversal from flood to ebb tide flow (DF = 3092 = 0.03 percent effluent in background) to represent  $\tilde{V}$  = quasi-steady-state maximum effluent concentration
- PRO-23 (1403-1407 on 9-22-22) measurements at the north MZB within 15 minutes of tidal reversal from ebb to flood tide flow (DF = 4678 = 0.02 percent effluent in background) to represent  $\tilde{V}$  = quasi-steady-state maximum effluent concentration

### 2.3.1 Reflux Calculations for New SCTP Diffuser

Reflux calculations of discharge plumes from the new SCTP outfall diffuser have been developed applying the methods defined in Appendix 6 – Guidance for Conducting Mixing Zone Analyses, Section 1.6.3 – Quantify Far-field Accumulation (Reflux), in the Permit Writer’s Manual (Ecology, 2018) - Method 1, Alternative 1, as described in the guidance. Alternative 1 is applied when “tracer concentrations are measured in the near-field at the mixing zone boundary in the approximate centerline of the effluent plume.” This method uses the following mass-balance equations:

$$r_d = \frac{(\tilde{V} - V)}{\tilde{V}} \quad \text{where:}$$

$r_d$  = return rate of dye or effluent mass discharged in previous tidal cycle as defined in U.S. Environmental Protection Agency (EPA) (1992),

$V$  = initial maximum effluent concentration (volume fraction of effluent: e.g., 5 percent effluent concentration corresponds to  $V$  of 0.05) during first tidal cycle prior to influence of far-field accumulation from previous tidal cycles,

$\tilde{V}$  = quasi-steady-state maximum effluent concentration (volume fraction of effluent; e.g., 5 percent effluent concentration corresponds to  $\tilde{V}$  of 0.05) after several tidal cycles result in equilibrium with far-field accumulation.

Based on the 2022 field tracer measurements, the initial maximum effluent concentration ( $V$ ) is based on the minimum average dilution measured in PRO-07 at the north MZB within 20 minutes of tidal reversal (DF of 994) equals 0.1 percent effluent concentration. The quasi-steady-state maximum effluent concentration ( $\tilde{V}$ ) is represented by two later profiles measured on September 21, as follows:

- PRO-11 at the south MZB within 5 minutes of tidal reversal from flood to ebb tide flow (minimum average DF = 2168 = 0.04 percent effluent in background);
- PRO-14 at the south MZB within 50 minutes of tidal reversal from flood to ebb tide flow (minimum average DF = 3092 = 0.03 percent effluent in background); and
- PRO-24 at the north MZB within 15 minutes of tidal reversal from ebb to flood tide flow (DF = 4678 = 0.02 percent effluent in background).

The tidal-induced plume reflux is calculated as follows for these field measurements:

$$r_d = \frac{(\tilde{V} - V)}{\tilde{V}} \quad \text{is} \quad r_d = \frac{(0.0004 - 0.001)}{0.0004} = -1.5 \quad (\text{no reflux - based on PRO-07 \& PRO-11})$$

$$r_d = \frac{(\tilde{V} - V)}{\tilde{V}} \quad \text{is} \quad r_d = \frac{(0.0003 - 0.001)}{0.0003} = -2.3 \quad (\text{no reflux - based on PRO-07 \& PRO-14})$$

$$r_d = \frac{(\tilde{V} - V)}{\tilde{V}} \quad \text{is} \quad r_d = \frac{(0.0002 - 0.001)}{0.0002} = -4 \quad (\text{no reflux - based on PRO-07 \& PRO-24})$$

Then to calculate the quasi-steady-state DF accounting for reflux applies the following:

$$\overline{DF} = DF (1 - r_d) \quad \text{where:}$$

$\overline{DF}$  = quasi-steady-state effluent DF (reciprocal of volume fraction of effluent; e.g., 5 percent effluent corresponds to DF of 20) after several tidal cycles result in an equilibrium with far-field accumulation.

DF = initial effluent DF during the first tidal cycle prior to the influence of far-field accumulation from previous tidal cycles.

Based on the 2022 field tracer measurements, the minimum average field-measured DF at the MZB based on all field measurements is a minimum average DF of 123 (PRO-08). The highest return rate of effluent mass discharged in previous tidal cycle ( $r_d$ ) has been calculated above to be -1.5 (no reflux measured). Then:

$$\overline{DF} = DF (1 - r_d) \quad \text{is:} \quad \overline{DF} = 123 (1 - (-1.5)) = >123$$

The conclusion of no reflux at the chronic MZB is consistent with the field measurements recorded and field study observations that show no background tracer in waters approaching the diffuser within 10 minutes of tidal currents reversal.

## 2.4 Receiving Water Characterization

This section describes how the characterization data for the Columbia River at the SCTP Outfall 001 were acquired and processed for use in the outfall mixing performance study. River discharge and current velocity data necessary to characterize the Columbia River were acquired from two primary sources.

The first source of information was river discharge and gage information measured and disseminated by the U.S. Geological Survey (USGS) at established upstream locations. This information was compiled and analyzed to assist in defining current velocities, water depths, and ambient temperatures for developing the various scenarios for modeling. The Columbia River seasonal flows, river stages, and current velocities used in this Outfall Mixing Performance Study were developed for and previously used in the *Engineering Report for the Phase 5A Project, Columbia River Outfall and Effluent Pipeline* (CH2M, 2018). The second source consisted of site-specific ambient current velocity and depth measurements collected by Jacobs in September 2022 for this study using instruments deployed immediately upstream of the outfall diffuser.

The following sections review river discharge data, ambient currents data, critical season flow conditions, river hydraulics modeling, and river temperature data.

### 2.4.1 Columbia River Discharge

River flow (discharge) in the lower Columbia River varies according to the management of the numerous reservoirs within the river system, seasonal variations, and flood events. Analyses of wastewater dilution for discharges located in rivers are typically performed using hydrologically-based low river flows. Low flow receiving water conditions typically produce worst-case (critical) model predicted dilutions (i.e.,



highest concentrations) that result because of decreased ambient current velocities and water depths. The river flows peak each year during the spring snowmelt and runoff period (March through June), are elevated during the wet season (November through March), and are lowest in the late summer and early fall (August to October).

Discharge data were obtained from the USGS National Water Information System Web database for the Columbia River at The Dalles, Oregon (gage 14105700), which is located at RM 188.9, approximately 93 miles upstream of SCTP Outfall 001. USACE provides provisional-only data from Bonneville Dam. Columbia River flows from Bonneville Dam were consistent with flows reported by The Dalles, Oregon, gage station. However, flow data from Bonneville Dam are identified as uncitable unless reviewed and approved by the agency responsible for collection. Therefore, Columbia River flows reported from Bonneville Dam during the record period were only evaluated for comparative purposes, and thus the flows from The Dalles gage (plus downstream tributary rivers) were used as the measure of river flow for the outfall site.

The Columbia River flows recorded by the USGS at Vancouver, Washington (gage 14144700), are shown in Figure 2-8. During the 4-month dry season period in summer and fall of 2022, the tidally-filtered river discharge ranged from a low flow of 78,700 cfs on October 13, to a flow of 306,000 cfs on July 1. Figure 2-8 also displays Columbia River discharge at Vancouver during the 2022 field data collection period showing the 7-day, 10-year low flow, or 7Q10 low flow value of 78,506 cfs for comparison. This plot demonstrates that the SCTP outfall performance study conducted on September 21–22, 2022, coincided very closely with the 7Q10 low flow. Because one of the main objectives that was stated in the Study Plan was collection of site-specific field measurements of the dilution performance of the new Columbia River Outfall under low river flow conditions, that study objective was achieved.

#### 2.4.2 River Design Flow Conditions

The lower Columbia River has three seasonal discharge periods: low flow (July through October), winter/wet season (November through March), and high flow (April through June). For conducting modeling and hydraulic analyses, it is important to determine the statistical frequency of occurrence of both low and high river flow conditions.

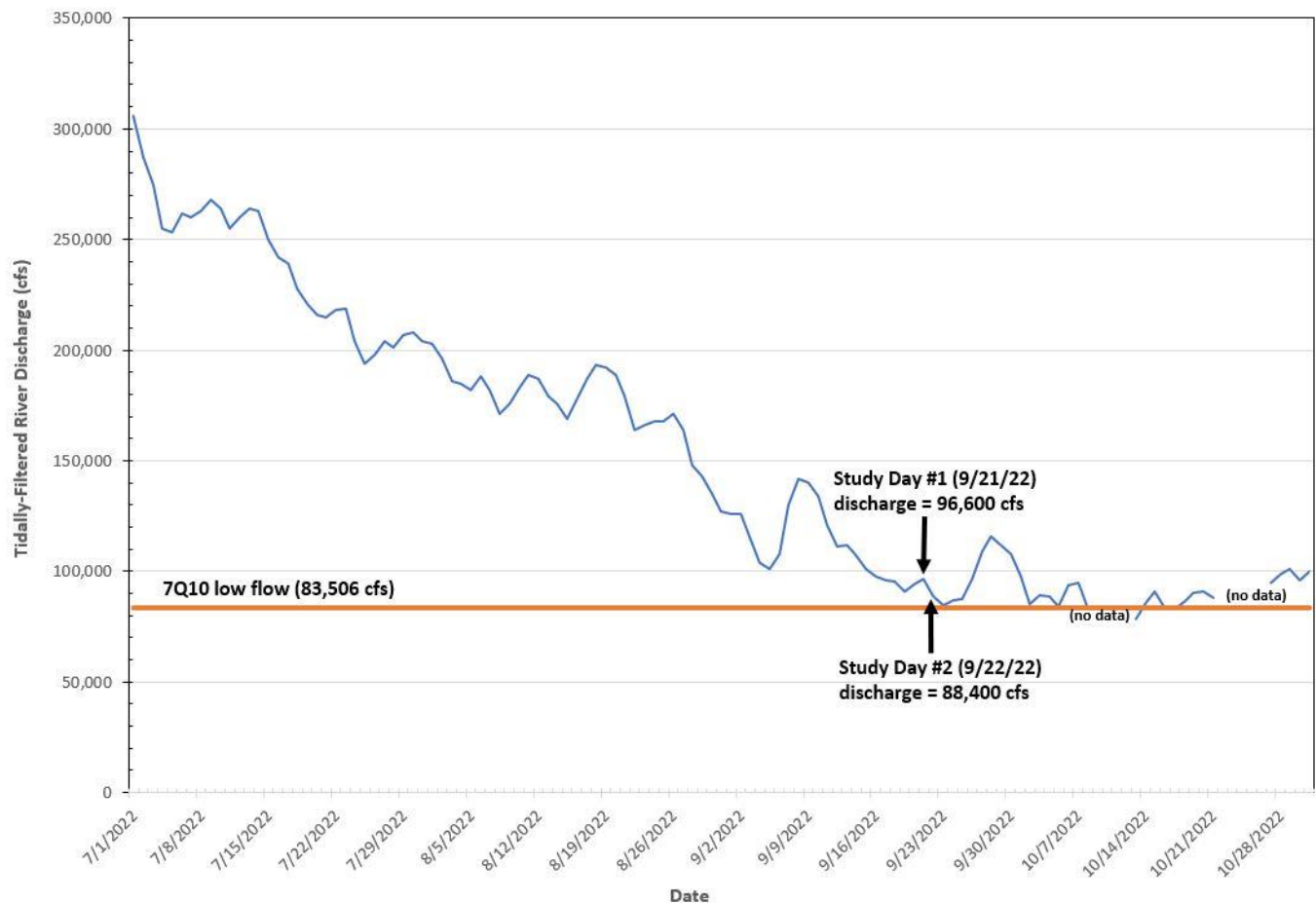
These extreme low flow conditions also represent the lowest and highest ambient current velocities, and they establish the minimum dilutions for point source discharges.

The 7Q10 and the 30Q5 flows were calculated for the low-flow period based on guidance provided in Appendix C of the Permit Writer's Manual (Ecology, 2018). The 7Q10 flow is defined as the discharge at the 10-year recurrence interval taken from a frequency curve of annual or seasonal values of the lowest (or highest) mean discharge for 7 consecutive days (that is, the 7-day, 10-year low flow). The 7Q10 low flow corresponds to the lowest river elevation (for example, the shallowest discharge depth) and slowest ambient current speeds. For this reach of the Columbia River, this low flow condition occurs during the late summer or early fall months (August to early October), and is considered the critical receiving water condition. Similarly, the 30Q5 flow represents the lowest mean discharge for 30 consecutive days, with a recurrence interval of 5 years. In addition, the harmonic mean discharge is calculated to represent long-term average river flows. The harmonic mean is a specific type of average flow that is calculated using reciprocal values, and it is used to average discharge flows over longer time periods. The 7Q10 river flow in a tidal-influenced river are applied in dilution modeling to represent the acute and chronic conditions for aquatic life criteria evaluations. The 30Q5 and harmonic mean discharge flows are applied in dilution modeling to represent conditions for human health criteria evaluations.

The program DFLOW<sup>1</sup> was used to develop the design river flows used in this study. DFLOW incorporates the USGS application of the log Pearson Type III frequency curve approach and EPA's biologically-based stream design flow technique. To calculate user-specified hydrologically-based design flows, DFLOW

<sup>1</sup> <https://www.epa.gov/ceam/dflow>

requires input of daily stream flow records, such as those available from USGS stream gages. These discharge records are readily available from the USGS website<sup>2</sup>.



**Figure 2-8. Columbia River Tidally-Filtered Discharge at Vancouver, Washington, for the 2022 Dry Season Period (July through October)**

The 7Q10 and 30Q5 low flows were calculated from long-term Columbia River water resource records for Beaver Army Terminal near Quincy, Oregon (Gage 14246900), provided by the USGS Portland District Office. These were then adjusted (that is, subtracted from) using discharges from the upstream tributaries Lewis River at Ariel, Washington (Gage 14220500), and Cowlitz River at Castle Rock, Washington (Gage 14243000). The calculated 7Q10 and 30Q5 low flows are 83,506 and 99,893 cfs, respectively. The 7Q10 design river flow value is consistent with a previous 7Q10 low-flow calculation of 85,346 cfs that was also based on statistics from the same USGS gaging stations (CH2M, 2004b, 2005, 2006). The harmonic mean flow of 191,106 cfs was calculated using the same data sets.

### 2.4.3 River Hydraulic Analysis

River flow and stage elevation statistics and calculated river channel parameters for the various discharge scenarios used in dilution modeling were previously developed using the Bentley FlowMaster® program. FlowMaster® is a hydraulic analysis program accepted by the Federal Emergency Management Agency for the design and analysis of open and irregularly-shaped channels, as well as for many other hydrologic applications.

<sup>2</sup> <http://waterdata.usgs.gov/or/nwis/>

Water surface elevations (WSE), cross-sectional flow area, channel average velocity, channel top width, and channel average water depth were calculated for a range of discharge conditions using Manning's equation within FlowMaster®. Hydraulic model input data include cross-section geometry, longitudinal slope (based on NOAA survey data and from recent site-specific bathymetric surveys of the outfall site), and Manning's roughness coefficient. Because bottom roughness is an important variable in the calculations, these values were estimated to represent both critical low river discharge conditions and high river (wet season) discharge conditions. Average depth was calculated by comparing the WSE predicted by the model to the average submerged elevation of the channel bottom. Aerial photographs and field observations from site visits were used to estimate the slope of the bank above the waterline on the opposite (west) riverbank. After the FlowMaster® program calibration was complete, the average velocity in each model scenario was determined by changing discharge rate in the setup file and assessing average channel depth and velocity by comparing WSE to average bottom elevation.

Table 2-4 summarizes the FlowMaster® hydrologic results for the Columbia River at RM 96, and includes calculated channel average current velocities based on the river flow and cross-sectional area for the various river stages.

**Table 2-4. FlowMaster Results for the Columbia River at SCTP Outfall 001 for Dry and Wet Season, Annual Average, and Field-Measured Discharge Conditions <sup>a</sup>**

Columbia River Discharge Condition	River Discharge (cfs) <sup>b</sup>	WSE, feet (NGVD 29 datum)	Cross-Sectional Area (square feet)	Channel Average Velocity (fps)	Channel (Top) Width (feet)	Channel Average Depth (feet)	Diffuser Port Depth, Average (feet)
<b>Site Conditions During Summer 2015 Field Measurements <sup>c</sup></b>							
August 26, 2015 <sup>d</sup>	152,775	+5.9	96,790	1.14	2,501	55.3	45.4
<b>Critical Low River Flow (Dry Season) Conditions</b>							
7Q10 low flow	83,506	+3.1	94,712	0.88	2,474	54.4	42.6
<b>Critical Low River Flow (Wet Season) Conditions</b>							
7Q10 low flow	104,150	+3.5	94,864	0.96	2,480	54.5	43.6
<b>Annual Average Conditions (Based on Entire Record Period)</b>							
30Q5 flow	99,893	+3.9	95,028	1.05	2,487	54.6	43.4
Harmonic mean	191,106	+7.0	97,778	1.95	2,508	55.7	46.5

<sup>a</sup> An estimated river channel slope of 0.000035 (0.18 foot/mile) and a Manning's roughness coefficient of 0.030 (natural stream-clean) were used as inputs for the FlowMaster program for low river flows (< 100,000 cfs); an estimated slope of 0.000022 (0.12 foot/mile) and roughness coefficient of 0.041 were used for river flows > 150,000 cfs.

<sup>b</sup> Critical design river flows were developed using DFLOW (EPA, <https://www.epa.gov/ceam/dflow>).

<sup>c</sup> Field studies conducted in the summer of 2015 in support of the *Phase 5A Project Engineering Report for the Columbia River Outfall and Effluent Pipeline* (CH2M, 2018).

<sup>d</sup> Mean Columbia River discharge at RM 96 during an instrument deployment at the SCTP Outfall 001 site in August 2015, and is based on combined recorded flows for the Columbia River at The Dalles, plus the Hood, Klickitat, White Salmon, Sandy, and Willamette Rivers.

#### **2.4.4 River Current Measurements**

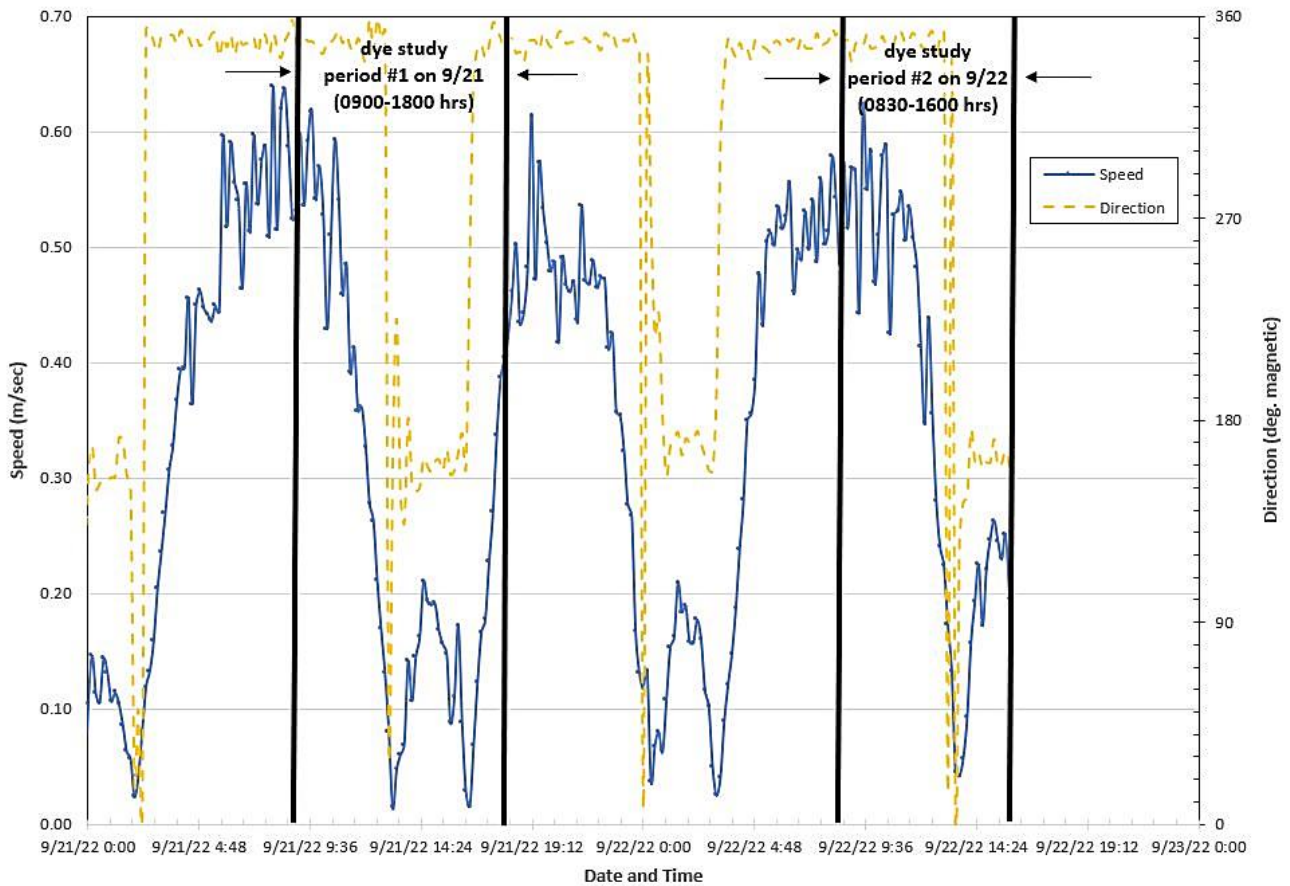
One of the key input parameters for mixing zone modeling is the current velocity (speed and direction) of the receiving water. In rivers, current speed is largely a function of discharge and the channel (cross-sectional) area, which is locally affected by bottom topography and in-water structures (such as pile dikes, dolphins, etc.). Because the SCTP Outfall 001 site in the lower Columbia River is subject to tidal-induced flow reversals, the field study captured appropriate ebb and flood tides during low river discharge conditions.

Current speed and direction in the Columbia River near the SCTP outfall diffuser were measured from September 20 to 22, 2022. Two Nortek Aquadopp acoustic doppler current profiler meters were installed on a bottom-mounted instrument array that was deployed approximately 150 feet south of the midpoint of the outfall diffuser (refer to Figure 2-1). The current meters were positioned at this site-specific location to represent both mid-depth and near-bottom currents that interact with the discharge from the outfall diffuser.

The current meters were mounted on taut-line cable arrays with subsurface floatation (buoys) anchored to the riverbed. The subsurface buoys were located approximately 15 feet below the river surface at low flow. The instrument arrays were constructed with 0.25-inch steel aircraft cable, subsurface buoys, and iron clump weights as an anchor. Given the depth of water at this site, an acoustic release was included as part of the array to facilitate the retrieval of the instruments. The instrument array was deployed at 1430 hours PDT on September 20, 2022, and retrieved at 1600 hours PDT on September 22, 2022. Global positioning system coordinates were recorded for the array location immediately following the instrument deployment.

Over the 48-hour deployment period, the instruments located upstream of the Outfall 001 diffuser measured current speeds ranging from 0.01 to 0.64 m/sec (0.33 to 2.1 feet per second [fps]), with mean current speeds of 0.34 m/sec (1.1 fps) for both the mid-depth and near-bottom meters. The tidally-filtered mean discharge for the Columbia River (based on data recorded by USGS gage 14144700 at Vancouver, Washington) during the 48-hour instrument deployment period was 93,100 cfs.

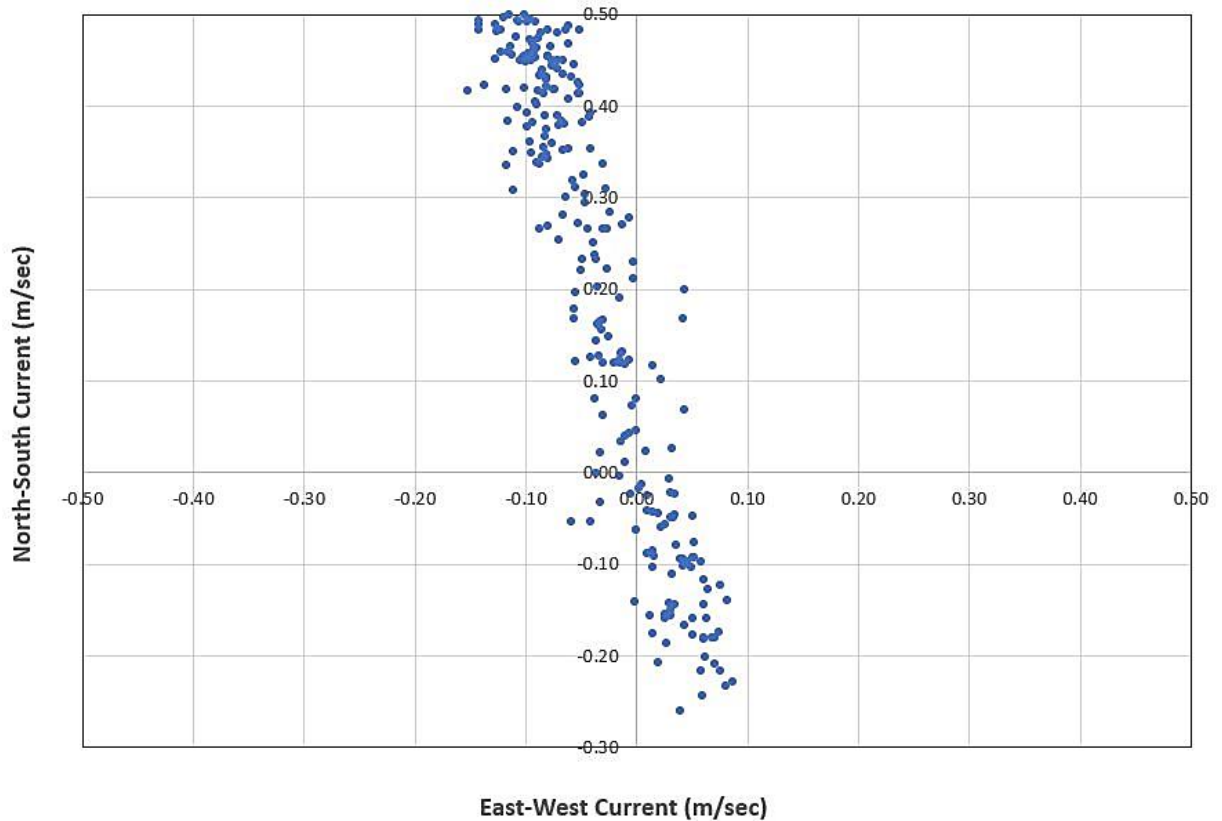
Tables C-1 and C-2 in Appendix C provide tabular summaries of the individual near-surface and near-bottom current measurements, respectively. Figure 2-9 presents the near-bottom current meter data as a time-series plot of current velocity (i.e., speed and direction).



**Figure 2-9. Time-Series Plot of Near-Bottom Currents in the Columbia River at RM 96 near the SCTP Outfall 001, September 20–22, 2022**

Each of the two dye study periods conducted on September 21 and 22 are also denoted in Figure 2-9. This figure illustrates the semi-diurnal tidal patterns that affect the ambient current speed and direction during the low river flow period. The highest measured current velocities (i.e., those greater than ~0.40 m/sec) coincide with ebb (northward-flowing) tides that have a direction of about 340° to 350° magnetic. Conversely, the lowest current velocities measured (less than ~0.25 m/sec) coincide with flood tides (southward-flowing) having a direction of about 150° to 180°. The data from the near-bottom meter are presented as these currents better represent the ambient currents in the near-field and at the diffuser discharge depth. Further, since the current data from the near-surface instrument are very similar to those measured near-bottom (both magnitude and direction), those data are not presented graphically.

Figure 2-10 presents a principal component plot of current records for the near-bottom meter. Each data point shown represents both a current speed and a direction measurement recorded every 10 minutes throughout the 48-hour deployment period. This plot shows the distribution of the current magnitude and direction relative to the principal axes (i.e., north-south and east-west) of the currents. Because the river channel has a predominantly north-south orientation at this location, the top of the figure represents north (i.e., the downstream direction) and the bottom of the figure represents south (i.e., upstream direction). As shown by this figure, most of the current measurements recorded are in the downstream direction (to the north), with a large cluster of the measurements greater than 0.25 m/sec.



**Figure 2-10. Principal Component Plot of Near-Bottom Currents in the Columbia River at RM 96 Near the SCTP Outfall 001, September 20–22, 2022**

Figure 2-11 provides a scatter plot that shows current speed plotted as a function of current direction. This figure displays the relative occurrence of tidal-driven currents along the river channel axis compared to those in the cross-channel direction. The currents are primarily along the axis of the channel, with most of the records measured in a downstream direction with magnitudes between 20 and 40 cm/sec; peak cross-channel currents are less than 10 cm/sec. The cross-channel speeds and directions represent times when the current is transitioning (rotating) between ebb and flood tide conditions. Peak currents during flood tide (to the south or upstream direction) are less than 30 cm/sec, with most measurements under 20 cm/sec, which are oriented slightly east of due south.

Figure 2-11 uses the near-bottom current records to also show the relative strength of ebb and flood tidal currents, as well as the measurements recorded during the transition periods. Unlike the principal components plot in Figure 2-10, Figure 2-11 shows the small number of tidal direction transition measurements relative to those measured during ebb and flood tide periods. Analysis of the entire data records of both instruments indicates that flood tides occurred only approximately 24 percent of the time during this late summer/early fall period; this portion of time can vary depending on river discharge (since the tidal signal is dampened during high river flow conditions, this percentage will decrease).

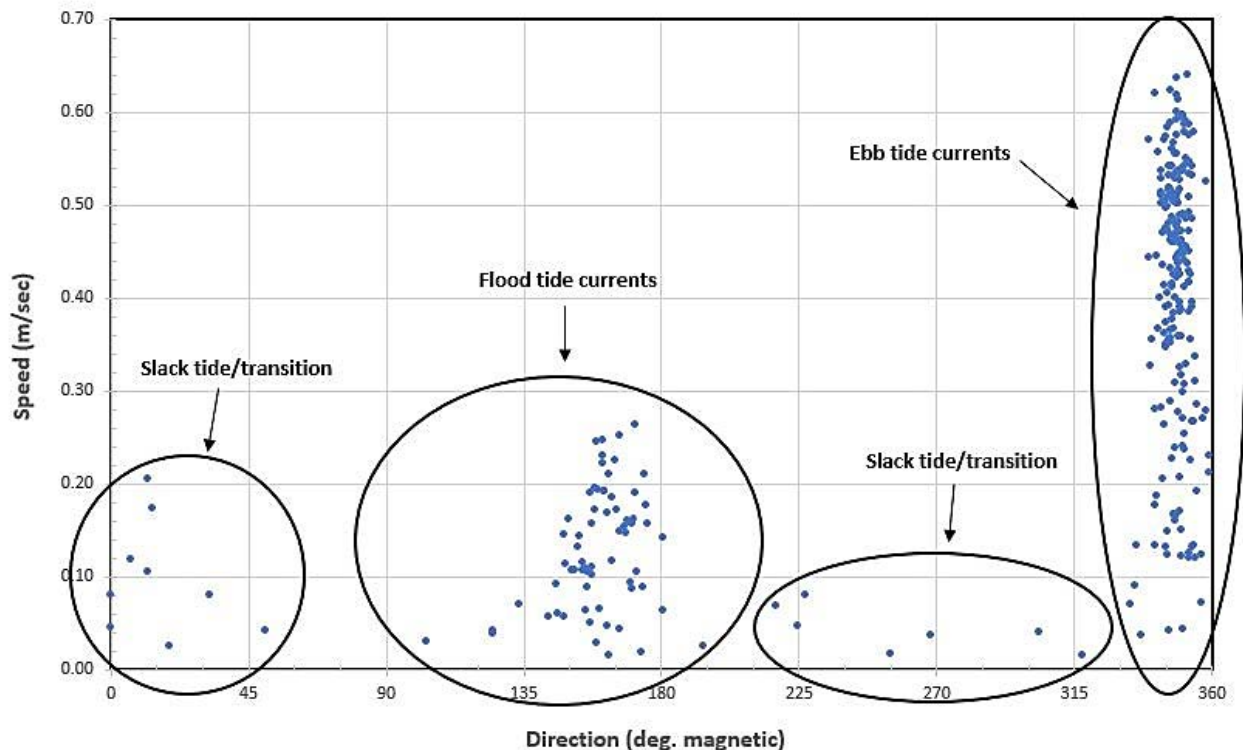


Figure 2-11. Scatter Plot of Near-Bottom Currents in the Columbia River at RM 96 Near the SCTP Outfall 001, September 20–22, 2022

#### 2.4.5 Critical Receiving Water Conditions

Critical conditions are those environmental conditions that result in minimal mixing and the lowest dilution, specifically the environmental conditions that represent acute and chronic aquatic life criteria, in addition to chronic human health criteria.

For the outfall modeling analysis, it is important to determine the statistical frequency of occurrence of low (dry season) river flow conditions; these extreme conditions are used to establish the minimum dilutions for a discharge.

For this evaluation, the following river flows were used to represent critical receiving water conditions:

- **7Q10 flow**, the lowest 7-day flow with an average recurrence frequency of 10 years, was used to calculate dilutions to evaluate the acute and chronic criteria. The 7Q10 low flow generally corresponds to the lowest river elevation and slowest ambient current speeds. For this reach of the Columbia River, low flow conditions typically occur during the late summer months (August–October) and are considered the critical receiving water condition.
- **30Q5 flow**, the lowest average 30 consecutive-day low flow with an average recurrence frequency of 5 years, was used to calculate dilutions to evaluate the non-carcinogenic human health criteria.
- **Harmonic mean flow**, the reciprocal of the arithmetic mean of the reciprocal of the values, is a long-term average flow value used to calculate dilutions to evaluate the carcinogenic human health criteria.

To summarize, the Columbia River hydrologically-based design flows calculated for use in the dilution modeling are as follows:

- 7Q10 low-flow, *dry season* (July–October): 83,506 cfs

- 7Q10 low-flow, *wet season* (November–June): 104,150 cfs
- 30Q5 flow, *dry season* (July–October): 99,893 cfs
- Harmonic mean river flow (annual basis): 191,106 cfs

#### 2.4.6 Ambient River Temperature

Based on guidance provided in the Guidance for Conducting Mixing Zone Analyses in Appendix C of the Permit Writer's Manual (Ecology, 2018), when selecting a reasonable worst-case value for temperature, the 90th-percentile value derived from a cumulative frequency distribution analysis of a complete data set should be used. For human health-based analyses, the recommended statistical approach when determining the temperature is use of the 50th-percentile value.

Seasonal daily mean river temperatures are based on USGS monitoring data for the Columbia River at Vancouver, Washington (gage 14144700 at RM 106.5), for the period from 1967 through 1979. Based on Ecology guidance and the available ambient temperature data, the following Columbia River temperatures were calculated and used as inputs to the dilution modeling:

- Dry season (June–October), 90th-percentile: 21.1°C
- Wet season (November–June), 90th-percentile: 10.7°C
- Annual average, 50th-percentile: 12.4°C

### 2.5 Effluent Characterization

The characteristics of the effluent—flow rate, temperature, and chemistry—relative to the characteristics of the receiving water are important factors in determining the plume trajectory, near-field mixing, and dispersion. This section summarizes the effluent flow and temperature data that are necessary to perform the dilution modeling for the various discharge conditions developed. The effluent flows and temperatures used to determine model inputs were developed in accordance with guidance provided in Appendix C of the Permit Writer's Manual (Ecology, 2018).

#### 2.5.1 Effluent Flow

Effluent monitoring data from January 2019 through October 2022 provided by the District were analyzed to determine the critical dry season (July–October) and wet season (November–June) effluent flows for existing conditions.

The projected future Phase 5, Phase 6, Phase 7, and buildout effluent flows were provided by the District and are based on expansion phase plant capacity projections and peaking factors developed specifically for the SCTP. Projected Phase 5 effluent flows were also developed for the *Engineering Report for Phase 5B Package 2 – Secondary Treatment Process Improvements Project* (Jacobs, 2021b).

The highest daily maximum effluent flow in each season is used to evaluate compliance with acute aquatic life water quality criteria. The highest monthly average effluent flow in each season is used to evaluate compliance with chronic aquatic life and human health (non-carcinogen) water quality criteria. The annual average effluent flow is used to evaluate human health (carcinogen) water quality criteria.

Table 2-5 includes a summary of existing effluent flows, based on the most recent 3+ year record period (2019–2022), and projected Phase 5, Phase 6, Phase 7, and buildout effluent flows to apply in modeling the effluent flow scenarios defined in Appendix C of the Permit Writer's Manual (Ecology, 2018).



**Table 2-5. SCTP Existing (2019–2022) and Projected Future Effluent Flows (mgd) Used in the Dilution Modeling**

Effluent Flow Scenario	Existing Flows (2019–2022)	Projected Phase 5 Flows	Projected Phase 6 Flows	Projected Phase 7 Flows	Projected Buildout Flows
Dry season maximum day	13.50	17.33	19.41	23.56	37.31
Dry season maximum monthly	9.58	13.15	14.73	17.88	29.21
Annual average	7.88	13.71	15.36	18.65	28.92
Wet season maximum day	14.33	23.4	26.24	31.86	50.90
Wet season maximum monthly	9.98	17.50	19.60	23.80	38.18

Notes: *dry season* is defined as the period from July through October; *wet season* is defined as the period from November through June.

### 2.5.2 Effluent Temperature

The Permit Writer’s Manual (Ecology, 2018) provides guidance on temperatures to be used for characterizing wastewater for use in dilution modeling. Effluent Discharge Monitoring Report data for a complete 3-year record period were used to develop statistical summaries of seasonal effluent temperatures for evaluating both aquatic life-based and human health-based water quality criteria for acute and chronic toxicity.

The guidance specifies that the 99th-percentile of daily maximum effluent temperature is used for modeling acute water quality criteria conditions; the 95th-percentile effluent temperature during the critical period is used for modeling chronic water quality criteria conditions; and the 50th-percentile effluent temperature is used for modeling human health water quality criteria conditions.

The effluent temperatures that were developed for use in each of the critical discharge scenarios are summarized in Table 2-6.

**Table 2-6. SCTP Effluent Temperatures Used in the Dilution Modeling**

Effluent Temperature Scenario	Dry Season	Wet Season	Annual Average
Acute-aquatic life	23.2°C	20.2°C	--
Chronic-aquatic life	23.0°C	19.3°C	--
Human health (carcinogen)	--	--	19.1°C
Human health (non-carcinogen)	--	--	19.1°C

Notes: *dry season* is defined as the period from July through October; *wet season* is defined as the period from November through June.



### **3. Dilution Modeling – Methods and Results**

This section presents the objectives, approach, and results of dilution modeling conducted for the SCTP Outfall 001 Mixing Performance Study. Field measurements collected in September 2022 have been used to assist in the selection of the dilution model used in this evaluation. Dilution modeling was used to predict dilution performance of the outfall diffuser under critical (worst-case) receiving water conditions and for a range of receiving water conditions expected to occur at the discharge site. Outfall dilution modeling was conducted for specific effluent flows and temperatures and critical receiving water conditions of river discharge, current velocity, discharge depth, and temperature in accordance with guidance provided in Chapter 6, Chapter 7, and Appendix C of the Permit Writer's Manual (Ecology, 2018).

The specific inputs of effluent flow and temperature and receiving water conditions for modeling are defined in the following sections. As previously stated, the modeling conditions that produce the lowest predicted dilutions identify the site-specific critical conditions for this discharge.

#### **3.1 Modeling Objectives and Approach**

The objective of the dilution modeling was to evaluate the dilution performance of Outfall 001 using existing and projected future effluent flows and temperatures under critical (dry season) river flow conditions (7Q10-low), critical (wet season) river flow conditions (7Q10), and average river flow conditions (30Q5 and harmonic mean). The 7Q10 is the recommended design flow used to calculate dilutions for acute and chronic aquatic life criteria. The 30Q5 flow is the discharge flow used to calculate dilutions for human health non-carcinogen criteria; and the harmonic mean flow is used to calculate dilutions for human health carcinogen criteria.

The first step in the development of dilution modeling involves review of available and applicable dilution models and then the selection of the model that best represents the outfall diffuser over the range of ambient conditions. The next step is to develop model inputs to represent critical ambient conditions and the range of existing and projected effluent flows and temperatures. These inputs have been specifically developed to align with the guidance for outfall dilution modeling provided in Appendix C of the Permit Writer's Manual (Ecology, 2018) and in the EPA Technical Support Document (EPA, 1991).

The modeling approach for this evaluation used appropriate and reasonable assumptions of receiving water characteristics (e.g., river discharge and stage elevation, water depth, current speed, and ambient temperature) and effluent flows and temperatures for the dilution modeling.

##### **3.1.1 Available Mixing Zone Models**

There are various available models for simulating the mixing processes of point source discharges. Because each of the models perform differently under certain discharge and ambient conditions, that model which best represents the specific conditions under consideration must be selected. Specifically, two EPA-supported modeling systems are most commonly used to conduct outfall dilution evaluations. Both of these modeling systems were evaluated for use in modeling the dilution performance of the new SCTP Outfall 001 diffuser.

The two dilution modeling platforms considered in this evaluation include: (1) Visual Plumes (VP) (Frick et al., 2003), a model interface and file manager that consists of various different plume models, including UM3 and DKHW; and (2) CORMIX, an empirically-based mixing zone modeling system that classifies the interaction of point source discharges and the receiving water (Doneker and Jirka, 2020). Details on these modeling systems are provided in the following sections.

###### **3.1.1.1 Visual Plumes**

VP is an update of the PLUMES modeling system developed by the Environmental Research Division of EPA (Frick et al., 2003). VP is a Windows-based computer application that superseded the DOS-based

PLUMES mixing zone modeling system (Baumgartner et al., 1994). VP simulates both single and merging submerged plumes in arbitrarily stratified ambient flow; VP is also capable of simulating buoyant surface discharges. The VP modeling system supports five different models for near-field simulation: UM3, DKHW, PDSWIN, NRFIELD, and DOS-PLUMES.

VP includes the three-dimensional UM3 model based on earlier models UMERGE and UM, the DKHW model based on UDKHDEN (Muellenhoff et al., 1985), the surface discharge model PDSWIN based on PDS (Shirazi and Davis, 1974), and the NRFIELD model based on RSB (Roberts, Snyder, and Baumgartner, 1989a,b,c). The Brooks' far-field equations (Brooks, 1960) are also included in the VP modeling system for simulating far-field plume behavior and dispersion. Because the SCTP Outfall 001 is a deeply submerged multi-port diffuser under all discharge conditions, only the UM3 and DKHW models were considered in this evaluation. Each of these models are briefly described below.

### **UM3**

UM3 is a three-dimensional Lagrangian integral model for use in simulating near-field behavior of steady-state single and multi-port submerged discharges (Frick et al., 2003). The model quantifies the rate at which mass is incorporated into the plume in the presence of an ambient current and calculates the flux-average dilution, plume trajectory, size, and pollutant concentrations in the near-field region. UM3 performs sequential calculations of both dilution and plume distance from the outfall until initial dilution is completed. The output is used to evaluate the dilution, plume size, and pollutant concentrations in the near-field. Far-field behavior is modeled subsequently with a far-field model (Brooks' equations) to calculate dilution and plume dimensions at the mixing zone boundaries.

### **DKHW**

DKHW is a three-dimensional hydrodynamic numerical model that considers variable ambient receiving water current and density profiles with depth. It is a jet integral model that uses a fourth-order Eulerian integration routine along the centerline of the effluent plume to predict average dilution, plume trajectory, size, and pollutant concentrations in the near-field region. The model can simulate single-port outfalls or a single row of multiple diffuser ports in either stagnant or flowing ambient environments. DKHW is sensitive to small variations in water column density and ambient velocities and is limited to positively buoyant plumes. The output of each model run provides sequential calculation of both dilution and plume distance from the port until initial dilution is complete. DKHW provides dilution predictions only up to the completion of initial dilution (near-field region) and far-field dilution is modeled in VP with a subsequent far-field model (Brooks' equations) to calculate dilutions and plume dimensions at the mixing zone boundaries.

#### **3.1.1.2 CORMIX**

CORMIX is a software system designed for the analysis and prediction of point-source discharge plumes into various types of water bodies, and which assumes steady-state conditions (Doneker and Jirka, 2020). It is an empirical model based on experimentally derived curve-fit equations that are used to predict dilution and verify the accuracy of theoretical models. The CORMIX modeling system emphasizes prediction of the near-field geometry and dilution, although it can also predict behavior of the discharge plume beyond initial mixing (i.e., in the far-field region).

The CORMIX system consists of three primary sub-systems or models: CORMIX 1, CORMIX 2, and CORMIX 3. CORMIX 1 simulates plume geometry and dilution for *submerged single-port outfall* configurations and assumes a simple rectangular receiving water cross-section. The CORMIX 2 model predicts plume geometry and dilution for *submerged multiport outfall* configurations (i.e., diffusers). The CORMIX 3 model simulates the mixing behavior of buoyant *surface discharges* that results when effluent enters the receiving stream laterally, whether through a canal, an open channel, or a near-surface discharge pipe. Because the SCTP Outfall 001 is a multi-port discharge and is deeply submerged under all conditions, only the CORMIX 2 model was considered in this evaluation.

CORMIX 2 predicts near-field and far-field plume trajectory, geometry, pollutant concentration, and dilution for submerged multiport outfall diffusers. It can simulate a variety of discharge conditions, including boundary interactions, such as plume bottom attachment and shoreline contact. CORMIX also incorporates a three-dimensional jet-integral model (CORJET) for detailed predictions in the near-field. This jet-integral model is similar to the DKHW model (VP) and provides similar near-field results. However, this program module is initiated only when CORMIX determines that the discharge conditions are hydrodynamically “stable.” Stable discharge conditions are typically associated with weak discharge momentum and localized recirculation patterns (i.e., the re-entrainment of previously mixed water back into the plume).

Further, CORMIX 2 will often simplify near-field mixing processes by representing the multiport diffuser as an equivalent slot (i.e., a line source of momentum and buoyancy). As stated above, this occurs when a hydrodynamically unstable discharge is predicted by the model. Under these conditions, near-field mixing is based on the plume characteristics after the plumes from individual (adjacent) discharge ports have merged.

### 3.1.2 Model Validation

Validation of mixing zone models increases confidence in the model performance and in its predictive capability. Model validation involves the comparison of model-predicted dilutions to field-measured dilutions from a dye tracer/mixing zone study, typically conducted under critical receiving water conditions.

The general approach in validating mixing zone modeling analyses includes the following:

- Defining model input parameters representative of receiving water conditions, effluent conditions, and discharge characteristics;
- Reviewing applicability of the selected model(s) based on the receiving water, effluent, and discharge conditions;
- Making simplifying assumptions and/or modifications to model input parameters, as necessary;
- Conducting the model simulations for each case from a matrix of modeling scenarios; and
- Comparing predicted DFs and plume geometry at the mixing zone boundaries to the acute and chronic water quality criteria for aquatic life and human health.

The selection process used to evaluate the mixing zone models is presented in the next section.

## 3.2 Model Validation and Selection

Plume-boundary interactions are important processes to be considered in the selection of a dilution model. Plume interactions with the water surface, riverbed, or the riverbank in the near-field can potentially cause re-entrainment of effluent and subsequently a build-up of pollutant concentrations, thereby reducing the mixing and amount of dilution that occurs. The relative complexity of the discharge geometry (i.e., diffuser configuration) is also an important consideration in the model selection process.

### 3.2.1 Diffuser Configuration and Model Cases

A number of factors related to the diffuser configuration and the discharge location can increase the complexity of modeling multi-port diffusers. These are as follows:

- Diffuser configuration—ports that are closely spaced and/or have variable discharge angle orientations—can be difficult to accurately represent with the available models: the SCTP diffuser port are spaced 16 feet and have uniform angles;

- Proximity of the diffuser port(s) to the riverbed can increase the likelihood for bottom contact and plume bottom attachment to occur (as previously mentioned, a potential source of discharge instability): the SCTP diffuser ports are elevated at least 4 feet above the riverbed and they are angled upward 45 degrees;
- Bank attachment of discharge plumes can occur under certain discharge conditions, which can inhibit dispersion and mixing processes - the SCTP diffuser ports are located approximately 600 feet from the shoreline at low river flow and bank attachment has not been observed or predicted; and
- Hydraulic complexities caused by surface or bottom interactions in the near-field can result in reduced entrainment of receiving water into the developing plumes and, therefore, boundary interactions are important processes to consider when a mixing zone dilution model is selected.

The model selection process for the SCTP Outfall 001 diffuser has considered the objectives of this study, the availability and the quality of model input data, the specific conditions of the discharge scenarios being modeled, and the results of outfall dilution studies that have been previously conducted.

In general, model selection depends upon three key factors: (1) the specific outfall configuration, (2) the location of the discharge within the receiving stream, and (3) the receiving water conditions. The effluent and receiving water conditions measured during the Outfall Mixing Performance Study conducted in September 2022 were used to select the model that provides the most accurate representation of the dilution performance of the outfall.

Eight validation modeling scenarios were selected for comparison to the field tracer profiles, as follows:

1. **PRO-05:** north MZB (242 feet), ebb tide (flowing to north) on 9-21-22
2. **PRO-08:** south MZB (242 feet), flood tide (flowing to south) on 9-21-22
3. **PRO-09:** south AZB (24 feet), flood tide (flowing to south) on 9-21-22
4. **PRO-10:** south MZB (242 feet), flood tide (flowing to south) on 9-21-22
5. **PRO-16:** north AZB (24 feet), ebb tide (flowing to north) on 9-22-22
6. **PRO-21:** north AZB (24 feet), ebb tide (flowing to north) on 9-22-22
7. **PRO-22:** north MZB (242 feet), ebb tide (flowing to north) on 9-22-22
8. **PRO-25:** south AZB (24 feet), flood tide (flowing to south) on 9-22-22

Additional details on the selected dye study profiles were previously summarized in Table 2-2. The following conditions were used as inputs to each of the models during the selection process for modeling SCTP Outfall 001:

- **Diffuser port configuration:** ten, 20-inch elastomeric check valve ports equally spaced at 16 feet on center; all ports oriented 45° offshore to the diffuser alignment with ports oriented 45° above horizontal
- **Port diameter:** variable (*note: because the diffuser ports are fitted with Tideflex check valves, the port diameter varies with flow rate; hydraulic data from the valve manufacturer provides information on effective port diameter, exit velocity, and head loss for a wide range of effluent flows*)
- **Discharge (port) depth:** average port depth varied from 43 feet to 44 feet
- **Diffuser port elevation:** 4.3 feet (average) assumed, estimated based on as-built drawings
- **Effluent flow:** ranged from 6.36 mgd (profile PRO-16) on 9-21-22 to 9.50 mgd (profile PRO-05) on 9-22-22
- **Effluent temperature:** ranged from 22.23°C (profile PRO-16) on 9-22-22, to 22.61°C (profile PRO-10) on 9-21-22
- **Site water depth:** 47 to 48 feet, measured at the AZB and MZB (24 feet and 242 feet, respectively)

- **Columbia River discharge:** ranged from 87,350 cfs (profile PRO-25) on 9-22-22 to 97,250 cfs (profile PRO-05) on 9-21-22
- **Ambient current speed:** current speeds measured upstream (south) of the diffuser midpoint on September 21–22, 2022, by the near-bottom meter which ranged from 0.12 m/sec (PRO-22) to 0.50 m/sec (PRO-16)
- **Ambient river temperature:** ranged from 20.02°C (profile PRO-25) on 9-22-22, to 20.31°C (profile PRO-08) on 9-21-22

The following section presents the results of the comparison of the model predictions to the field-measured dilutions for the SCTP Outfall 001 diffuser.

### 3.2.2 Model Validation Results

To compare the predictive capability of the models to the specific conditions of the dye tracer study, the outputs from each of the verification model runs were evaluated for the predicted DF at downstream distances of the regulatory boundaries (the acute and chronic mixing zones) under different river flow and tidal conditions. The field-measured profiles selected from the mixing performance study (listed above) were used for comparison to model predictions provided by the VP model UM3 and the CORMIX 2 model. The comparison of the model-predicted and the field-measured DFs is summarized in Table 3-1.

The model verification inputs and outputs used to evaluate model-predicted dilutions and model selection are provided in Appendix E of this report.

Table 3-1 summarizes the comparison between field-measured dilutions and the model-predicted dilutions using the two models applied in this evaluation (UM3 in VP and CORMIX 2). As shown in Table 3-1, the field-measured dilutions for each profile have been summarized two ways: (1) as a *lower dilution value*—the minimum average dilutions measured within the plume (i.e., from a cluster of measurements at a given depth in the profile), and (2) as an *upper dilution value*—the average of dilutions measured in the defined plume profile. These measured DFs at both the AZB and MZB represent flux-average dilutions in the water column.

Based on guidance provided in Section 13.1 of the Permit Writer's Manual (Ecology, 2018), flux-average DFs are applied at both AZB and MZB for tidal environments including rivers with tidal-induced flow reversals.

The two mixing zone models were evaluated and validated using vertical profile data collected during the dye tracer study. As shown in Table 3-1, different sets of discharge and ambient information were used to characterize the near-field and far-field conditions at the AZB and MZB, respectively. The model-predicted results that best align with the field-measured dilutions are identified in bold text.





**Table 3-1. Dilution Modeling Results from Field Tracer Measurements on September 21 and 22, 2022 for Model Selection**

Field Study Profiles Selected	Profile Sampling Location	Distance to MZB (ft)	Discharge Date/Time	Tidal Condition	Measured Current Speed (m/sec)	Minimum Average Dilution	Detected Plume Avg. Dilution	Effluent Conditions		Equivalent Port Diam., inches (Port Velocity, fps)	Receiving Water Conditions			UM3 Model Predictions		CMX 2 Model Predictions	
								Flow (mgd)	Temp. (°C)		Columbia River Mean Flow (cfs)	Site Water Depth (feet)	Ambient Temp. (°C)	Flux Average DF at		Flux Average DF at	
														Acute Zone	Mixing Zone	Acute Zone	Mixing Zone
PRO-05	North MZB	242	9-21-22 1157-1224 PDT	Ebb (flowing north)	0.36	172	194	9.50	22.40	8.24 (3.71)	97,250	48	20.29	--	179	--	696
PRO-08	South MZB	242	9-21-22 1353-1413 PDT	Flood (flowing south)	0.21	123	259	9.16	22.52	8.17 (3.65)	97,100	47	20.31	--	212	--	435
PRO-09	South AZB	24	9-21-22 1434-1514 PDT	Flood (flowing south)	0.21	44	56	9.00	22.53	8.14 (3.63)	97,050	48	20.22	50	--	218	--
PRO-10	South MZB	242	9-21-22 1542-1558 PDT	Flood (flowing south)	0.16	151	182	8.54	22.61	8.04 (3.55)	96,900	48	20.20	--	210	--	273
PRO-16	North AZB	24	9-22-22 0915-0930 PDT	Ebb (flowing north)	0.50	43	66	6.36	22.23	7.58 (3.16)	90,000	48	20.11	38	--	729	--
PRO-21	North AZB	24	9-22-22 1306-1319 PDT	Ebb (flowing north)	0.21	30	54	9.10	22.37	8.16 (3.64)	88,100	48	20.03	50	--	215	--
PRO-22	North MZB	242	9-22-22 1328-1337 PDT	Ebb (flowing north)	0.12	146	168	9.48	22.39	8.23 (3.71)	87,850	48	20.03	--	147	--	187
PRO-25	South AZB	24	9-22-22 1440-1450 PDT	Flood (flowing south)	0.24	32	42	9.16	22.50	8.17 (3.65)	87,350	48	20.02	43	--	244	--



As presented in Table 3-1, the following summarize the comparison of the models to the field-measured dilutions for the selected dye study profiles listed above:

- **PRO-05:** profile measured at north MZB (242 feet) during *ebb* tide; the UM3-predicted DF of 179 matches up well between the range of field-measured DFs (a minimum average of 172 and a plume average of 194). The CORMIX 2 predictions are significantly higher than the field-measured by about a factor of 4 (DF of 696).
- **PRO-08:** profile measured at south MZB (242 feet) during *flood* tide; the UM3-predicted DF of 212 matches up well in between the range of field-measured DFs (a minimum average of 123 and a plume average of 259). CORMIX 2 predictions are substantially higher than the field-measured by over a factor of 2 (DF of 435).
- **PRO-09:** profile measured at south AZB (24 feet) during *flood* tide; the UM3-predicted DF of 50 falls directly in between the range of field-measured DFs (a minimum average of 44 and a plume average of 56). The CORMIX 2 prediction (DF of 218) is substantially higher than the field-measured by a factor of about 4 to 5 times.
- **PRO-10:** profile measured at south MZB (242 feet) during *flood* tide; both the UM3 and the CORMIX 2 models slightly over-predict the range of field-measured DFs (a minimum average of 151 and a plume average of 182). However, the UM3 model results are much closer than CORMIX 2 to the plume average value (DFs of 210 and 273 ,respectively).
- **PRO-16:** profile measured at north AZB (24 feet) during *ebb* tide; the UM3-predicted DF of 38 slightly under-predicts the range of field-measured DFs (a minimum average of 43 and a plume average of 66). However, in comparison to the CORMIX 2 prediction (DF of 729), the UM3 model results are far more representative of this set of discharge and ambient conditions.
- **PRO-21:** profile measured at north AZB (242 feet) during *ebb* tide; the UM3-predicted DF of 50 falls in between the range of field-measured DFs (a minimum average of 30 and a plume average of 54). The CORMIX 2 results (DF of 215) significantly over-predicts DF in comparison to the field-measured values by a factor of 4 to 7.
- **PRO-22:** profile measured at north MZB (242 feet) during *ebb* tide; UM3-predicted DF of 147 matches up in between the range of field-measured DFs (a minimum average of 146 and a plume average of 168). The CORMIX 2-predicted DF of 187 is slightly higher than the range of field-measured DFs.
- **PRO-25:** profile measured at south AZB (24 feet) during *flood* tide; the UM3-predicted DF of 43 aligns with (but slightly over-predicts) the field-measured plume average DF of 42. The CORMIX 2 prediction (DF of 244) is substantially higher than the field-measured by a factor of 6 to 8 times.

It should be noted that the poor performance of CORMIX 2 under these specific discharge and ambient conditions can likely be attributed to the model's approach to simplifying near-field plume merging and mixing processes. This is done by representing the outfall diffuser as an "equivalent slot," which is essentially a line source of momentum and buoyancy. This issue was addressed previously in Section 3.1.1.2. This modeling approach is used by CORMIX when hydrodynamically unstable discharges are predicted. As a result, mixing and dispersion in the near-field region is a result of model predictions *after* adjacent plumes from the individual diffuser ports have merged. Based on Jacobs' experience with this model, the over-simplification of near-field mixing processes can often lead the model to substantially over-predict dilution.

Based upon numerous comparisons of field-measured to model-predicted dilutions (as outlined above) to provide the model validation for this study, the next section describes which model was selected—and the basis for selection—in evaluating the critical discharge conditions.

### 3.2.3 Model Selection

The results of the model validation presented demonstrate that the UM3 model in VP agrees most closely to the field-measured dilutions at both the AZB and MZB. As previously stated, the CORMIX 2 model significantly over-predicts dilutions at both mixing zone boundaries under nearly every discharge and ambient condition in the model validation. Therefore, the UM3 model has been selected to evaluate the dilution performance of the SCTP Outfall 001 diffuser.

To summarize, the UM3 model in VP was selected to evaluate the SCTP Outfall 001 for the following reasons:

- The UM3 model results best represent the range of field-measured dilutions at the AZB and MZB;
- Boundary effects are generally negligible for the discharge from the new diffuser because of several factors: the depth of the discharge, the orientation of the diffuser ports in the offshore direction, and the distance of the diffuser from the riverbank (about 600 feet at low flow) and proximity to the main river channel flow; and
- The UM3 model is accepted for use by Ecology under appropriate situations, particularly when there are field-measurements available for use in model validation.

The results of dilution modeling for the SCTP Outfall 001 diffuser under critical design low river flow and wet season river flow conditions are presented in the next section.

## 3.3 Modeling Results for Critical Discharge Conditions

Table 3-2 summarizes the matrix of modeling scenarios for evaluating the dilution performance of the SCTP Outfall 001 under various critical river flow conditions. In total, 44 discharge scenarios were developed for existing (2019–2022) and projected future effluent flows (Phase 5, Phase 6, Phase 7, and buildout) under critical low (dry season) river flows, wet season river flows, and annual average discharge conditions. Table 3-2 identifies the water quality criteria basis and season represented by each model case, as well as the model inputs for the required effluent and receiving water parameters.

Based on guidance provided in Section 13.1 of the Permit Writer's Manual (Ecology, 2018), the use of flux-average DF is recommended for both marine environments and for rivers with reversing flows under all conditions (i.e., at both the AZB and MZB). Therefore, all of the DFs subsequently presented in the modeling results (Section 3.3.2) at both the AZB and MZB are flux-average values.

### 3.3.1 Approach

The effluent and receiving water characteristics and diffuser configuration are required inputs for modeling dilution and plume trajectory. The dilution performance of the SCTP Outfall 001 diffuser was modeled using UM3 and the following key model input parameters:

- **Number, spacing, and diameter of discharge ports:** 10 elastomeric check valve ports at a spacing of 16 feet on center; effective port diameter (based on equivalent port area) *varies with effluent flow rate* and ranges from a minimum of 7.91 inches (at 7.88 mgd—the lowest annual average existing effluent flow) to a maximum of 11.60 inches (at 50.90 mgd—the wet season highest daily maximum projected buildout flow).
- **Effluent flow and temperature:** refer to Tables 3-2 through 3-6.
- **Port horizontal discharge angle:** 45° relative to ambient current direction.
- **Port vertical discharge angle:** 45° relative to the water surface.
- **Diffuser discharge depth (below surface):** 42.6 feet for dry season, 7Q10-low flow; 43.6 feet for wet season, 7Q10 flow; 43.4 feet for 30Q5 flow (annual); and 46.5 feet for annual average (harmonic mean) flow.

- **Ambient current speed:** *ebb tide currents*—0.13, 0.44 and 0.57 m/sec for the 10th-, 50th-, and 90th-percentile currents (respectively) under dry season, 7Q10-low flow conditions; 0.33 m/sec (50th-percentile) for wet season, 7Q10 flow; and 0.32 and 0.59 m/sec for annual 30Q5 and harmonic mean flows, respectively; and *flood tide currents*—0.04, 0.11, and 0.21 m/sec for the 10th-, 50th-, and 90th-percentile currents (respectively) under dry season, 7Q10-low flow conditions; and 0.16 m/sec (50th-percentile) for wet season, 7Q10 flow.
- **Ambient temperature:** 21.1°C (dry season, 90th-percentile), 10.7°C (wet season, 90th-percentile), and 12.4°C (annual average, a 50th-percentile value).

The results of the dilution modeling for critical discharge conditions are discussed in the following sections.

### 3.3.2 Modeling Results

Tables 3-2 through 3-6 summarize the model-predicted dilutions for the range of critical river discharge scenarios under existing and projected future effluent flows. In addition to model-predicted DFs, these tables include a summary of key model inputs for effluent and receiving water conditions. Model predictions are provided for the downstream mixing zones at both the zone of acute criteria compliance (i.e., acute zone, or AZB) and at the MZB (at downstream distances of 24 feet and 242 feet, respectively). The model-predicted DFs are flux-average values across the entire plume.

The dilution modeling results are discussed in the following sections for both existing and projected future effluent flows. UM3 model outputs are provided in Appendix E of this report.

#### 3.3.2.1 Existing Effluent Flows

The results of the dilution modeling for existing effluent flows are represented by model cases SCTP-01 through SCTP-11 in Table 3-2 for dry and wet season acute dilution conditions (model cases SCTP-01 to SCTP-05), dry and wet season chronic dilution conditions (model cases SCTP-06 to SCTP-09), and for human health conditions (model cases SCTP-10 and SCTP-11). The existing flows are based on plant effluent monitoring data for the period January 2019 through October 2022.

The modeling results for acute aquatic life criteria conditions show predicted DFs at the AZB (24 feet upstream and downstream) from 30 to 46 under all seasonal effluent and receiving water conditions. The worst-case acute DF of 30 is predicted to occur under dry season conditions, a 7Q10-low river flow (83,506 cfs), the lowest 10th-percentile flood tide current velocity (0.04 m/sec), and the highest daily maximum effluent flow (13.50 mgd).

The modeling results for existing effluent flows also show that the predicted DF at the MZB (242 feet upstream and downstream) is 169 under critical dry season conditions of low river flows and velocities, and 205 under wet season conditions of high river stage and velocities. The lowest predicted DF at the MZB is based on the tidally-averaged/time weighted DF of 169 (represented by model cases SCTP-06 and SCTP-07). Model-predicted DFs under annual average conditions (30Q5 river flow and the harmonic mean river flow) range from 202 to 214, as shown in Table 3-2.

#### 3.3.2.2 Projected Phase 5 Effluent Flows

The results of the dilution modeling for Phase 5 effluent flows are represented by model cases SCTP-12 through SCTP-22 in Table 3-3 for dry and wet season acute dilution conditions (model cases SCTP-12 to SCTP-16), dry and wet season chronic dilution conditions (model cases SCTP-17 to SCTP-20), and for human health conditions (model cases SCTP-21 and SCTP-22). The modeling results for acute aquatic life criteria conditions show predicted DFs at the AZB (24 feet upstream and downstream) from 27 to 41 under all seasonal effluent and receiving water conditions. The worst-case acute DF of 27 is predicted to occur under dry season conditions, a 7Q10-low river flow (83,506 cfs), the lowest 10th-percentile flood tide current velocity (0.04 m/sec), and the highest daily maximum effluent flow (17.33 mgd).

The modeling results for Phase 5 effluent flows also show that the predicted DF at the MZB (242 feet upstream and downstream) is 149 under critical dry season conditions of low river flows and velocities, and 159 under wet season conditions of high river stage and velocities. The lowest predicted DF at the MZB is based on the tidally-averaged/time weighted DF of 149 (represented by model cases SCTP-17 and SCTP-18). Model-predicted DFs under annual average conditions (30Q5 river flow and the harmonic mean river flow) range from 169 to 192 as shown in Table 3-3.

### **3.3.2.3 Projected Phase 6, Phase 7, and Buildout Effluent Flows**

The results of the dilution modeling for Phase 6 effluent flows are represented by model cases SCTP-23 through SCTP-33 in Table 3-4 for dry and wet season acute dilution conditions (model cases SCTP-23 to SCTP-27), dry and wet season chronic dilution conditions (model cases SCTP-28 to SCTP-31), and for human health conditions (model cases SCTP-32 and SCTP-33).

The modeling results for acute aquatic life criteria conditions show predicted DFs at the AZB (24 feet upstream and downstream) from 25 to 40 under all seasonal effluent and receiving water conditions. The worst-case acute DF of 25 (model cases SCTP-25) is predicted to occur under dry season conditions, a 7Q10-low river flow (83,506 cfs), the lowest 10th-percentile flood tide current velocity (0.04 m/sec), and the highest daily maximum effluent flow (19.41 mgd).

The modeling results for Phase 6 effluent flows also show that the predicted DF at the MZB (242 feet upstream and downstream) is 142 under critical dry season conditions of low river flows and velocities, and 151 under wet season conditions of high river stage and velocities. The lowest predicted DF at the MZB is based on the tidally-averaged/time weighted DF of 142 (represented by model cases SCTP-28 and SCTP-29). Model-predicted DFs under annual average conditions (30Q5 river flow and the harmonic mean river flow) range from 163 to 185, as shown in Table 3-4.

The results of the dilution modeling for Phase 7 effluent flows are represented by model cases SCTP-34 through SCTP-44 in Table 3-5 for dry and wet season acute dilution conditions (model cases SCTP-34 to SCTP-38), dry and wet season chronic dilution conditions (model cases SCTP-39 to SCTP-42), and for human health conditions (model cases SCTP-43 and SCTP-44).

The modeling results for acute aquatic life criteria conditions show predicted DFs at the AZB (24 feet upstream and downstream) from 23 to 37 under all seasonal effluent and receiving water conditions. The worst-case acute DF of 23 (model case SCTP-36) is predicted to occur under dry season conditions, a 7Q10-low river flow (83,506 cfs), the lowest 10th-percentile flood tide current velocity (0.04 m/sec), and the highest daily maximum effluent flow (23.56 mgd).

The modeling results for Phase 7 effluent flows also show that the predicted DF at the MZB (242 feet upstream and downstream) is 132 under critical dry season conditions of low river flows and velocities, and 139 under wet season conditions of high river stage and velocities. The lowest predicted DF at the MZB is based on the tidally-averaged/time weighted DF of 132 (represented by model cases SCTP-39 and SCTP-40). Model-predicted DFs under annual average conditions (30Q5 river flow and the harmonic mean river flow) range from 154 to 173, as shown in Table 3-5.

Modeling results for the buildout flows are provided in Table 3-6, with recognition that these conditions are not expected for at least 20 more years, during which time the applicable water quality regulations and guidance or other key assumptions may change. The modeling results for the buildout effluent flows show that the predicted DF at the MZB (242 feet upstream and downstream) is 113 under critical dry season conditions of low river flows and velocities, and 92 under wet season conditions of high river stage and velocities. The lowest predicted DF at the MZB is based on the tidally-averaged/time weighted DF of 92 (represented by model cases SCTP-52 and SCTP-53). Model-predicted DFs under annual average conditions (30Q5 river flow and the harmonic mean river flow) range from 135 to 173.

Table 3-2. Model-Predicted Dilution Factors Under Critical Dry Season, Wet Season, and Annual Average Discharge Conditions for the Salmon Creek Treatment Plant Outfall 001 - Existing (2019-2022) Effluent Flows

UM3 Model Case	Columbia River Receiving Water Conditions						Effluent Conditions <sup>b</sup>			Outfall Diffuser Configuration			Model-Predicted Dilution Factors (DF) at Mixing Zone Boundaries <sup>d</sup>		
	Seasonal Basis <sup>a</sup>	River Discharge	River Flow (cfs)	Temperature (deg. C)	Tidal Condition	Current Speed (m/sec)	Flow Rate (mgd)	Temperature		No./Size Ports (in.) & Spacing (ft)	Equivalent Port Diam. (in.) & Port Velocity (fps)	Diffuser Discharge Depth (feet) <sup>c</sup>	Acute Zone (24 feet) <sup>e</sup>	Mixing Zone (242 feet) <sup>f</sup>	Tidally-Averaged & Time Weighted (Chronic Only) <sup>g</sup>
								Frequency	(deg. C)						
<b>Acute Water Quality Criteria</b>															
SCTP-01	dry season	7Q10	83,506	21.1 (90th percentile)	ebb (downstream)	0.13 (10th percentile)	13.50 (highest daily maximum)	99th percentile (dry season)	23.2	10-20" TFDs at 16-ft	8.97 (4.39)	42.6	42	n/a	n/a
SCTP-02						0.57 (90th percentile)							39	n/a	n/a
SCTP-03					flood (upstream)	0.04 (10th percentile)							30	n/a	n/a
SCTP-04						0.21 (90th percentile)							46	n/a	n/a
SCTP-05	wet season	7Q10	104,150	10.7 (90th percentile)	ebb (downstream)	0.33 (50th percentile)	14.33 (highest daily max.)	99th percentile (wet season)	20.2		9.11 (4.53)	43.6	45	n/a	n/a
<b>Chronic Water Quality Criteria</b>															
SCTP-06	dry season	7Q10	83,506	21.1 (90th percentile)	ebb (downstream)	0.44 (50th percentile)	9.58 (highest monthly avg.)	95th percentile (dry season)	23.0	10-20" TFDs at 16-ft	8.25 (3.73)	42.6	n/a	181	169
SCTP-07						flood (upstream)							0.11 (50th percentile)	n/a	
SCTP-08	wet season	7Q10	104,150	10.7 (90th percentile)	ebb (downstream)	0.33 (50th percentile)	9.98 (highest monthly avg.)	95th percentile (wet season)	19.3		8.33 (3.80)	43.6	n/a	214	205
SCTP-09						flood (upstream)							0.16 (50th percentile)	n/a	
<b>Human Health Criteria: Carcinogen</b>															
SCTP-10	annual	harmonic mean	191,106	12.4 (50th percentile)	ebb (downstream)	0.59 (50th percentile)	7.88 (annual average)	50th percentile	19.1	10-20" TFDs at 16-ft	7.91 (3.43)	46.5	n/a	202	n/a
<b>Human Health Criteria: Non-Carcinogen</b>															
SCTP-11	annual	30Q5	99,893	12.4 (50th percentile)	ebb (downstream)	0.32 (50th percentile)	9.58 (highest monthly avg.)	50th percentile	19.1	10-20" TFDs at 16-ft	8.25 (3.73)	43.4	n/a	214	n/a

<sup>a</sup> Dry season is the period from July 1 to October 31, wet season from November 1 to June 30.

<sup>b</sup> Flow and temperature values are based on effluent measurements from January 2019 through October 2022. Peaking factors were developed for dry and wet weather conditions to provide flow projections.

<sup>c</sup> Discharge depth represents the approximate average depth of the diffuser ports based on (relative to) 7Q10 low flow conditions.

<sup>d</sup> Based on procedures in the Water Quality Program Permit Writer's Manual (Ecology, 2018), model-predicted dilution factors for discharges in 'marine and rotating direction' environments (i.e., estuaries) are flux-average values for both acute and chronic conditions.

<sup>e</sup> The zone where the acute criteria may be exceeded (i.e., acute zone boundary) is a distance of 24.2 feet (7.4 meters) from any discharge port in both the upstream and the downstream direction.

<sup>f</sup> The mixing zone boundary is 242 feet (73.8 meters) in both the upstream and the downstream direction.

<sup>g</sup> For chronic mixing zones located in salt water and tidally-influenced freshwater, Appendix C of the Water Quality Program Permit Writer's Manual (Ecology, 2018) specifies that the critical receiving water current velocity is defined as the 50th percentile current velocity derived from a cumulative frequency distribution analysis *over at least once tidal cycle*. Since site-specific current velocities (measured during the low river flow period) demonstrated that flood tides occur approximately 24 percent of the time at the proposed outfall site, this time-weighted proportion (i.e., 24% flood tide/76% ebb tide) was applied in order to represent tidally-averaged results at the chronic mixing zone boundary.

Table 3-3. Model-Predicted Dilution Factors Under Critical Dry Season, Wet Season, and Annual Average Discharge Conditions for the Salmon Creek Treatment Plant Outfall 001 - Projected Phase 5 Effluent Flows

UM3 Model Case	Columbia River Receiving Water Conditions						Effluent Conditions <sup>b</sup>			Outfall Diffuser Configuration			Model-Predicted Dilution Factors (DF) at Mixing Zone Boundaries <sup>d</sup>			
	Seasonal Basis <sup>a</sup>	River Discharge	River Flow (cfs)	Temperature (deg. C)	Tidal Condition	Current Speed (m/sec)	Flow Rate (mgd)	Temperature Frequency	Temperature (deg. C)	No./Size Ports (in.) & Spacing (ft)	Equivalent Port Diam. (in.) & Port Velocity (fps)	Diffuser Discharge Depth (feet) <sup>c</sup>	Acute Zone (24 feet) <sup>e</sup>	Mixing Zone (242 feet) <sup>f</sup>	Tidally-Averaged & Time Weighted (Chronic Only) <sup>g</sup>	
<b>Acute Water Quality Criteria</b>																
SCTP-12	dry season	7Q10	83,506	21.1 (90th percentile)	ebb (downstream)	0.13 (10th percentile)	17.33 (highest daily maximum)	99th percentile (dry season)	23.2	10-20" TFDs at 16-ft	9.57 (5.01)	42.6	38	n/a	n/a	
SCTP-13						0.57 (90th percentile)								38	n/a	n/a
SCTP-14					flood (upstream)	0.04 (10th percentile)								27	n/a	n/a
SCTP-15						0.21 (90th percentile)								41	n/a	n/a
SCTP-16	wet season	7Q10	104,150	10.7 (90th percentile)	ebb (downstream)	0.33 (50th percentile)	23.40 (highest daily max.)	99th percentile (wet season)	20.2		10.33 (5.95)	43.6	40	n/a	n/a	
<b>Chronic Water Quality Criteria</b>																
SCTP-17	dry season	7Q10	83,506	21.1 (90th percentile)	ebb (downstream)	0.44 (50th percentile)	13.15 (highest monthly avg.)	95th percentile (dry season)	23.0	10-20" TFDs at 16-ft	8.91 (4.33)	42.6	n/a	164	149	
SCTP-18					flood (upstream)	0.11 (50th percentile)								n/a		99
SCTP-19	wet season	7Q10	104,150	10.7 (90th percentile)	ebb (downstream)	0.33 (50th percentile)	17.50 (highest monthly avg.)	95th percentile (wet season)	19.3		9.59 (5.04)	43.6	n/a	175	159	
SCTP-20					flood (upstream)	0.16 (50th percentile)								n/a		107
<b>Human Health Criteria: Carcinogen</b>																
SCTP-21	annual	harmonic mean	191,106	12.4 (50th percentile)	ebb (downstream)	0.59 (50th percentile)	13.71 (annual average)	50th percentile	19.1	10-20" TFDs at 16-ft	9.00 (4.42)	46.5	n/a	169	n/a	
<b>Human Health Criteria: Non-Carcinogen</b>																
SCTP-22	annual	30Q5	99,893	12.4 (50th percentile)	ebb (downstream)	0.32 (50th percentile)	13.15 (highest monthly avg.)	50th percentile	19.1	10-20" TFDs at 16-ft	8.91 (4.33)	43.4	n/a	192	n/a	

<sup>a</sup> Dry season is the period from July 1 to October 31, wet season from November 1 to June 30.

<sup>b</sup> Flow and temperature values are based on effluent measurements from January 2019 through October 2022. Peaking factors were developed for dry and wet weather conditions to provide flow projections.

<sup>c</sup> Discharge depth represents the approximate average depth of the diffuser ports based on (relative to) 7Q10 low flow conditions.

<sup>d</sup> Based on procedures in the Water Quality Program Permit Writer's Manual (Ecology, 2018), model-predicted dilution factors for discharges in 'marine and rotating direction' environments (i.e., estuaries) are flux-average values for both acute and chronic conditions.

<sup>e</sup> The zone where the acute criteria may be exceeded (i.e., acute zone boundary) is a distance of 24.2 feet (7.4 meters) from any discharge port in both the upstream and the downstream direction.

<sup>f</sup> The mixing zone boundary is 242 feet (73.8 meters) in both the upstream and the downstream direction.

<sup>g</sup> For chronic mixing zones located in salt water and tidally-influenced freshwater, Appendix C of the Water Quality Program Permit Writer's Manual (Ecology, 2018) specifies that the critical receiving water current velocity is defined as the 50th percentile current velocity derived from a cumulative frequency distribution analysis over at least once tidal cycle. Since site-specific current velocities (measured during the low river flow period) demonstrated that flood tides occur approximately 24 percent of the time at the proposed outfall site, this time-weighted proportion (i.e., 24% flood tide/76% ebb tide) was applied in order to represent tidally-averaged results at the chronic mixing zone boundary.



Table 3-4. Model-Predicted Dilution Factors Under Critical Dry Season, Wet Season, and Annual Average Discharge Conditions for the Salmon Creek Treatment Plant Outfall 001 - Projected Phase 6 Effluent Flows

UM3 Model Case	Columbia River Receiving Water Conditions						Effluent Conditions <sup>b</sup>			Outfall Diffuser Configuration			Model-Predicted Dilution Factors (DF) at Mixing Zone Boundaries <sup>d</sup>		
	Seasonal Basis <sup>a</sup>	River Discharge	River Flow (cfs)	Temperature (deg. C)	Tidal Condition	Current Speed (m/sec)	Flow Rate (mgd)	Temperature		No./Size Ports (in.) & Spacing (ft)	Equivalent Port Diam. (in.) & Port Velocity (fps)	Diffuser Discharge Depth (feet) <sup>c</sup>	Acute Zone (24 feet) <sup>e</sup>	Mixing Zone (242 feet) <sup>f</sup>	Tidally-Averaged & Time Weighted (Chronic Only) <sup>g</sup>
								Frequency	(deg. C)						
<b>Acute Water Quality Criteria</b>															
SCTP-23	dry season	7Q10	83,506	21.1 (90th percentile)	ebb (downstream)	0.13 (10th percentile)	19.41 (highest daily maximum)	99th percentile (dry season)	23.2	10-20" TFDs at 16-ft	9.85 (5.34)	42.6	37	n/a	n/a
SCTP-24						0.57 (90th percentile)							38	n/a	n/a
SCTP-25					flood (upstream)	0.04 (10th percentile)							25	n/a	n/a
SCTP-26						0.21 (90th percentile)							40	n/a	n/a
SCTP-27	wet season	7Q10	104,150	10.7 (90th percentile)	ebb (downstream)	0.33 (50th percentile)	26.24 (highest daily max.)	99th percentile (wet season)	20.2	10-20" TFDs at 16-ft	10.61 (6.37)	43.6	38	n/a	n/a
<b>Chronic Water Quality Criteria</b>															
SCTP-28	dry season	7Q10	83,506	21.1 (90th percentile)	ebb (downstream)	0.44 (50th percentile)	14.73 (highest monthly avg.)	95th percentile (dry season)	23.0	10-20" TFDs at 16-ft	9.17 (4.59)	42.6	n/a	159	142
SCTP-29					flood (upstream)	0.11 (50th percentile)							n/a	90	
SCTP-30	wet season	7Q10	104,150	10.7 (90th percentile)	ebb (downstream)	0.33 (50th percentile)	19.60 (maximum monthly)	95th percentile (wet season)	19.3	10-20" TFDs at 16-ft	9.88 (5.37)	43.6	n/a	169	151
SCTP-31					flood (upstream)	0.16 (50th percentile)							n/a	97	
<b>Human Health Criteria: Carcinogen</b>															
SCTP-32	annual	harmonic mean	191,106	12.4 (50th percentile)	ebb (downstream)	0.59 (50th percentile)	15.36 (annual average)	50th percentile	19.1	10-20" TFDs at 16-ft	9.27 (4.70)	46.5	n/a	163	n/a
<b>Human Health Criteria: Non-Carcinogen</b>															
SCTP-33	annual	30Q5	99,893	12.4 (50th percentile)	ebb (downstream)	0.32 (50th percentile)	14.73 (highest monthly avg.)	50th percentile	19.1	10-20" TFDs at 16-ft	9.17 (4.59)	43.4	n/a	185	n/a

<sup>a</sup> Dry season is the period from July 1 to October 31, wet season from November 1 to June 30.

<sup>b</sup> Flow and temperature values are based on effluent measurements from January 2019 through October 2022. Peaking factors were developed for dry and wet weather conditions to provide flow projections.

<sup>c</sup> Discharge depth represents the approximate average depth of the diffuser ports based on (relative to) 7Q10 low flow conditions.

<sup>d</sup> Based on procedures in the Water Quality Program Permit Writer's Manual (Ecology, 2018), model-predicted dilution factors for discharges in 'marine and rotating direction' environments (i.e., estuaries) are flux-average values for both acute and chronic conditions.

<sup>e</sup> The zone where the acute criteria may be exceeded (i.e., acute zone boundary) is a distance of 24.2 feet (7.4 meters) from any discharge port in both the upstream and the downstream direction.

<sup>f</sup> The mixing zone boundary is 242 feet (73.8 meters) in both the upstream and the downstream direction.

<sup>g</sup> For chronic mixing zones located in salt water and tidally-influenced freshwater, Appendix C of the Water Quality Program Permit Writer's Manual (Ecology, 2018) specifies that the critical receiving water current velocity is defined as the 50th percentile current velocity derived from a cumulative frequency distribution analysis over at least once tidal cycle. Since site-specific current velocities (measured during the low river flow period) demonstrated that flood tides occur approximately 24 percent of the time at the proposed outfall site, this time-weighted proportion (i.e., 24% flood tide/76% ebb tide) was applied in order to represent tidally-averaged results at the chronic mixing zone boundary.

Table 3-5. Model-Predicted Dilution Factors Under Critical Dry Season, Wet Season, and Annual Average Discharge Conditions for the Salmon Creek Treatment Plant Outfall 001 - Projected Phase 7 Effluent Flows

UM3 Model Case	Columbia River Receiving Water Conditions						Effluent Conditions <sup>b</sup>			Outfall Diffuser Configuration			Model-Predicted Dilution Factors (DF) at Mixing Zone Boundaries <sup>d</sup>		
	Seasonal Basis <sup>a</sup>	River Discharge	River Flow (cfs)	Temperature (deg. C)	Tidal Condition	Current Speed (m/sec)	Flow Rate (mgd)	Temperature		No./Size Ports (in.) & Spacing (ft)	Equivalent Port Diam. (in.) & Port Velocity (fps)	Diffuser Discharge Depth (feet) <sup>c</sup>	Acute Zone (24 feet) <sup>e</sup>	Mixing Zone (242 feet) <sup>f</sup>	Tidally-Averaged & Time Weighted (Chronic Only) <sup>g</sup>
								Frequency	(deg. C)						
<b>Acute Water Quality Criteria</b>															
SCTP-34	dry season	7Q10	83,506	21.1 (90th percentile)	ebb (downstream)	0.13 (10th percentile)	23.56 (highest daily maximum)	99th percentile (dry season)	23.2	10-20" TFDs at 16-ft	10.35 (5.98)	42.6	33	n/a	n/a
SCTP-35						0.57 (90th percentile)							37	n/a	n/a
SCTP-36					flood (upstream)	0.04 (10th percentile)							23	n/a	n/a
SCTP-37						0.21 (90th percentile)							37	n/a	n/a
SCTP-38	wet season	7Q10	104,150	10.7 (90th percentile)	ebb (downstream)	0.33 (50th percentile)	31.86 (highest daily max.)	99th percentile (wet season)	20.2	10-20" TFDs at 16-ft	11.06 (7.17)	43.6	36	n/a	n/a
<b>Chronic Water Quality Criteria</b>															
SCTP-39	dry season	7Q10	83,506	21.1 (90th percentile)	ebb (downstream)	0.44 (50th percentile)	17.88 (highest monthly avg.)	95th percentile (dry season)	23.0	10-20" TFDs at 16-ft	9.65 (5.10)	42.6	n/a	150	132
SCTP-40					flood (upstream)	0.11 (50th percentile)							n/a	77	
SCTP-41	wet season	7Q10	104,150	10.7 (90th percentile)	ebb (downstream)	0.33 (50th percentile)	23.80 (maximum monthly)	95th percentile (wet season)	19.3	10-20" TFDs at 16-ft	10.37 (6.01)	43.6	n/a	157	139
SCTP-42					flood (upstream)	0.16 (50th percentile)							n/a	83	
<b>Human Health Criteria: Carcinogen</b>															
SCTP-43	annual	harmonic mean	191,106	12.4 (50th percentile)	ebb (downstream)	0.59 (50th percentile)	18.65 (annual average)	50th percentile	19.1	10-20" TFDs at 16-ft	9.75 (5.22)	46.5	n/a	154	n/a
<b>Human Health Criteria: Non-Carcinogen</b>															
SCTP-44	annual	30Q5	99,893	12.4 (50th percentile)	ebb (downstream)	0.32 (50th percentile)	17.88 (highest monthly avg.)	50th percentile	19.1	10-20" TFDs at 16-ft	9.65 (5.10)	43.4	n/a	173	n/a

<sup>a</sup> Dry season is the period from July 1 to October 31, wet season from November 1 to June 30.

<sup>b</sup> Flow and temperature values are based on effluent measurements from January 2019 through October 2022. Peaking factors were developed for dry and wet weather conditions to provide flow projections.

<sup>c</sup> Discharge depth represents the approximate average depth of the diffuser ports based on (relative to) 7Q10 low flow conditions.

<sup>d</sup> Based on procedures in the Water Quality Program Permit Writer's Manual (Ecology, 2018), model-predicted dilution factors for discharges in 'marine and rotating direction' environments (i.e., estuaries) are flux-average values for both acute and chronic conditions.

<sup>e</sup> The zone where the acute criteria may be exceeded (i.e., acute zone boundary) is a distance of 24.2 feet (7.4 meters) from any discharge port in both the upstream and the downstream direction.

<sup>f</sup> The mixing zone boundary is 242 feet (73.8 meters) in both the upstream and the downstream direction.

<sup>g</sup> For chronic mixing zones located in salt water and tidally-influenced freshwater, Appendix C of the Water Quality Program Permit Writer's Manual (Ecology, 2018) specifies that the critical receiving water current velocity is defined as the 50th percentile current velocity derived from a cumulative frequency distribution analysis *over at least once tidal cycle*. Since site-specific current velocities (measured during the low river flow period) demonstrated that flood tides occur approximately 24 percent of the time at the proposed outfall site, this time-weighted proportion (i.e., 24% flood tide/76% ebb tide) was applied in order to represent tidally-averaged results at the chronic mixing zone boundary.

**Table 3-6**  
 Model-Predicted Dilution Factors Under Critical Dry Season, Wet Season, and Annual Average Discharge Conditions for the Salmon Creek Treatment Plant Outfall 001 - Buildout Effluent Flows  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

UM3 Model Case	Columbia River Receiving Water Conditions						Effluent Conditions <sup>b</sup>			Outfall Diffuser Configuration			Model-Predicted Dilution Factors (DF) at Mixing Zone Boundaries <sup>d</sup>		
	Seasonal Basis <sup>a</sup>	River Discharge	River Flow (cfs)	Temperature (deg. C)	Tidal Condition	Current Speed (m/sec)	Flow Rate (mgd)	Temperature Frequency	(deg. C)	No./Size Ports (in.) & Spacing (ft)	Equivalent Port Diam. (in.) & Port Velocity (fps)	Diffuser Discharge Depth (feet) <sup>c</sup>	Acute Zone (24 feet) <sup>e</sup>	Mixing Zone (242 feet) <sup>f</sup>	Tidally-Averaged & Time Weighted (Chronic Only) <sup>g</sup>
<b>Acute Water Quality Criteria</b>															
SCTP-45	dry season	7Q10	83,506	21.1 (90th percentile)	ebb (downstream)	0.13 (10th percentile)	37.31 (highest daily maximum)	99th percentile (dry season)	23.2	10-20" TFDs at 16-ft	11.34 (7.89)	42.6	27	n/a	n/a
SCTP-46						0.57 (90th percentile)							37	n/a	n/a
SCTP-47					flood (upstream)	0.04 (10th percentile)							19	n/a	n/a
SCTP-48						0.21 (90th percentile)							31	n/a	n/a
SCTP-49	wet season	7Q10	104,150	10.7 (90th percentile)	ebb (downstream)	0.33 (50th percentile)	50.90 (highest daily max.)	99th percentile (wet season)	20.2	11.60 (9.48)	43.6	32	n/a	n/a	
<b>Chronic Water Quality Criteria</b>															
SCTP-50	dry season	7Q10	83,506	21.1 (90th percentile)	ebb (downstream)	0.44 (50th percentile)	29.21 (highest monthly avg.)	95th percentile (dry season)	23.0	10-20" TFDs at 16-ft	10.87 (6.80)	42.6	n/a	132	113
SCTP-51					flood (upstream)	0.11 (50th percentile)							n/a	52	
SCTP-52	wet season	7Q10	104,150	10.7 (90th percentile)	ebb (downstream)	0.33 (50th percentile)	38.18 (maximum monthly)	95th percentile (wet season)	19.3	11.38 (8.00)	43.6	n/a	103	92	
SCTP-53					flood (upstream)	0.16 (50th percentile)						n/a	56		
<b>Human Health Criteria: Carcinogen</b>															
SCTP-54	annual	harmonic mean	191,106	12.4 (50th percentile)	ebb (downstream)	0.59 (50th percentile)	28.92 (annual average)	50th percentile	19.1	10-20" TFDs at 16-ft	10.84 (6.76)	46.5	n/a	135	n/a
<b>Human Health Criteria: Non-Carcinogen</b>															
SCTP-55	annual	30Q5	99,893	12.4 (50th percentile)	ebb (downstream)	0.32 (50th percentile)	29.21 (highest monthly avg.)	50th percentile	19.1	10-20" TFDs at 16-ft	10.87 (6.80)	43.4	n/a	173	n/a

**Notes:**

- <sup>a</sup> Dry season is the period from July 1 to October 31, wet season from November 1 to June 30.
- <sup>b</sup> Flow and temperature values are based on effluent measurements from January 2019 through October 2022. Peaking factors were developed for dry and wet weather conditions to provide flow projections.
- <sup>c</sup> Discharge depth represents the approximate average depth of the diffuser ports based on (relative to) 7Q10 low flow conditions.
- <sup>d</sup> Based on procedures in the Water Quality Program Permit Writer's Manual (Ecology, 2018), model-predicted dilution factors for discharges in 'marine and rotating direction' environments (i.e., estuaries) are flux-average values for both acute and chronic conditions.
- <sup>e</sup> The zone where the acute criteria may be exceeded (i.e., acute zone boundary) is a distance of 24.2 feet (7.4 meters) from any discharge port in both the upstream and the downstream direction.
- <sup>f</sup> The mixing zone boundary is 242 feet (73.8 meters) in both the upstream and the downstream direction.
- <sup>g</sup> For chronic mixing zones located in salt water and tidally-influenced freshwater, Appendix C of the Water Quality Program Permit Writer's Manual (Ecology, 2018) specifies that the critical receiving water current velocity is defined as the 50th percentile current velocity derived from a cumulative frequency distribution analysis over at least once tidal cycle. Since site-specific current velocities (measured during the low river flow period) demonstrated that flood tides occur approximately 24 percent of the time at the proposed outfall site, this time-weighted proportion (i.e., 24% flood tide/76% ebb tide) was applied in order to represent tidally-averaged results at the chronic mixing zone boundary.



## 4. Water Quality Criteria Compliance

This section provides an evaluation of the SCTP discharge's compliance with Washington's Surface Water Quality Standards (WAC 173-201A) in the Columbia River. This evaluation covers water quality compliance for the discharge of the existing effluent flows, Phase 5, Phase 6, Phase 7, and buildout flows into the Columbia River through the replacement outfall and multi-port diffuser completed in July 2022.

This evaluation has been prepared to be consistent with WAC 173-201A, and to align with Ecology's Permit Writer's Manual (Ecology, 2018). In addition, the authorization of the mixing zone defined for the discharge requires that the SCTP continue to apply "all known available and reasonable methods of treatment" (AKART).

### 4.1 Temperature Criteria Compliance

The aquatic life temperature criterion (WAC 173-201A-602) for the lower Columbia River specifies that "temperature shall not exceed a 1-day maximum (1-Dmax) of 20.0°C due to human activities; no temperature increase will be allowed which will raise the receiving water temperature by greater than 0.3°C; nor shall such temperature increases, at any time, exceed 0.3°C due to any single source or 1.1°C due to all such activities combined."

An energy (mass) balance equation was applied to calculate the excess temperature at the MZB (the difference between the mixed temperature of effluent and river water and the background river temperature or temperature criteria). This worst-case temperature screening evaluation assumed that the river water temperature equals the temperature criterion of 20.0°C (year-round) and applied the maximum measured effluent temperature of 23.3°C.

Using a mass balance equation and applying the following inputs, the mixed temperature increase at the MZB was calculated:

$$(Q_0 \times T_{effluent}) + (Q_{entrain} \times T_{criterion}) = (Q_0 + Q_{entrain}) \times (T_{mixed})$$

Or

$$T_{mixed} = \frac{(Q_0 \times T_{effluent}) + (Q_{entrain} \times T_{criterion})}{(Q_0 + Q_{entrain})}$$

where  $T_{criterion}$  is the temperature of the receiving stream (based on applicable temperature criterion,  $T_{criterion} = 20.0^\circ\text{C}$ ),  $T_{effluent}$  is the maximum daily effluent temperature ( $T_{effluent} = 23.3^\circ\text{C}$ ),  $Q_0$  represents the effluent DF prior to dilution ( $Q_0 = 1$ ), and  $Q_{entrain}$  is the river dilution portion that mixes with the effluent,  $Q_{entrain}$ . By definition, the DF is equal to  $Q_0 + Q_{entrain}$ .

**Existing Effluent Flows.** Using the model-predicted dry season minimum DF for the replacement outfall of **169** at the MZB,  $Q_0 = 1$  (by definition) and  $Q_{entrain} = 168$ , solving the equation for  $T_{mixed}$  yields:

$$\frac{(1 \times 23.3^\circ\text{C}) + (168 \times 20.0^\circ\text{C})}{169} = T_{mixed} = 20.02^\circ\text{C}$$

The average temperature increase is the difference between the temperature of combined wastewater and stream mixture at the MZB ( $T_{mixed}$ ) and the applicable stream temperature criterion ( $T_{criterion}$ ), or  $(20.02^\circ\text{C}) - (20.0^\circ\text{C}) = 0.02^\circ\text{C}$ . Therefore, at the existing effluent flows based on the 2019-2022 monitoring period, the estimated worst-case excess temperature difference for the replacement outfall is  $0.02^\circ\text{C}$ .

**Projected Phase 5 Effluent Flows.** Using the model-predicted dry season minimum DF for the replacement outfall of **150** at the MZB,  $Q_0 = 1$  (by definition) and  $Q_{entrain} = 149$ , solving the equation for  $T_{mixed}$  yields:

$$\frac{(1 \times 23.3^\circ\text{C}) + (149 \times 20.0^\circ\text{C})}{150} = T_{mixed} = 20.02^\circ\text{C}$$

The average temperature increase is the difference between the temperature of combined wastewater and stream mixture at the MZB ( $T_{mixed}$ ) and the applicable stream temperature criterion ( $T_{criterion}$ ), or  $(20.02^{\circ}\text{C}) - (20.0^{\circ}\text{C}) = 0.02^{\circ}\text{C}$ . Therefore, at the effluent flows projected in Phase 5, the estimated worst-case excess temperature difference for the replacement outfall is  $0.02^{\circ}\text{C}$ .

**Projected Phase 6 Effluent Flows.** Using the model-predicted dry season minimum DF for the replacement outfall of **142** at the MZB,  $Q_o = 1$  (by definition) and  $Q_{entrain} = 141$ , solving the equation for  $T_{mixed}$  yields:

$$\frac{(1 \times 23.3^{\circ}\text{C}) + (141 \times 20.0^{\circ}\text{C})}{142} = T_{mixed} = 20.02^{\circ}\text{C}$$

The average temperature increase is the difference between the temperature of combined wastewater and stream mixture at the MZB ( $T_{mixed}$ ) and the applicable stream temperature criterion ( $T_{criterion}$ ), or  $(20.02^{\circ}\text{C}) - (20.0^{\circ}\text{C}) = 0.02^{\circ}\text{C}$ . Therefore, at the effluent flows projected in Phase 6, the estimated worst-case excess temperature difference for the replacement outfall is  $0.02^{\circ}\text{C}$ .

**Projected Phase 7 Effluent Flows.** Using the model-predicted dry season minimum DF for the replacement outfall of **132** at the MZB,  $Q_o = 1$  (by definition) and  $Q_{entrain} = 131$ , solving the equation for  $T_{mixed}$  yields:

$$\frac{(1 \times 23.3^{\circ}\text{C}) + (131 \times 20.0^{\circ}\text{C})}{132} = T_{mixed} = 20.03^{\circ}\text{C}$$

The average temperature increase is the difference between the temperature of combined wastewater and stream mixture at the MZB ( $T_{mixed}$ ) and the applicable stream temperature criterion ( $T_{criterion}$ ), or  $(20.03^{\circ}\text{C}) - (20.0^{\circ}\text{C}) = 0.03^{\circ}\text{C}$ . Therefore, at the effluent flows projected in Phase 7, the estimated worst-case excess temperature difference for the replacement outfall is  $0.03^{\circ}\text{C}$ .

**Projected Buildout Effluent Flows.** Using the model-predicted dry season minimum DF for the replacement outfall of **92** at the MZB,  $Q_o = 1$  (by definition) and  $Q_{entrain} = 91$ , solving the equation for  $T_{mixed}$  yields:

$$\frac{(1 \times 23.3^{\circ}\text{C}) + (91 \times 20.0^{\circ}\text{C})}{92} = T_{mixed} = 20.03^{\circ}\text{C}$$

The average temperature increase is the difference between the temperature of combined wastewater and stream mixture at the MZB ( $T_{mixed}$ ) and the applicable stream temperature criterion ( $T_{criterion}$ ), or  $(20.03^{\circ}\text{C}) - (20.0^{\circ}\text{C}) = 0.03^{\circ}\text{C}$ . Therefore, at the effluent flows projected for buildout conditions, the estimated worst-case excess temperature difference for the replacement outfall is  $0.03^{\circ}\text{C}$ .

The compliance of the SCTP discharge with temperature water quality criteria for the Columbia River, including guidelines for preventing acute lethality and barriers to migrating salmonids, is summarized below in Table 4-1.

**Table 4-1. Temperature Water Quality Criteria Compliance Summary**

Temperature Compliance Condition	Replacement Outfall Compliance Assessment
Aquatic life acute temperature criteria (1-day maximum temperature at or below $23^{\circ}\text{C}$ ) [WAC 173-201A-200-1(c)(vii)(A)].	Maximum effluent temperature prior to discharge = $23.3^{\circ}\text{C}$ and less than $23^{\circ}\text{C}$ within 1 second of discharge mixing.
Site-specific temperature criteria (year-round) shall not exceed a 1-DMax of $20.0^{\circ}\text{C}$ due to human activities [From WAC 173-201A-602 for Columbia River].	Maximum mixed effluent temperature at MZB = $20.02^{\circ}\text{C}$ through Phase 6 and $20.03^{\circ}\text{C}$ through buildout conditions, and therefore not a measurable temperature change above $20.0^{\circ}\text{C}$ .

**Table 4-1. Temperature Water Quality Criteria Compliance Summary**

Temperature Compliance Condition	Replacement Outfall Compliance Assessment
Temperature increases due to any single source may not exceed 0.3°C [From WAC 173-201A-602 for Columbia River].	Maximum temperature increase at the MZB of 0.02°C through Phase 6 and 0.03°C through buildout conditions.
Incremental temperature increases from individual point sources must not at any time exceed $28/(T+7)$ at the edge of the mixing zone boundary, where T represents the background temperature [From WAC 173-201A-200(1)(C)(ii)].	Where background temperature T is 23.1°C, the maximum allowed incremental temperature increase is 0.93 °C. For the SCTP discharge, the maximum temperature increase at the MZB of 0.02°C through Phase 6 and 0.03°C through buildout conditions.
(A) Acute lethality protection (adult and juvenile salmon) = 7-DADMax temperature = /< 22°C, and 1-DMax temperature = /< 23°C [From WAC 173-201A-200-1(c)(vii)(A)].	Background river temperatures are higher than this criteria.*
(B) Acute lethality protection (fish embryo) = 1-DMax temperature < 17.5°C [From WAC 173-201A-200-1(c)(vii)(B)].	Not applicable to Columbia River discharge site.
(C) Acute lethality protection (fish) = plume discharge temperature after 2 seconds < 33.0°C [From WAC 173-201A-200-1(c)(vii)(C)].	Maximum effluent temperature is 23.3°C.
(D) Barriers to adult salmonid migration are assumed to exist any time the 1-DMax temperature is greater than 22°C (71.6°F) and the adjacent downstream water temperatures are 3°C (5.4°F) or cooler. [From WAC 173-201A-200-1(c)(vii)(D)].	Maximum mixed effluent temperature at MZB = 20.02°C through Phase 6 and 20.03°C through buildout conditions – so not a barrier to migration.

\*Based on USGS, Columbia River near Washougal, Washington (95th-percentile 7DADMax of 23.1°C) and Columbia River Water Quality Monitoring Program (Jacobs, 2020) (95th-percentile of 22.7°C).

°F = degrees Fahrenheit.

## 4.2 Thermal Load Compliance

Portions of the Columbia River have been identified as temperature impaired during dry seasons due to river temperatures exceeding numeric criteria in the Oregon and Washington water quality standards. As a result, EPA initiated development of a total maximum daily load (TMDL) for temperature as required by Section 303(d) of the Clean Water Act. In August 2021, EPA issued the final Columbia and Lower Snake Rivers Temperature Total Maximum Daily Load (EPA Region 10, August 2021). The EPA’s temperature TMDL includes a thermal waste load allocation (WLA) for the SCTP discharge to the Columbia River of 1,500 million kilocalories per day. The SCTP thermal WLA is based on an effluent flow of 17.0 mgd and effluent temperature of 23.3°C. The SCTP discharge is projected to comply with this TMDL thermal WLA, which applies as a monthly average during July through October, for the foreseeable future. The SCTP thermal WLA will be added into the NPDES permit upon its renewal.

## 4.3 Chemical Criteria Compliance

An updated Reasonable Potential Analysis (RPA) for the SCTP discharge to the Columbia River was completed using the most recent 5 years of effluent monitoring data and the model-predicted dilutions developed by this study through the projected buildout effluent flows. An evaluation of the DFs required for the SCTP effluent to comply with the aquatic life and human health-based water quality criteria for metals and other priority pollutants detected in the effluent is presented in Table 4-2.

The highest DF required for SCTP effluent compliance with acute aquatic life criteria for effluent metals and organics is 4 for copper and 2 for ammonia in the dry season, compared to the minimum model-predicted acute DF of 30 (existing effluent flows), 23 (Phase 7 effluent flows), and 19 (buildout effluent flows). The highest DF required for compliance with chronic 4-day aquatic life criteria is 7 for copper and 8 for ammonia in the dry season; these are well below the minimum model-predicted DFs at the MZB under all phases including projected buildout conditions. The highest DF required for compliance with chronic 30-day aquatic life criteria is 20, also based on measured ammonia in the dry season. Finally, the highest DF required for compliance with the current EPA-approved human health criteria (November 2022) is 67 based on Bis(2-Ethylhexyl)Phthalate (BEHP), which is well below the minimum model-predicted chronic DFs under all phases. The effluent monitoring data for this chemical are based on the 2021-2022 quarterly sampling, which includes only the representative plastics-free sampling that has been conducted. The highest detection in the 2021-2022 monitoring period is 3.94 micrograms per liter ( $\mu\text{g/L}$ ), which requires a DF of 67 to achieve the human health standard of 0.045  $\mu\text{g/L}$  at the MZB. The model predicts a minimum DF of 173 under Phase 7 and buildout effluent flow conditions, well above the required DF.

Ecology's RPA worksheets reflecting Phase 5 model-predicted DFs are included in Appendix F.



**Table 4-2. Reasonable Potential Analysis of Dilution Requirements for Water Quality Compliance for the SCTP Outfall 001**

Parameter (2017 - Q2 2022)	Water Quality Criteria <sup>a</sup>				No. of Samples	Aquatic Life Effluent Concentration (Max or 95th Percentile) (µg/L)		Human Health Effluent Concentration (Max or 50th Percentile) (µg/L)		Aquatic Life Reasonable Potential Multiplying Factor <sup>d</sup>	Human Health Reasonable Potential Multiplying Factor	Background Concentration (µg/L) <sup>e</sup>	Aquatic Life			Human Health
	Aquatic Life			Nov 2022 EPA Approved Human Health Criteria (µg/L)		Aquatic Life Reasonable Potential Multiplying Factor <sup>d</sup>	Human Health Reasonable Potential Multiplying Factor	Background Concentration (µg/L) <sup>e</sup>	Dilution to Meet Acute WQ Criteria at AZB <sup>f</sup>				Dilution to Meet Chronic 4-day WQ Criteria at MZB <sup>g</sup>	Dilution to Meet Chronic 30-day WQ Criteria at MZB <sup>g</sup>	Nov 2022 EPA Approved HH- WQ Criteria at MZB <sup>g</sup>	
	Acute (1-hour) <sup>b</sup> (µg/L)	Chronic (4-day) <sup>c,i</sup> (µg/L)	Chronic (30-day) <sup>c,i</sup> (µg/L)													
Antimony <sup>h</sup>	--	--	--	6	22	0.5		0.5	--	0.78	0.1	--	--	--	0	
Arsenic <sup>h</sup>	360	190	--	0.018	22	1.72		1.47	1.0	0.61	1.24	0	0	--	NA <sup>j</sup>	
Cadmium <sup>h</sup>	2.6	0.8	--	--	22	0.50	1/2 DL	--	1.0	--	0.1	0	0	--	--	
Chromium <sup>h</sup>	424	138	--	--	22	1.00		--	1.0	--	0.44	0	0	--	--	
Copper <sup>h</sup>	12.7	8.7	--	1,300	22	53.4		13.0	1.0	0.44	0.8	4	7	--	0	
Lead <sup>h</sup>	45.8	1.8	--	--	22	0.53		--	1.0	--	0.13	0	0	--	--	
Mercury <sup>h</sup>	2.1	0.012	--	0.14	15	0.0026		0.0019	1.5	0.83	0.0068	0	0	--	0	
Nickel <sup>h</sup>	1,084.6	120.5	--	80	22	2.3		1.29	1.0	0.61	0.83	0	0	--	0	
Selenium <sup>h</sup>	20	5.0	--	60	22	0.64		0.5	1.0	0.66	0.5	0	0	--	0	
Silver <sup>h</sup>	2.0	--	--	--	21	0.81		--	1.0	--	0.01	0	--	--	--	
Thallium <sup>h</sup>	--	--	--	0.24	21	--		0.1	--	0.54	0.01	--	--	--	0	
Zinc <sup>h</sup>	87.7	80.1	--	1000	22	57.5		42.6	1.0	0.80	4.5	0	0	--	0	
Cyanide <sup>h</sup>	22.0	5.2	--	9	6	6.6		6.6	2.1	0.86	0.0	0	3	--	0	
Bis(2-Ethylhexyl)Phthlate (2021-2022)	--	--	--	0.045	8	--		3.94	--	0.76	0.0	--	--	--	67	
Ammonia, Dry Season <sup>i</sup>	3,825	1,228	491	--	350	9,300		--	1.0	--	20	2	8	20	--	
Ammonia, Wet Season <sup>i</sup>	6,766	3,985	1,594	--	344	7,040		--	1.0	--	20	1	2	4	--	
Existing Flows Model-Predicted Dilutions												30	169	169	202/214	
Phase 5 Model-Predicted Dilutions												27	149	149	169/192	
Phase 6 Model-Predicted Dilutions												25	142	142	163/185	
Phase 7 Model-Predicted Dilutions												23	132	132	154/173	
Buildout Model-Predicted Dilutions												19	92	92	135/173	

<sup>a</sup> Freshwater acute & chronic criteria are from Chapter 173-201A-240 WAC (Dec. 30, 2019) Water Quality Standards for Washington. Human health criteria (HHC) shown are from the November 2022 EPA-approved HHC. Hardness dependent criteria (cadmium, chromium, copper, lead, nickel, silver, and zinc) are calculated using a river-only total hardness of 73 mg/L (as CaCO<sub>3</sub>), which represents the 90th percentile of the background measurements from the background Columbia River chemistry data collected in 2015 as reported in Section 2 of the Phase 5A Engineering Report (CH2M HILL, 2018), plus the measurements from the 2018-2019 Wet Weather and Spring Runoff Ambient Conditions Study (Jacobs, 2020).

<sup>b</sup> The freshwater acute criterion is a 1-hour average concentration not to be exceeded more than once every 3 years on the average, with the exception of silver, which is an instantaneous concentration not to be exceeded at any time. All acute metals criteria are based on dissolved concentrations, except Cr+3 which is based on a total recoverable concentration.

<sup>c</sup> The freshwater chronic criterion is a 4-day average concentration not to be exceeded more than once every 3 years on the average. All chronic metals criteria are based on dissolved concentration, except chromium (trivalent) and mercury (total recoverable). Ammonia also has a chronic criterion for a 30-day average concentration (see footnote h).

<sup>d</sup> The reasonable potential multiplying factor is calculated based on guidance on Table 3-2 (p.54) in the Technical Support Document (EPA, 1991) and Ecology's RPA (PermitCalc) spreadsheet.

<sup>e</sup> Background receiving water analytical results were applied as measured values or one-half of the detection limit for undetected results. Receiving water background data from 2015 sampling provided in the Phase 5A Engineering Report (CH2M HILL, 2018), Ecology's 2007 sampling at Vancouver, and the 2006 Vancouver Westside WWTF Receiving Water Study that was conducted in October 2005 (CH2M, 2006). These background river data are based on clean sampling and low detection analytical methods. Per Table 21 from the Ecology Permit Writer's Manual, if no background data were available a value of 0 was applied.

<sup>f</sup> The AZB for the outfall is the point of compliance for acute aquatic life criteria.

<sup>g</sup> The MZB for the outfall is the compliance point for chronic aquatic life and human health criteria.

<sup>h</sup> The effluent concentrations of metals, mercury, and cyanide in the effluent are reported as total recoverable. Water quality criteria for metals are based on dissolved concentrations, and water quality criteria for cyanide is based on weak and acid dissociable cyanide.

<sup>i</sup> Criteria for ammonia (total as N) are calculated using river-only temperature and pH per Ecology's RPA (PermitCalc) spreadsheet. Ammonia criteria include these concentrations: acute (1-hour average), chronic (30-day average), and chronic (4-day). The chronic 4-day criteria is 2.5 times the 30-day chronic criteria. Seasons are defined as follows: dry (July–October); wet (November–March); spring runoff (April–June).

<sup>j</sup> NA = background concentrations are above the applicable water quality standard for human health, which is for inorganic arsenic.



## 5. References

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**Appendix A**  
**As-Built Drawings of Salmon Creek Treatment Plant**  
**Columbia River Outfall 001 and Outfall Diffuser**  
**Inspection Report**

**A-1. Contract Provisions and Plans**

**A-2. Dive Inspection Report**



## **A-1. Contract Provisions and Plans**





# CONTRACT PROVISIONS AND PLANS

FOR THE CONSTRUCTION OF:

## Phase 5A Project: Package 1 – Salmon Creek Treatment Plant Columbia River Outfall

VOLUME II – PLANS

Discovery Clean Water Alliance Project No. 92-2015-0023

A Discovery Clean Water Alliance Capital Project with  
Clark Regional Wastewater District as Administrative Lead



PREPARED FOR:



CLARK REGIONAL WASTEWATER DISTRICT  
8000 N.E. 52nd COURT  
VANCOUVER, WASHINGTON 98665  
(360) 750-5876  
FAX (360) 750-7570  
crwwd.com

FOR INFORMATION REGARDING  
THIS PROJECT CONTACT:

Tom Lebo  
Alliance Construction Program Manager  
CLARK REGIONAL WASTEWATER DISTRICT  
8000 N.E. 52nd COURT  
VANCOUVER, WASHINGTON 98665  
360.993.8816  
tlebo@crwwd.com

PREPARED BY:

**JACOBS**

JACOBS ENGINEERING GROUP, INC.  
2020 SW FOURTH AVENUE, 3<sup>rd</sup> FLOOR  
PORTLAND, OREGON 97201

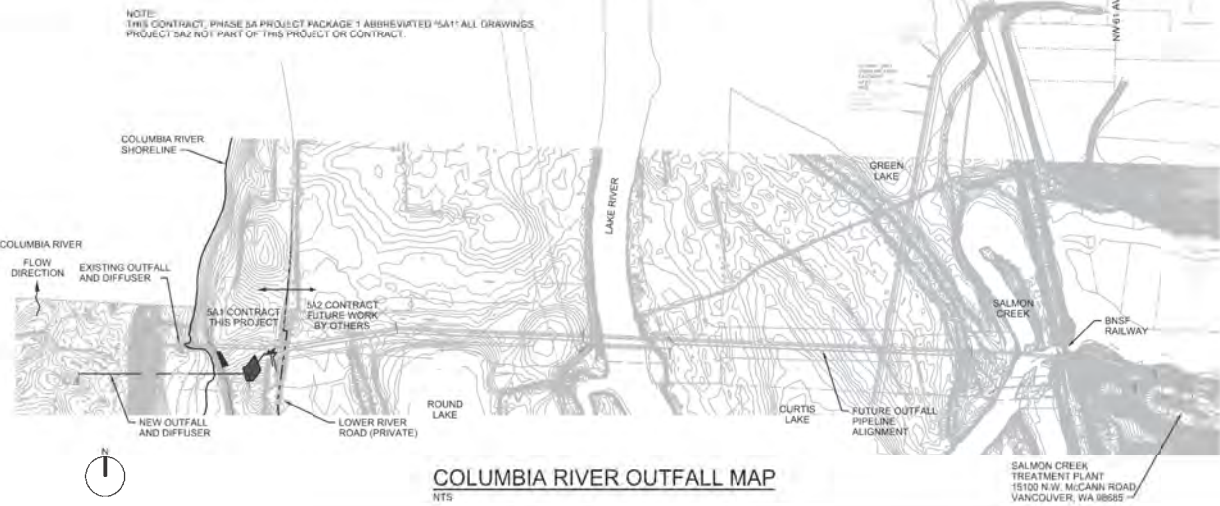
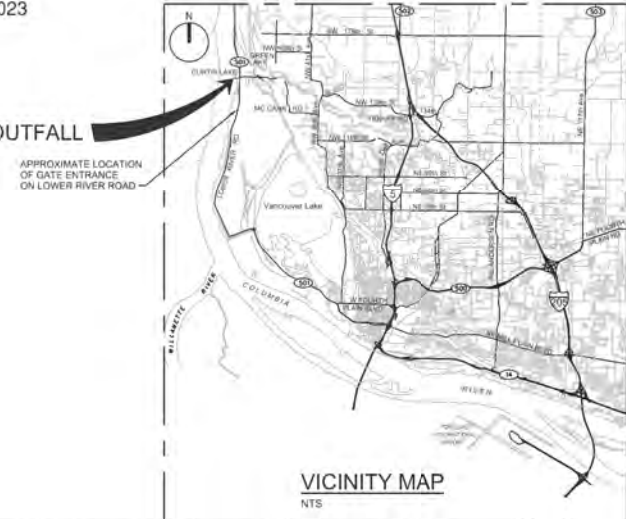
JANUARY 2021

# SALMON CREEK TREATMENT PLANT (SCTP) PHASE 5A PROJECT: PACKAGE 1 COLUMBIA RIVER OUTFALL

DISCOVERY CLEAN WATER ALLIANCE PROJECT #92-2015-0023

## BID DOCUMENTS JANUARY 2021

COLUMBIA RIVER OUTFALL



**ALLIANCE BOARD OF DIRECTORS:**  
**JULIE OLSON**, CLARK COUNTY  
**NORM HARKER**, CLARK REGIONAL WASTEWATER DISTRICT  
**RON ONSLOW**, CITY OF ROSSBORO  
**SHANE BOWMAN**, CITY OF BATTLE GROUND



**JACOBS**  
 2020 SW 4TH AVE #300  
 PORTLAND, OR 97201



JACOBS PROJECT MANAGER	ALLIANCE CAPITAL PROJECT MANAGER	ALLIANCE ADMINISTRATIVE LEAD
J. D. Robin Krause	Date: Lough	John M. Peterson
ROBIN KRAUSE	DATE	DATE

**UTILITY CONTACTS**  
 WATER: CLARK PUBLIC UTILITIES (360) 992-8022  
 GAS: NW NATURAL (503) 256-4211  
 ELECTRICAL: CLARK PUBLIC UTILITIES (360) 992-3666

DISPUBLISHED  
ON JANUARY 22, 2021



NO.	DATE	BY	FOR

Project 92-2015-0023  
 SCTP 5A1 Columbia River Outfall  
 Discovery Clean Water Alliance  
 Clark County, Washington

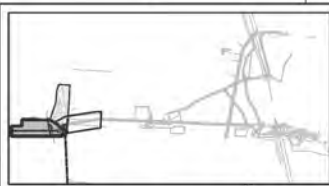
**JACOBS**  
 GENERAL  
 COVER, SITE MAP AND  
 LOCATION MAP

VERIFY SCALE
1" = 100' (AS SHOWN)
DATE: JANUARY 2021
PROJ: 663264
DWG: SA1_01-G-01
SHEET: 1 of 53

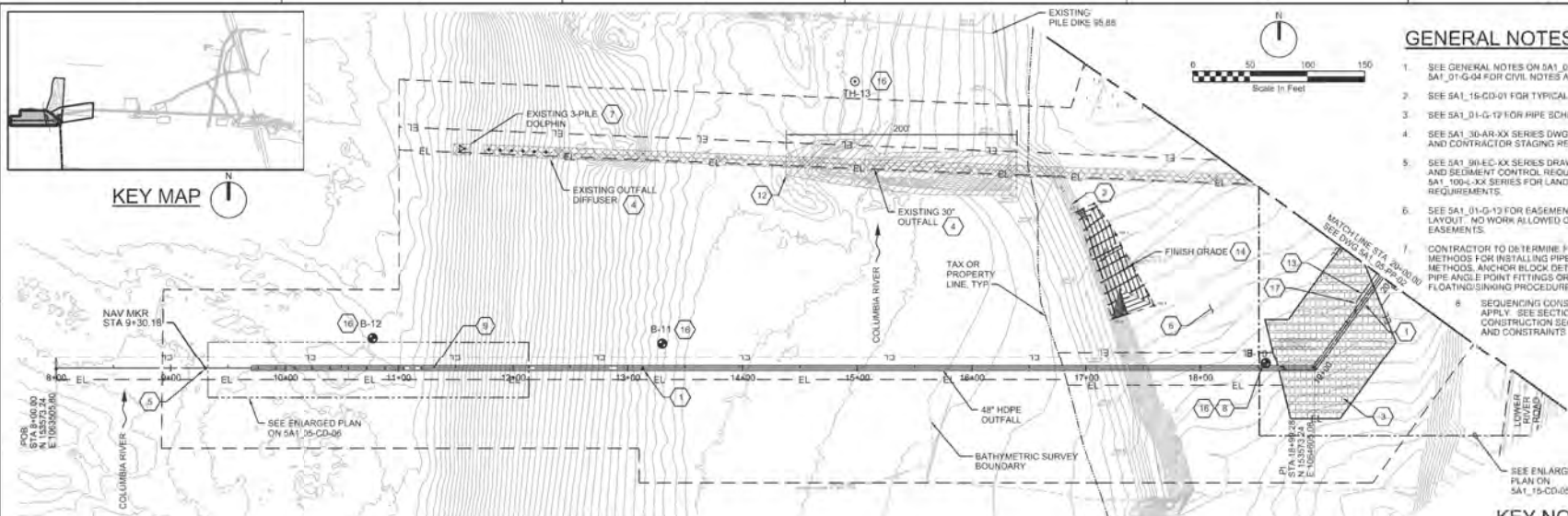
BID DOCUMENTS  
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 SCOPE, AND IS NOT TO BE USED IN ANY MANNER FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CLARK COUNTY.







KEY MAP



PLAN

GENERAL NOTES

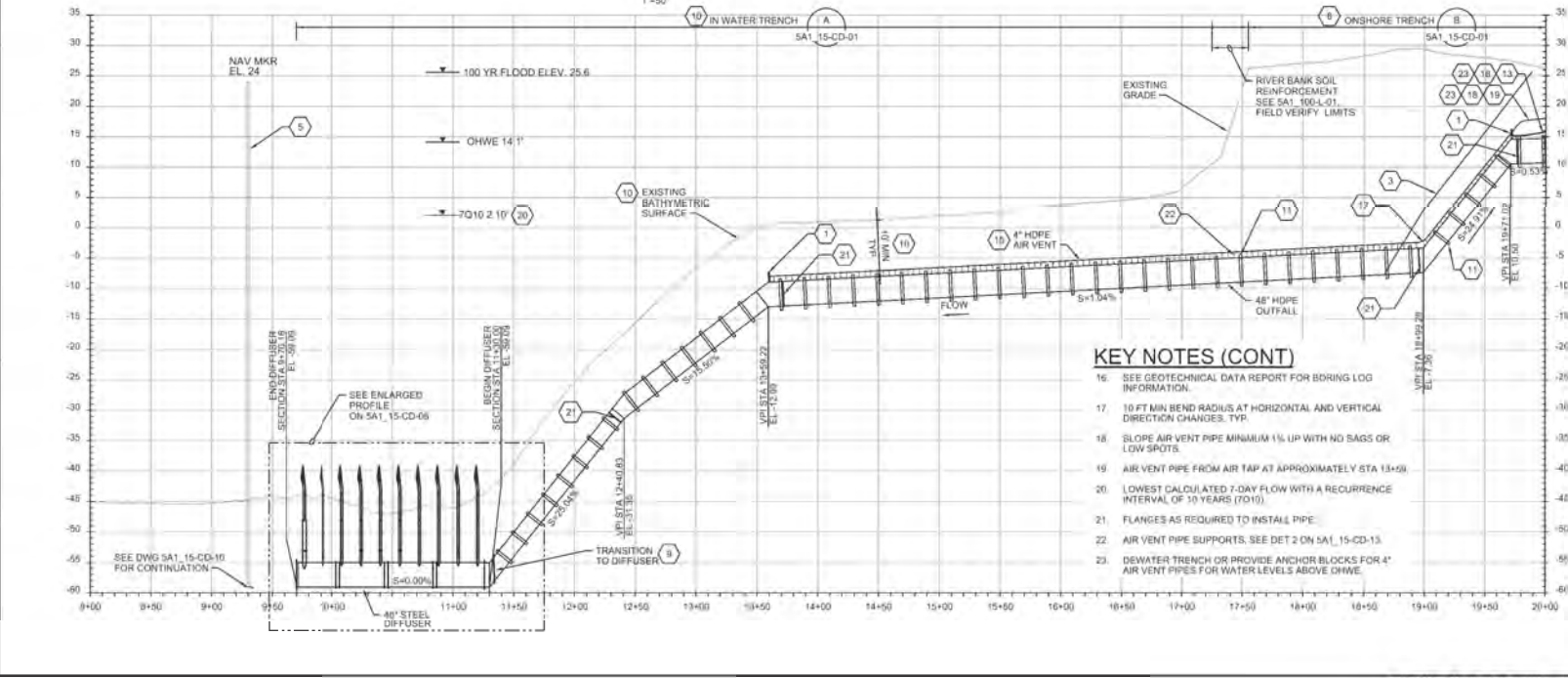
- SEE GENERAL NOTES ON SA1\_05-PP-00. SEE SA1\_01-G-04 FOR CIVIL NOTES AND LEGEND.
- SEE SA1\_15-CD-01 FOR TYPICAL TRENCH SECTIONS.
- SEE SA1\_01-G-17 FOR PIPE SCHEDULE.
- SEE SA1\_30-AR-XX SERIES DWGS FOR ACCESS ROAD AND CONTRACTOR STAGING REQUIREMENTS.
- SEE SA1\_90-EC-XX SERIES DRAWINGS FOR EROSION AND SEDIMENT CONTROL REQUIREMENTS AND SA1\_100-L-XX SERIES FOR LANDSCAPING REQUIREMENTS.
- SEE SA1\_01-G-13 FOR BASEMENT DIMENSIONS AND LAYOUT. NO WORK ALLOWED OUTSIDE TEMPORARY BASEMENTS.
- CONTRACTOR TO DETERMINE FINAL MEANS AND METHODS FOR INSTALLING PIPE INCLUDING TRENCH METHODS, ANCHOR BLOCK DETAILS AND SPACING, PIPE ANGLE POINT FITTINGS, BENDS, AND FLOATING/SINKING PROCEDURES.
- SEQUENCING CONSTRAINTS APPLY. SEE SECTION 01 31 15 CONSTRUCTION SEQUENCING AND CONSTRAINTS.

KEY NOTES (○)

- TAP FOR 4" HDPE AIR RELEASE PIPE. SEE DET 1 AND 2 ON SA1\_15-CD-12. PLACE AT HIGH POINT AT BEND. FIELD VERIFY.
- OHW LINE. APPROXIMATE FROM SURVEY DATA.
- CONCRETE REVEMENT MAT. SEE ENLARGED PLAN ON SA1\_15-CD-05.
- REMOVE EXISTING OUTFALL PIPE, DIFFUSERS, SUPPORTING PILES, AND LARGE TRENCH MATERIALS. SEE SA1\_10-D-02, SA1\_10-D-03, SA1\_10-D-05 AND SA1\_10-D-06.
- PROVIDE NAVIGATION MARKER. SEE SA1\_15-CD-10.
- RESTORE AREAS TO APPROXIMATE PRE-EXISTING ELEVATIONS AND GRADES EXCEPT GRADE LOCALIZED AREAS SMOOTH AND UNIFORM WITHOUT LOW SPOTS. SLOPE UNIFORMLY TO DRAIN AWAY FROM VAULTS.
- REMOVE EXISTING DOLPHIN. SEE SA1\_10-D-03.
- DECOMMISSION PIEZOMETER IN ACCORDANCE WITH WASHINGTON ADMINISTRATION CODE 173-160-381.
- TRANSITION FROM HDPE TO DIFFUSER PIPE. SEE DET 2 ON SA1\_15-CD-08.
- RESTORE SURFACE TO PRE-EXCAVATION ELEVATIONS AND MAINTAIN MINIMUM OF 10 FT OF COVER OVER PIPE.
- ANCHOR BLOCKS. TYP. APPROX SIZE. SEE DET 1 ON SA1\_15-CD-10. MAXIMUM 20 FT SPACING.
- APPROXIMATE REMOVAL AREA OF RIP RAP PLACED IN 2001. SEE SA1\_10-D-05 AND SA1\_10-D-06. FIELD VERIFY LIMITS AND AS APPROVED BY RPR.
- AIR VENT PIPE FROM AIR TAP AT APPROX STA 19+12.
- COORDINATE WITH STREAM BANK RESTORATION. SEE SA1\_100-L-03.
- HEIGHT ABOVE OUTFALL SET BY ANCHOR BLOCKS @ 1 FT MIN. SLOPE UNIFORMLY UPWARD WITH NO SAGS.

KEY NOTES (CONT)

- SEE GEOTECHNICAL DATA REPORT FOR BORING LOG INFORMATION.
- 10 FT MIN BEND RADIUS AT HORIZONTAL AND VERTICAL DIRECTION CHANGES. TYP.
- SLOPE AIR VENT PIPE MINIMUM 1% UP WITH NO SAGS OR LOW SPOTS.
- AIR VENT PIPE FROM AIR TAP AT APPROXIMATELY STA 13+50.
- LOWEST CALCULATED 7-DAY FLOW WITH A RECURRENCE INTERVAL OF 10 YEARS (7010).
- FLANGES AS REQUIRED TO INSTALL PIPE.
- AIR VENT PIPE SUPPORTS. SEE DET 2 ON SA1\_15-CD-13.
- DEWATER TRENCH OR PROVIDE ANCHOR BLOCKS FOR 4" AIR VENT PIPES FOR WATER LEVELS ABOVE OHWE.



DATE	2021/01/15
BY	AWP
CHECKED BY	AWP
DESIGNED BY	AWP
DATE	
BY	
CHECKED BY	
DESIGNED BY	

Project: 2021015-0023  
 Schematic: Outfall  
 Location: Ocean View Area  
 Client: Clark County, Washington

**JACOBS**  
 CIVIL PLAN AND PROFILE  
 OUTFALL PIPELINE  
 STA 8+70 TO 20+00

VERIFY SCALE	1" = 10' (HORIZONTAL) 1" = 5' (VERTICAL)
DATE	JANUARY 2021
PROJ.	663264
DWG.	SA1_05-PP-01
SHEET	10 of 53









## A-2. Dive Inspection Report



# Advanced American Construction

Advanced-American.com



## DIVE INSPECTION REPORT

### Salmon Creek WWTP Outfall Inspection Clark Regional Wastewater District

**REPORT DATE:** December 2, 2022

**PREPARED FOR:** Bob Sanguinetti

**PREPARED BY:** Dan Simpson  
Advanced American Construction

**AAC Job Number:** 1121-821



# Advanced American Construction, Inc.

Post Office Box 83599 • Portland, Oregon 97283  
 Phone: (503) 445-9000 • Fax: (503) 546-3031  
 Website: www.callaac.com • CCB# 167886

December 2, 2022

Bob Sanguinetti  
 Clark Regional Wastewater District

Phone: 360-600-5372  
 Email: bsanguinetti@crwwd.com

## Diving Inspection Report Salmon Creek WWTP Outfall Inspection 2022

Inspection Date: December 1, 2022

Job Location: Columbia River Mile 96 - Ridgefield, WA - Lat. 45.82150 Long. 122.75402

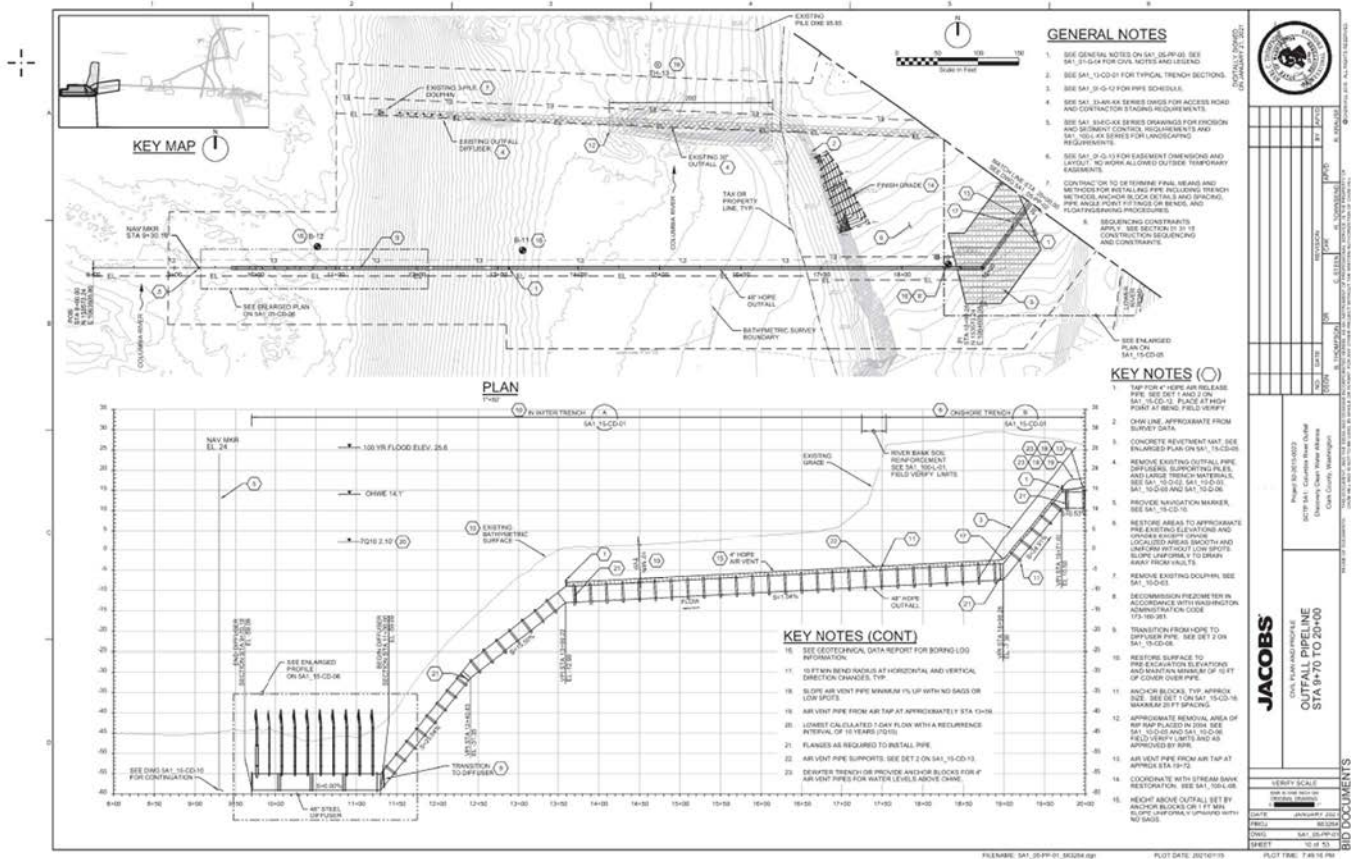


Figure 1 - Salmon Creek outfall civil plan and profile.



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On November 30<sup>th</sup> and December 1<sup>st</sup>, 2022, Advanced American Construction, Inc. (AAC) supplied a three-man dive crew for inspection at the Clark Regional Wastewater District - Salmon Creek WWTP Outfall. The dive team was equipped with a surface supplied air dive system and underwater video system. The crew was staged from a 26' dive boat launched from AAC facility and driven to location.

**Background:** The Salmon Creek WWTP Outfall consists of 10 diffusers. The Diffusers are labeled #1-10# with #1 being the furthest offshore and #10 being the closest inshore. This outfall was recently installed in 2021. Each diffuser is equipped with a 20" rubber check valve that has a 45-degree elbow built in. These are bolted to a 20" diameter vertical riser pipe with qty. 4 break away bolts.

## Scope of Work:

AAC dive crew did an inspection of the outfall that included condition of pipe, diffusers, river bottom condition.

## Conditions Found:

- The diver reported that the main outfall pipe is completely covered in sand and was unable to see the pipe at any part of the inspection.
- The diffusers #1-10 were all located and inspected with the information provided below.
- The material at river bottom was sand with very little wood debris.
- No sand berms upstream or downstream of the diffusers.

The three-pile steel dolphin located 40' at the offshore end of the outfall pipe showed no issue. The end of the outfall was in 52' of water at the time of inspection.

## Observations at Diffusers

### Diffuser #1

- Lower riser pipe flange connection buried.
- Upper riser buried.
- 4" of clearance from river bottom to bottom of the rubber check valve.
- Flange hardware buried.
- The diffuser was unobstructed with good flow.



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## Diffuser #2

- Lower riser pipe flange connection buried.
- Upper riser buried.
- 24" of clearance from river bottom to bottom of the rubber check valve.
- Flange hardware buried.
- The diffuser was unobstructed with good flow.

## Diffuser #3

- Lower riser pipe flange connection buried.
- Upper riser buried.
- 30" of clearance from river bottom to bottom of the rubber check valve.
- Flange hardware buried.
- The diffuser was unobstructed with good flow.

## Diffuser #4

- Lower riser pipe flange connection buried.
- Upper riser buried.
- 36" of clearance from river bottom to bottom of the rubber check valve.
- Check valve to riser flange hardware installed and tight.
- The diffuser was unobstructed with good flow.

## Diffuser #5

- Lower riser pipe flange connection buried.
- Upper riser 12" exposed. Marked 2-3.
- 48" of clearance from river bottom to bottom of the rubber check valve.
- Check valve to riser flange hardware installed and tight.
- The diffuser was unobstructed with good flow.

## Diffuser #6

- Lower riser pipe flange connection buried.
- Upper riser 18" exposed. Marked 3-3.
- 60" of clearance from river bottom to bottom of the rubber check valve.
- Check valve to riser flange hardware installed and tight.
- The diffuser was unobstructed with good flow.



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## Diffuser #7

- Lower riser pipe flange connection buried.
- Upper riser 30" exposed. Marked 2-1.
- 72" of clearance from river bottom to bottom of the rubber check valve.
- Check valve to riser flange hardware installed and tight.
- The diffuser was unobstructed with good flow.

## Diffuser #8

- Lower riser pipe flange connection buried.
- Upper riser 36" exposed. Marked 1-2.
- 64" of clearance from river bottom to bottom of the rubber check valve.
- Check valve to riser flange hardware installed and tight.
- The diffuser was unobstructed with good flow.

## Diffuser #9

- Lower riser pipe flange connection buried.
- Upper riser 48" exposed. Marked 4-1.
- 74" of clearance from river bottom to bottom of the rubber check valve.
- Check valve to riser flange hardware installed and tight.
- The diffuser was unobstructed with good flow.

## Diffuser #10

- Lower riser pipe flange connection observed with qty.4 break away bolts installed.
- Upper riser 55" exposed. Marked 4-2.
- 84" of clearance from river bottom to bottom of the rubber check valve.
- Check valve to riser flange hardware installed and tight.
- The diffuser was unobstructed with good flow.



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Website: [www.callaac.com](http://www.callaac.com) • CCB# 167886

A link for the final inspection video will be provided by email.

Thank you for the opportunity to work with you on this project. If you have questions, please contact me directly at 503-445-9000.

Sincerely,

A handwritten signature in black ink, appearing to read "Dan Simpson".

Dan Simpson  
Advanced American Construction, Inc.



# DIAGRAMS & PICTURES

Figure 1 - Salmon Creek outfall civil plan and profile. .... 1  
Figure 2 - AAC Diver entering the water above the outfall. .... 7  
Figure 3 - Salmon Creek outfall dolphin with a buoy on #6 diffuser. .... 8  
Figure 4 - All 10 diffusers were unobstructed. .... 9  
Figure 5 - Diffuser #7 riser pipe. .... 9  
Figure 6 - #6 diffuser check valve. .... 10  
Figure 7 - Light wood debris accumulation on some diffusers. .... 10  
Figure 8 - Break away bolt diffuser #10. .... 11  
Figure 9 - Outfall diffuser plan and profile. .... 11  
Figure 10 - Outfall diffuser detail. .... 12

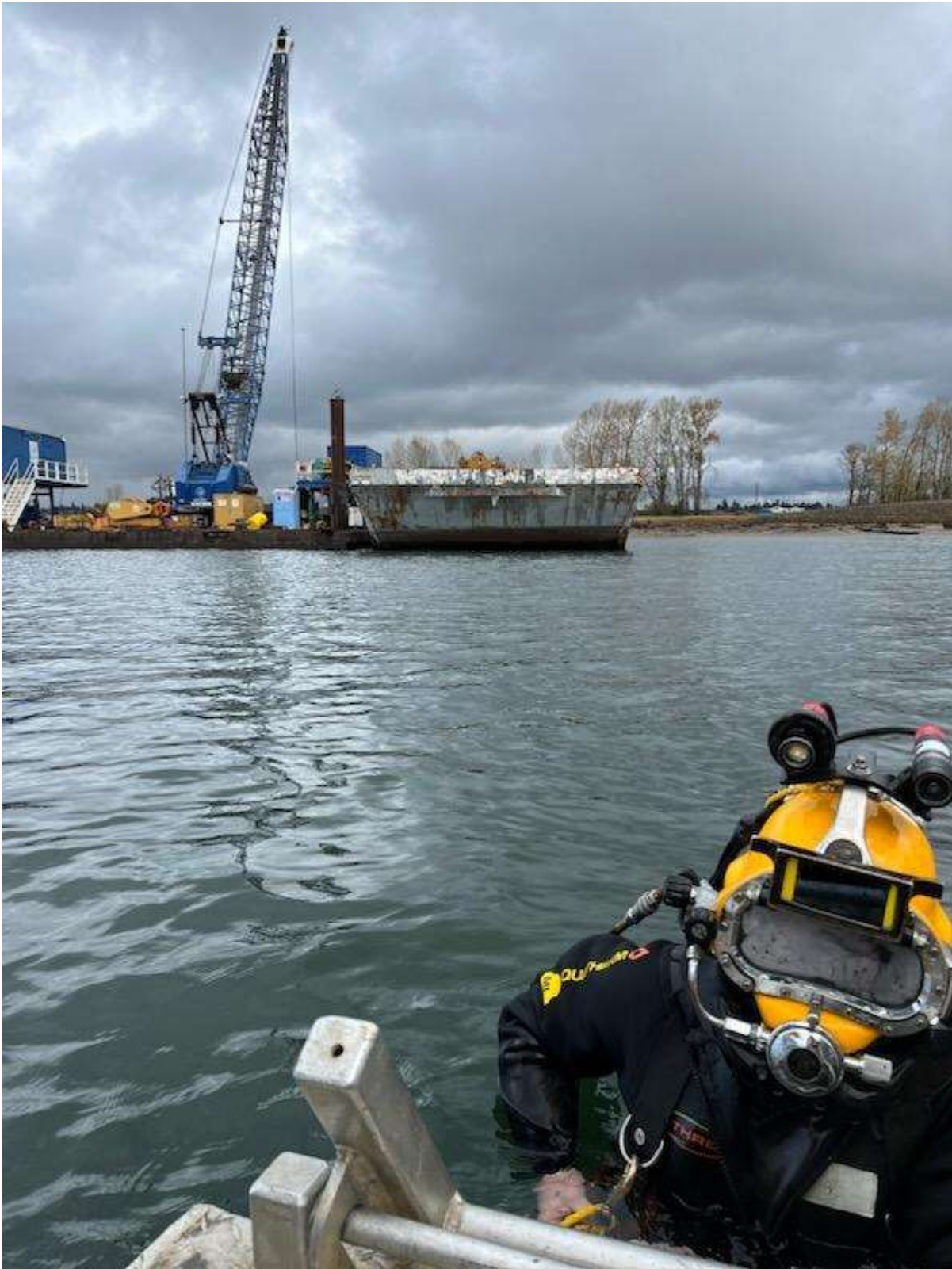


Figure 2 - AAC Diver entering the water above the outfall.



**Figure 3 - Salmon Creek outfall dolphin with a buoy on #6 diffuser.**



**Figure 4 - All 10 diffusers were unobstructed.**



**Figure 5 - Diffuser #7 riser pipe.**



Figure 6 - #6 diffuser check valve.



Figure 7 - Light wood debris accumulation on some diffusers.



Figure 8 - Break away bolt diffuser #10.

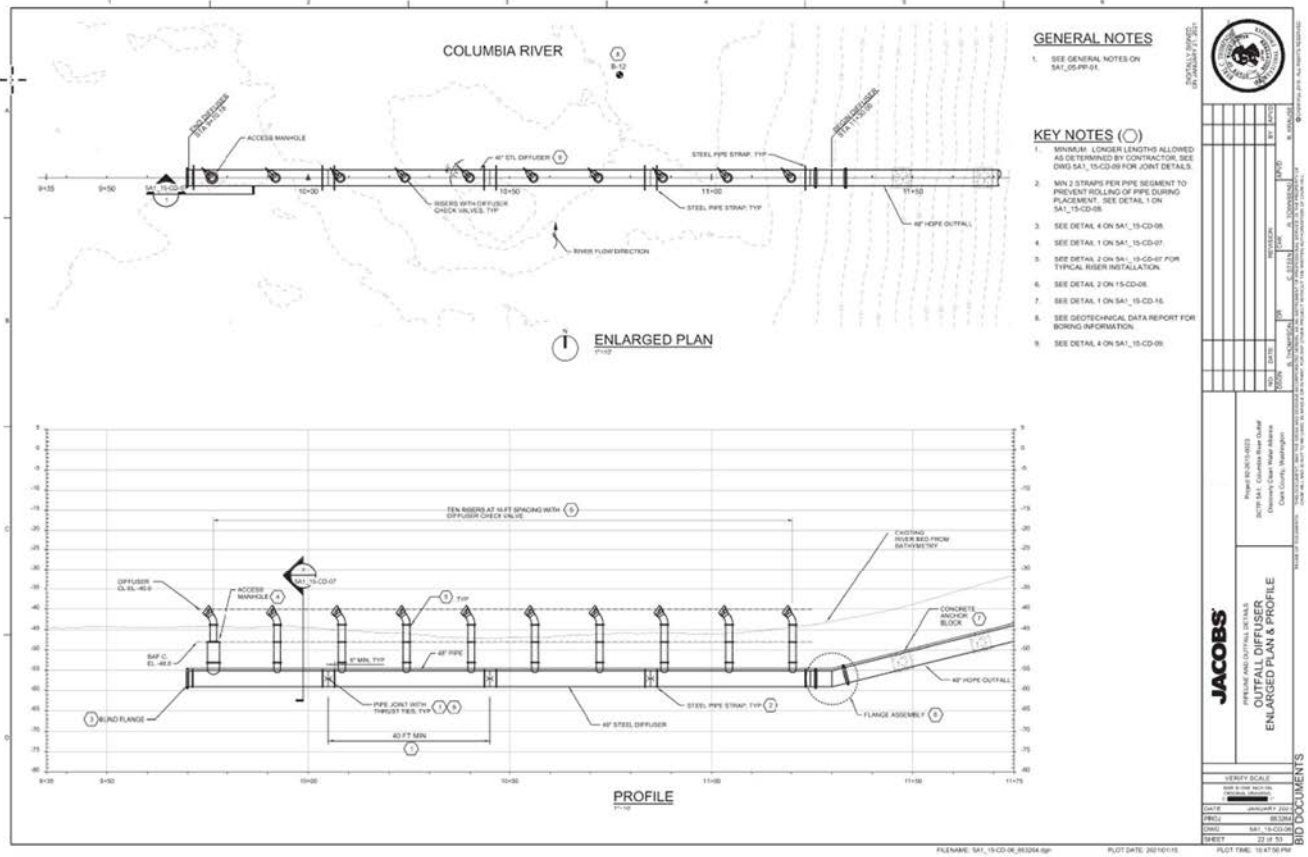


Figure 9 - Outfall diffuser plan and profile.

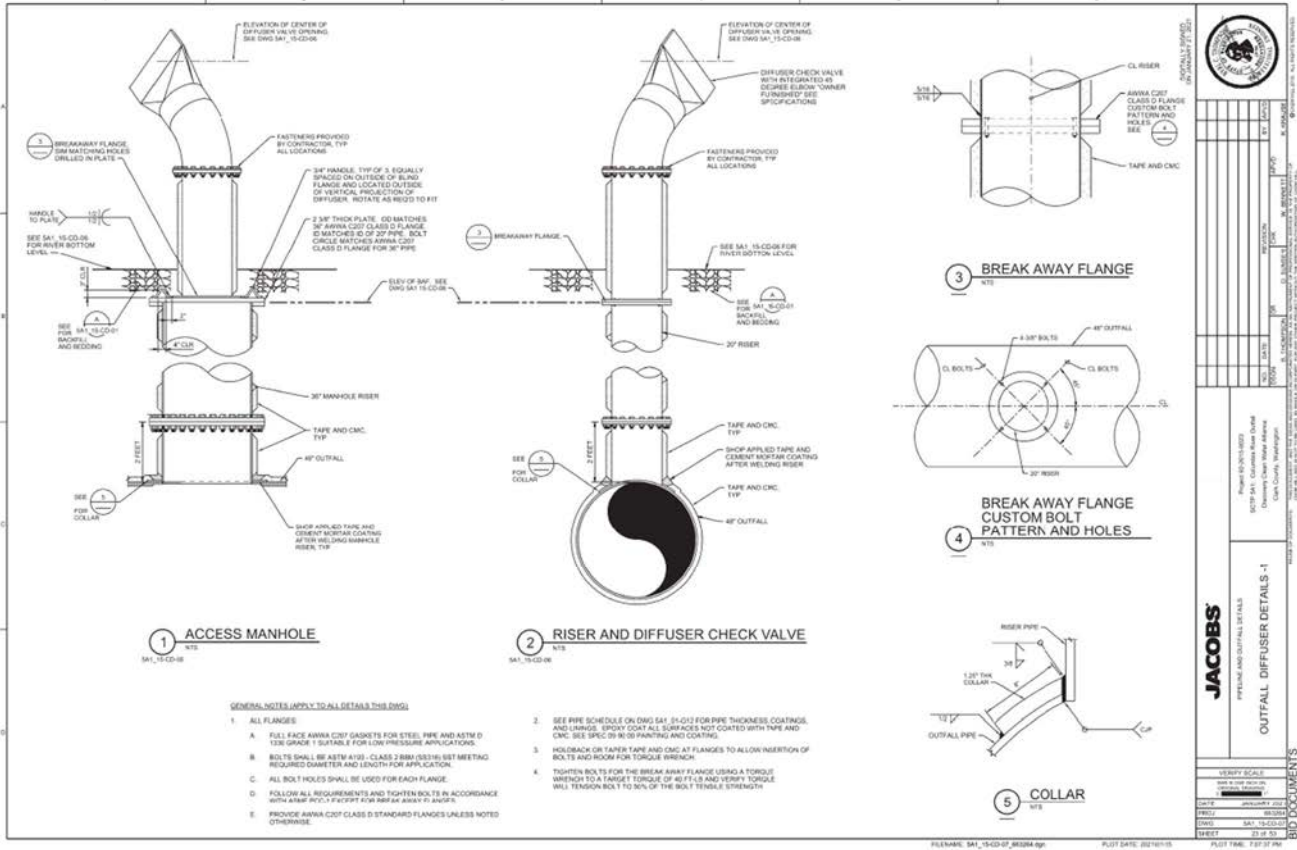


Figure 10 - Outfall diffuser detail.



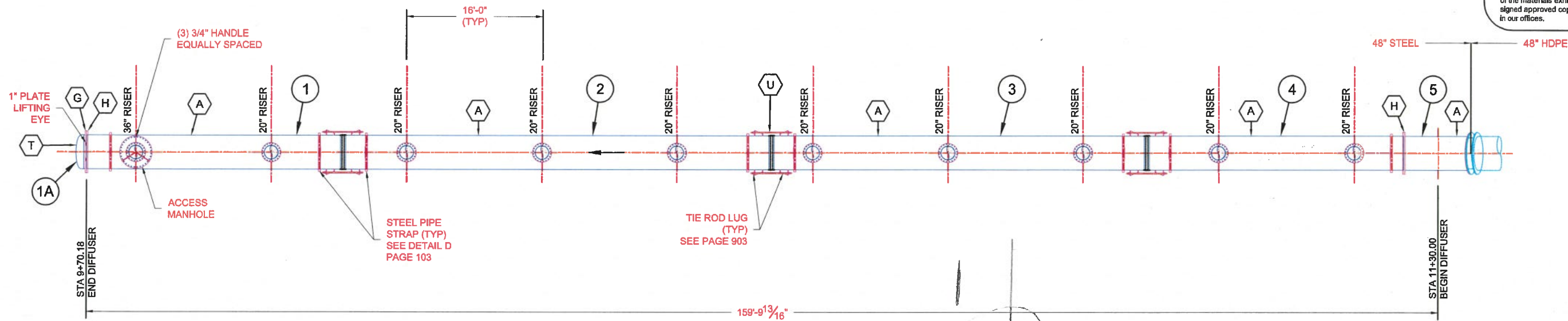


**NOTES:**

- PLEASE PROVIDE DIMENSIONS FOR AREAS WITH THE "" NOTATION.
- CONTRACTOR TO VERIFY ALL DIMENSIONS.
- CONTRACTOR TO VERIFY 48" STEEL PIPE END STATION, ELEVATION & CONNECTION TO 48" HDPE PIPE.

**CONTRACTOR NOTE:**

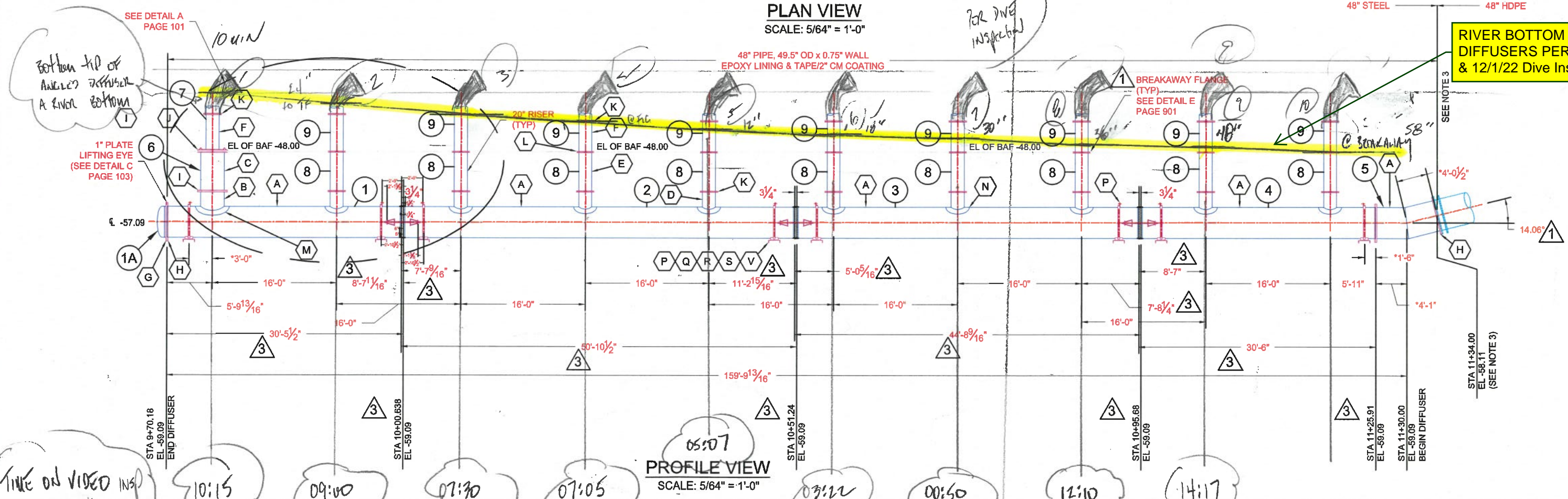
This drawing is our interpretation of the contract documents for this material.  
Hallmark Industrial Supply takes no responsibility for its completeness of accuracy. It is the customer's responsibility to check this drawing and notify Hallmark in writing of any changes required. Under no circumstances will fabrication of the materials exhibited herein begin until a signed approved copy of this drawing is received in our offices.



**PLAN VIEW**  
SCALE: 5/64" = 1'-0"

48" PIPE, 49.5" OD x 0.75" WALL  
EPOXY LINING & TAPE/2" CM COATING

**RIVER BOTTOM AT DIFFUSERS PER 11/30 & 12/1/22 Dive Inspection**



**PROFILE VIEW**  
SCALE: 5/64" = 1'-0"

TIME ON VIDEO INS  
11/30/22  
12/1/22

REV	DESCRIPTION	DATE	BY	APP'VD
3	REVISED PER HALLMARK COMMENTS ON 09/20/21	09/21/21	RP	MN
2	ADDED ITEM CALLOUTS	08/10/21	JWC	MN
1	REVISED PER CUSTOMER EMAIL 07/08/21	07/10/21	RP	MN
0	FOR APPROVAL	06/25/21	EP	MN



PROJECT: SALMON CREEK - PHASE 5A  
HALLMARK INDUSTRIAL SUPPLY  
5148 Lotus Street, Houston, Texas 77045

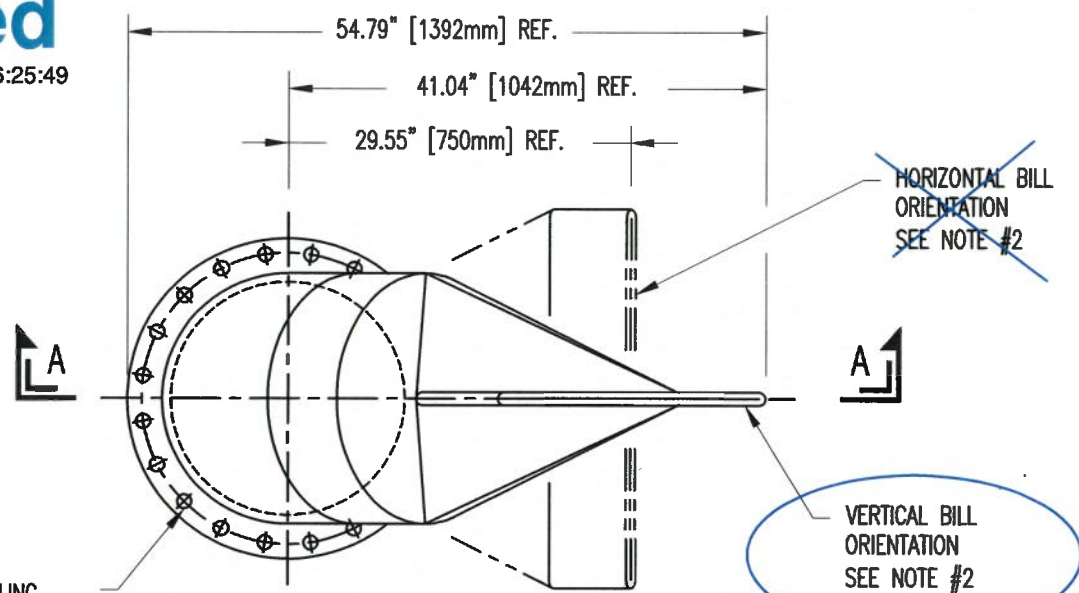
DESCRIPTION: OUTFALL DIFFUSER

DRAWN BY:	CHKD BY:
EP	MN
SHEET NO.: 100	DATE: 06/25/21
JOB NO.: 1957	REV.: 2

**Reviewed**

B. Sanguinetti / 02/14/2021 6:25:49 PM

ITEM	QTY.	DESCRIPTION	MAT'L
1	1	DIFFUSER CHECK VALVE, W/SR 45° ELBOW	NEOPRENE
2	1	RETAINING RING	316 S/STEEL

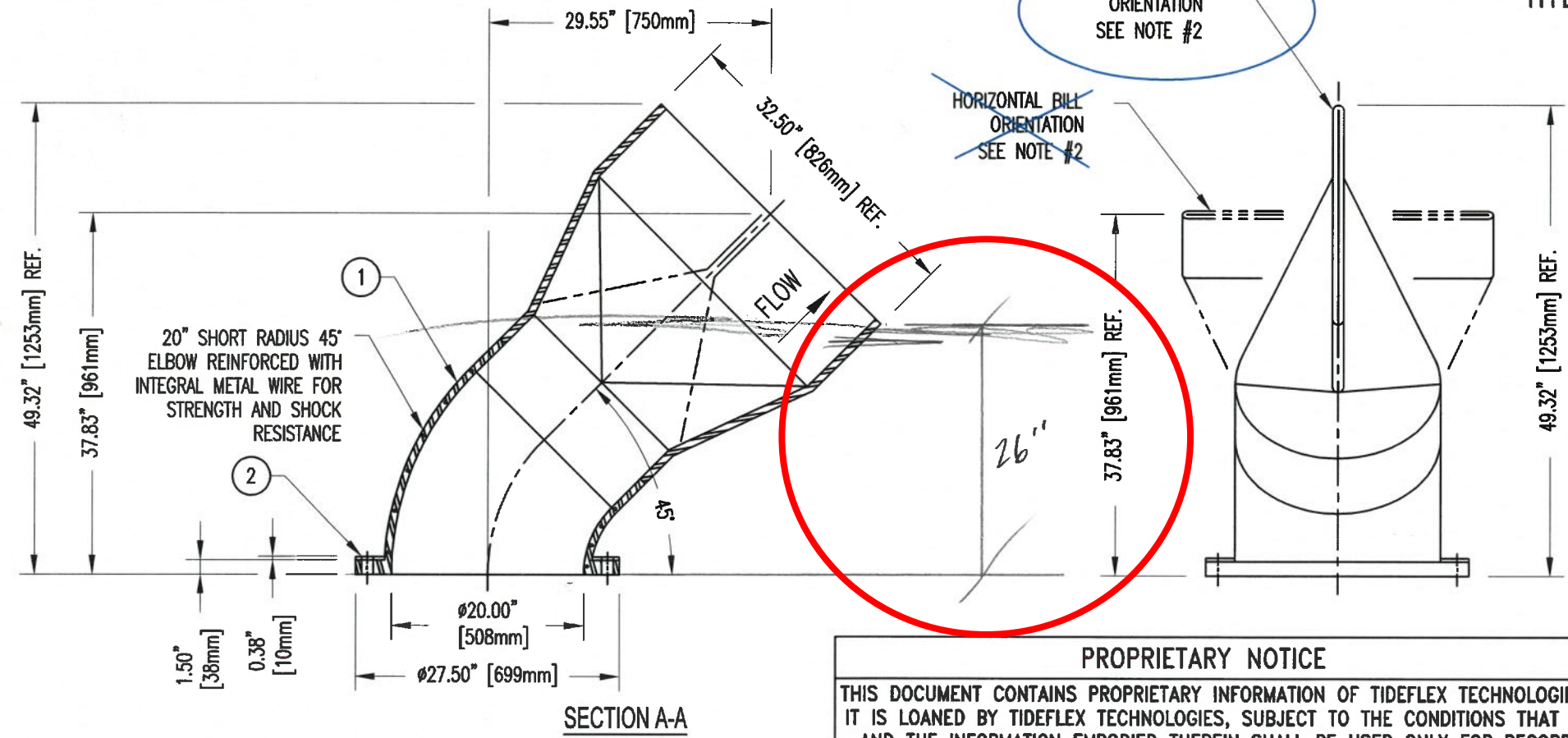


**VERTICAL BILL ORIENTATION PER CONTRACT DRAWINGS 5A1-15-CD-06, -07**

- NOTES:**
1. MAXIMUM BACK PRESSURE:  ENTER 0 IF PRESSURE IN HEADER CANNOT DROP BELOW PRESSURE PRODUCED BY THE RECEIVING BODY OF WATER
  2. BILL ORIENTATION:

ENGINEER: JACOBS ENGINEERING  
 PROJECT: SALMON CREEK WWTP OUTFALL DIFFUSER  
 DISCOVERY CLEAN WATER ALLIANCE, WA  
**QUANTITY: 12**  
 HYDRAULIC CODE No: 2998

20° ANSI 125/150# FLG. DRILLING  
 20 HOLES Ø1.25" THRU  
 ON A Ø25.00" BOLT CIRCLE



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CUSTOMER APPROVAL  
 SIGNED: **APPROVED**  
 Bob Sanguinetti / 02/14/2021 6:51:16 PM

OPPORTUNITY No: 101643 SALES ORDER No:

**Tidflex**  
 Technologies  
 A Division of Red Valve Company, Inc.

750 HOLIDAY DR. STE.400  
 PITTSBURGH, PA 15220  
 info@redvalve.com  
 412.279.0044  
 fax 412.279.5410

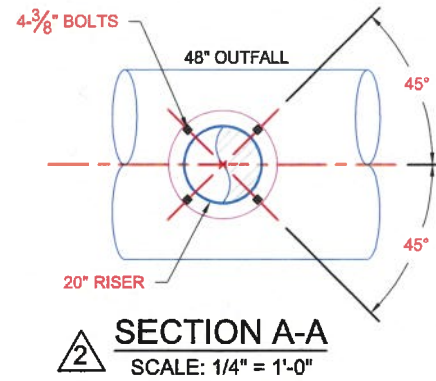
TT PRODUCT: 20" SERIES 35D W/SR 45° ELBOW	
TT PART No: 35D-200-APPROVAL	
DR. BY: TLM	DATE: 2/4/21
CHKD. BY:	DATE:
CAD SCALE: FULL	REV
PLOT SCALE: 1 = 1	DWG No: TTS-43526

CUSTOMER: CLARK REGIONAL WASTEWATER DISTRICT  
 ORDER No: 11560

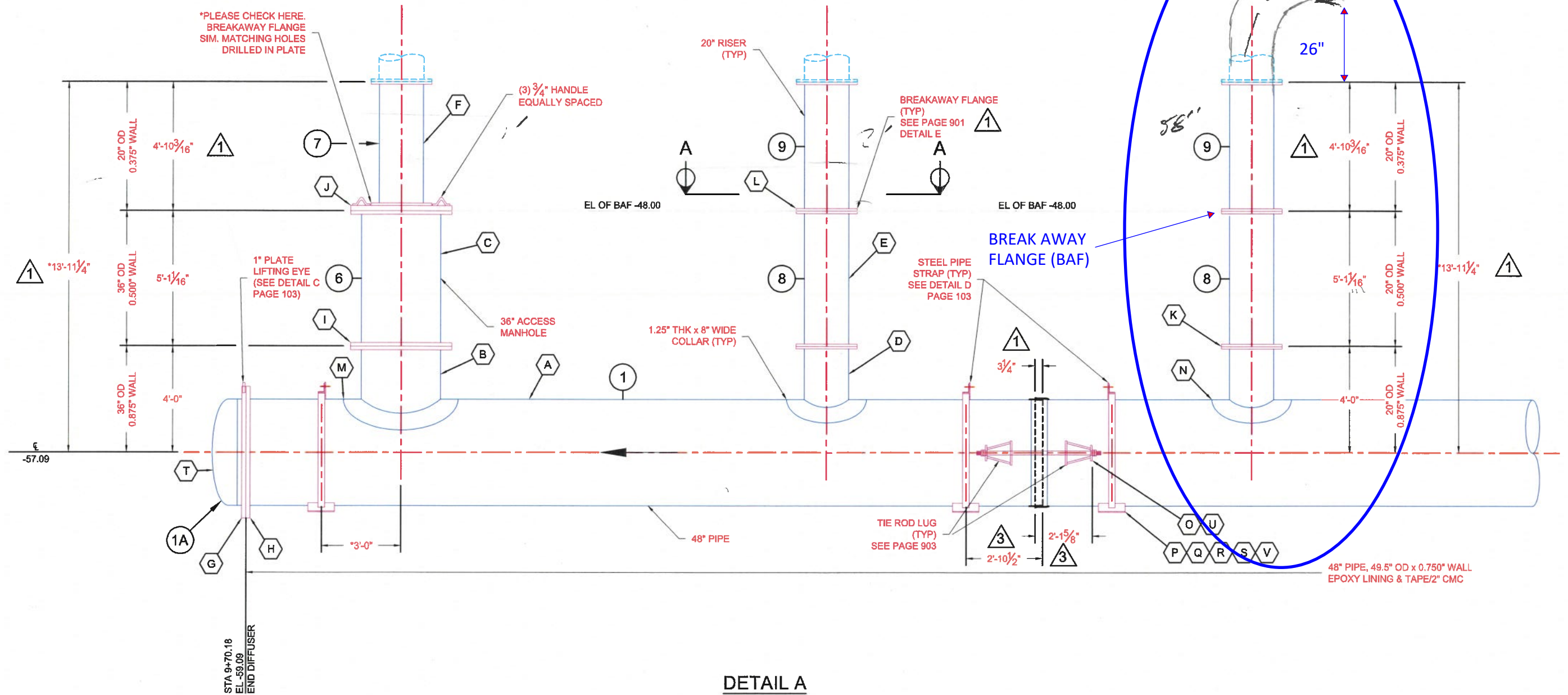
**CONTRACTOR NOTE:**

This drawing is our interpretation of the contract documents for this material.

Hallmark Industrial Supply takes no responsibility for its completeness of accuracy. It is the customers responsibility to check this drawing and notify Hallmark in writing of any changes required. Under no circumstances will fabrication of the materials exhibited herein begin until a signed approved copy of this drawing is received in our offices.

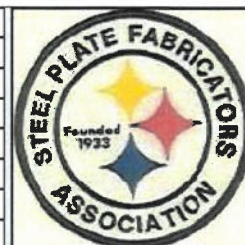


- NOTES:**
- PLEASE PROVIDE DIMENSIONS FOR AREAS WITH THE \*\*\* NOTATION.
  - CONTRACTOR TO VERIFY ALL DIMENSIONS & ELEVATIONS.



**DETAIL A**  
SCALE: 1/4" = 1'-0"

REV	DESCRIPTION	DATE	BY	APP'VD
3	REVISED PER HALLMARK COMMENTS ON 09/20/21	09/21/21	RP	MN
2	ADDED ITEM CALLOUTS & SECTION A-A	08/10/21	JWC	MN
1	REVISED PER CUSTOMER EMAIL 07/08/21	07/08/21	RP	MN
0	FOR APPROVAL	06/25/21	EP	MN



PROJECT: SALMON CREEK - PHASE 5A

HALLMARK INDUSTRIAL SUPPLY  
5148 Lotus Street, Houston, Texas 77045

DESCRIPTION: OUTFALL DIFFUSER - DETAIL A

DRAWN BY:	CHKD BY:
EP	MN
SHEET NO.:	DATE:
101	06/25/21
JOB NO.:	REV.:
1957	2



**Appendix B**  
**Outfall 001 Mixing Performance Study Plan and Ecology**  
**Mixing Zone Study Checklist**

**B-1. Outfall 001 Mixing Performance Study Plan**

**B-2. Ecology Mixing Zone Study Requirement Checklist**



## **B-1. Outfall 001 Mixing Performance Study Plan**





# Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study Plan

Clark Regional Wastewater District  
JAC-5AP1-01

Salmon Creek Treatment Plant Outfall--Services During Construction  
June 10, 2022



An Alliance Capital Project delivered by Clark Regional Wastewater District as  
Administrative Lead for the Discovery Clean Water Alliance

## Jacobs

## Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study Plan

<b>Client name:</b>	Clark Regional Wastewater District		
<b>Project name:</b>	Salmon Creek Treatment Plant Outfall--Services During Construction		
<b>Client reference:</b>	JAC-5AP1-01	<b>Project no:</b>	D3497800
<b>Document no:</b>	Not used	<b>Project manager:</b>	Scott Crook
<b>Revision no:</b>	0	<b>Prepared by:</b>	Brad Paulson
<b>Date:</b>	June 10, 2022	<b>Reviewed by:</b>	David Wilson, Erin Thatcher
		<b>File name:</b>	SCTP Outfall Mixing Performance Study Plan

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## 1. Introduction

This Study Plan presents the specific approach for conducting an Outfall Mixing Performance Study of the Salmon Creek Wastewater Treatment Plant (SCTP) new outfall diffuser discharge to the Columbia River near River Mile 96 (Figure 1). This Study Plan includes the detailed study approach, methods for collection of field measurements, dilution modeling, and reporting. The information developed in this Outfall Mixing Performance Study will be submitted to the Washington State Department of Ecology (Ecology) by the Clark Regional Wastewater District (District) and the Discovery Clean Water Alliance (Alliance) to fulfill the requirements specified in Ecology's approval of the Engineering Report for the Phase 5A Project – Columbia River Outfall and Effluent Pipeline (issued February 11, 2019) and conditions specified in the Endangered Species Act (ESA) Biological Opinion project approval by NOAA National Marine Fisheries Service and the U.S. Army Corps of Engineers (ACOE). This study will document and verify the dilution performance of the new SCTP outfall diffuser and evaluate compliance with State water quality standards. Verification of the outfall diffuser performance will be achieved by the Outfall Mixing Performance Study that will be conducted during the first low river flow season (August-October period) following completion of the construction of the outfall and diffuser in the Columbia River.

**Figure 1. Overview of Salmon Creek Treatment Plant, Existing 30-inch and New 48-inch Effluent Pipelines, and the Location of the Original and New Outfall Diffusers in the Columbia River**



*Source: CH2M modified from Google Earth, 2018 Engineering Report for the Phase 5A Project—Columbia River Outfall and Effluent Pipeline*

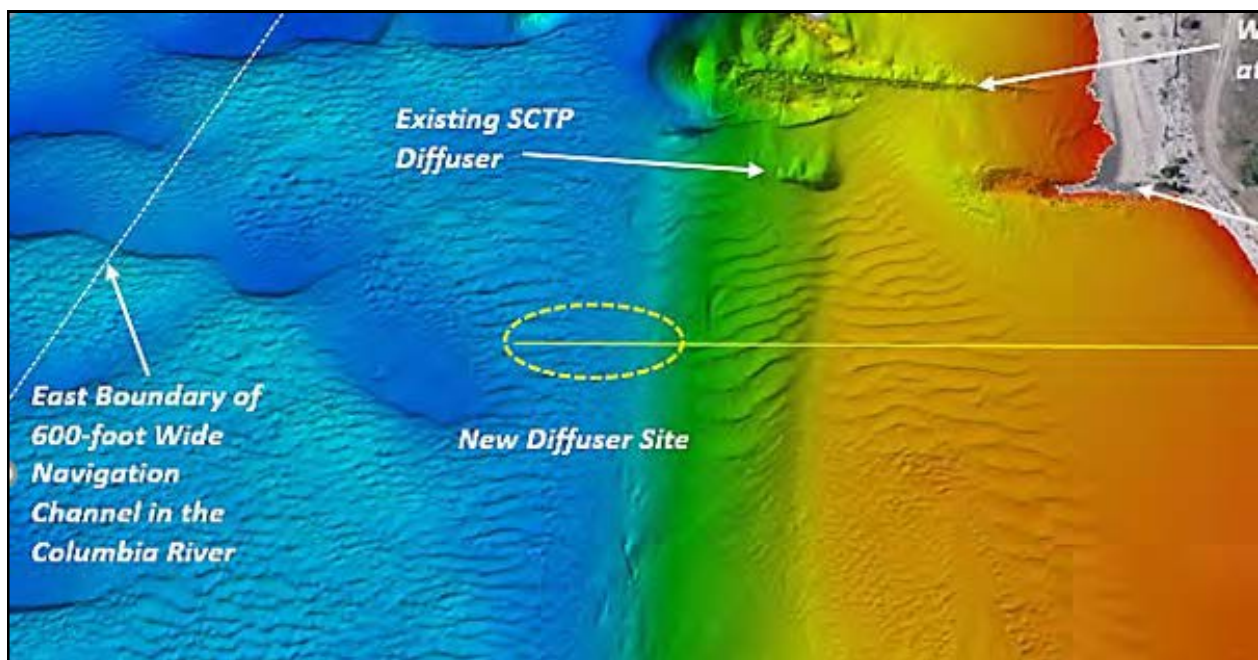
## 2. Project Background

### 2.1 SCTP Outfall Details and Mixing Zones

The SCTP outfall discharge is located near River Mile 96 in the lower Columbia River, approximately 5 miles downstream of the Willamette River confluence and approximately 8 miles upstream of the Lewis River confluence. The site is subjected to diurnal tide-induced elevation changes throughout the year, and the river flow has flood tide-induced reversals during low to moderate river flows in the Columbia River. Tidal elevation ranges can be as large as approximately 3 feet under lower river flows and large flood tidal exchange periods.

The original 30-inch effluent pipeline from the SCTP to the Columbia River is a 7,500-foot-long pipeline that terminates with a 5-port diffuser in the river. The original outfall diffuser (labeled as the “existing” outfall in Figures 1 through 4) will no longer be used after the new outfall and diffuser are functioning in June or July 2022. Approximately 870 feet of the existing outfall pipe and the diffuser section will be removed from the river up to the onshore tie-in structure during the 2022 in-water work period (beginning in October 2022). Figure 2 is a bathymetry image that illustrates the locations of the original outfall diffuser and the new outfall diffuser site in the Columbia River and south (upstream) of the Willow Pile Dike. The color-defined bathymetry shown in Figure 2 ranges from shallow nearshore areas (red, orange, yellow) to intermediate depths (green), to deep offshore areas (blue). The new outfall diffuser was installed further offshore and at greater depth than the original outfall diffuser.

Figure 2. Existing and New SCTP Outfall Diffusers in the Columbia River near River Mile 96



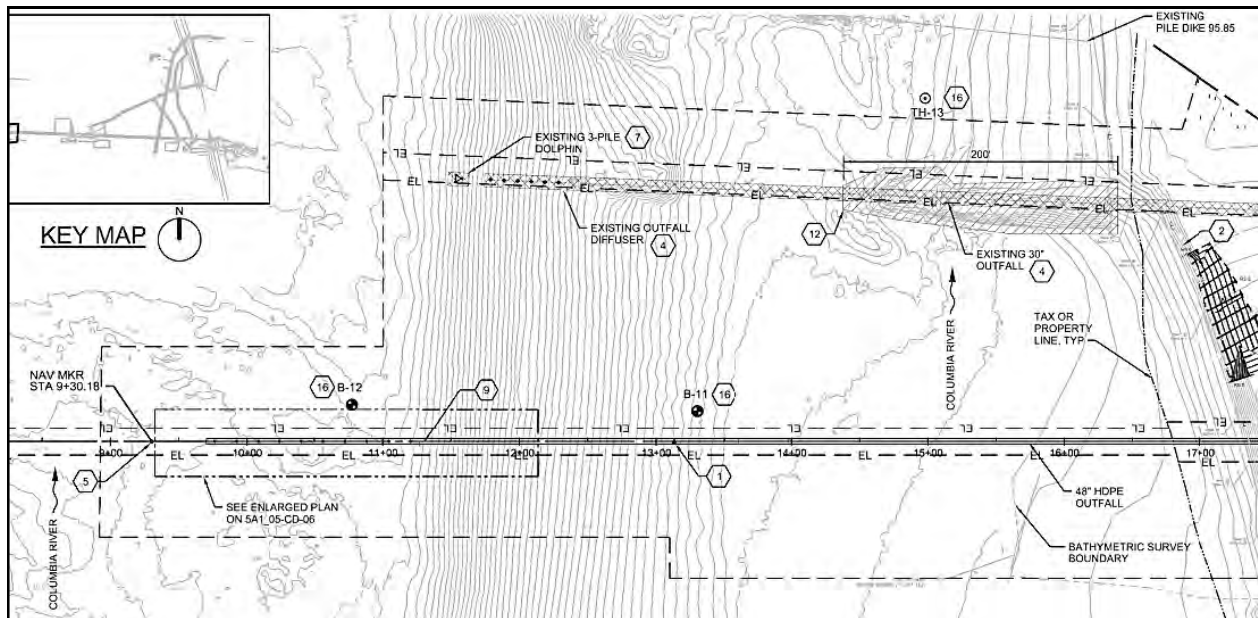
Source: Bathymetric Survey Report by Solmar Hydro, Inc. 2017

The new effluent pipeline from the SCTP will be a 48-inch-diameter HDPE pipe. The new 48-inch effluent pipeline will pass through a new onshore junction structure next to Lower River Road that will connect the existing 30-inch and new 48-inch effluent pipelines with the new river outfall and diffuser. The existing 30-inch effluent pipeline will remain in place to serve as a back-up pipeline for use if maintenance is

required on the new effluent pipeline. The new 48-inch-diameter HDPE outfall pipe will be constructed from the SCTP to the junction structure in 2022-2023. During the Outfall Mixing Performance Study in 2022, effluent will flow via the existing 30-inch effluent pipeline to the junction structure and through the new 48-inch outfall to the new diffuser in the river.

Figure 3 is an excerpt from the plan view in Drawing 5A1\_05-PP-01 showing the layout of the new outfall and diffuser and the original outfall. Appendix A provides seven selected drawings from the Contract Provisions and Plans for the Phase 5A Project: Package 1 – Salmon Creek Treatment Plant Columbia River Outfall (Jacobs, 2021).

**Figure 3. Plan View Drawing Excerpt of SCTP Existing 30-inch Outfall and Diffuser and Replacement 48-inch Outfall and Diffuser in the Columbia River**



Source: Phase 5A Final Design Drawings of Salmon Creek Treatment Plant Columbia River Outfall (Jacobs, 2021)

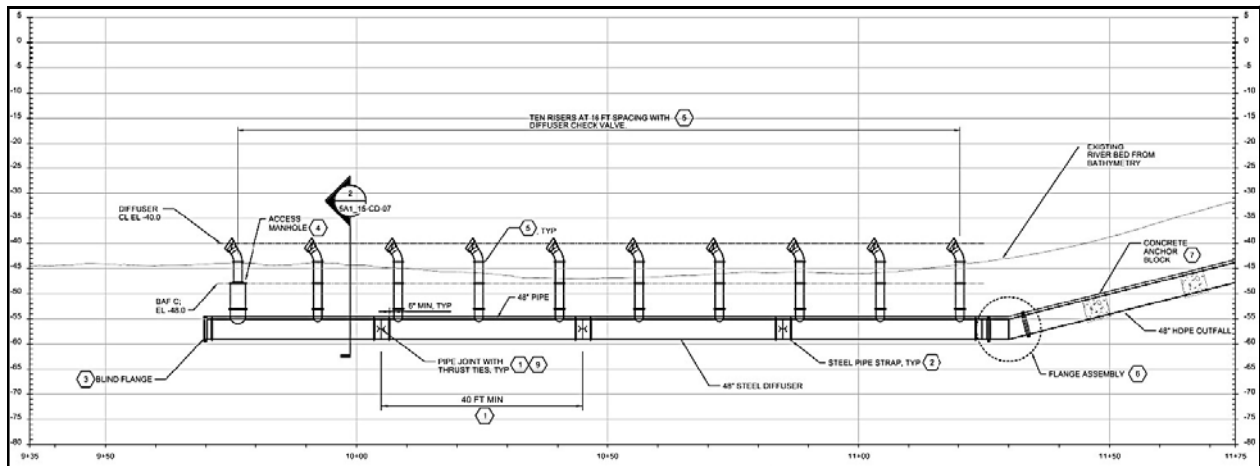
The new SCTP outfall extends approximately 750 feet offshore from the east riverbank and the 144-foot-long diffuser section is located offshore (west) of the riverbed slope in the deeper river channel. The new 48-inch-diameter HDPE outfall pipe is buried under the riverbed and the outfall pipe changes to steel pipe at the start of the 144-foot-long outfall diffuser pipe section. The diffuser section is a horizontal pipe with a burial depth of 6 to 8 feet over the pipe crown. The outfall diffuser consists of 10 concrete-coated vertical steel riser pipes that extend above the riverbed. The first 9 riser pipes consist of 20-inch inside-diameter (ID) pipe sections, and the last offshore riser consists of a 36-inch access manhole with 20-inch riser flanged to the top. All 10 risers are flanged to elastomeric 45-degree integrated elbows fitted with 20-inch Tideflex elastomeric check valve ports.

Figure 4 is an excerpt from the plan view in Drawing 5A1\_15-CD-06 showing a profile of the new 10-port outfall diffuser (refer to drawings in Appendix A). The outfall diffuser check valves are installed with the port centerline at an elevation of -40.0 feet (National Geodetic Vertical Datum of 1929 [NGVD29]). The water depth of the diffuser ports centerline is 42.1 feet at the 7Q10 (seven-day period of lowest river flow for a 10-year return period) low river flow conditions. This minimum water depth at the diffuser ports is applied in the definition of the mixing zone boundaries in accordance with Section 173-201A-400 (WAC) in the Water Quality Standards for Surface Waters of the State of Washington. The SCTP outfall diffuser is located where tidal-induced flow reversals dominate the river flows, as documented in the Engineering Report for the Phase 5A Project – Columbia River Outfall and Effluent Pipeline (CH2M, 2018), and therefore Ecology’s estuary mixing zone is applied to the original diffuser and the new outfall diffuser. In

## Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study Plan

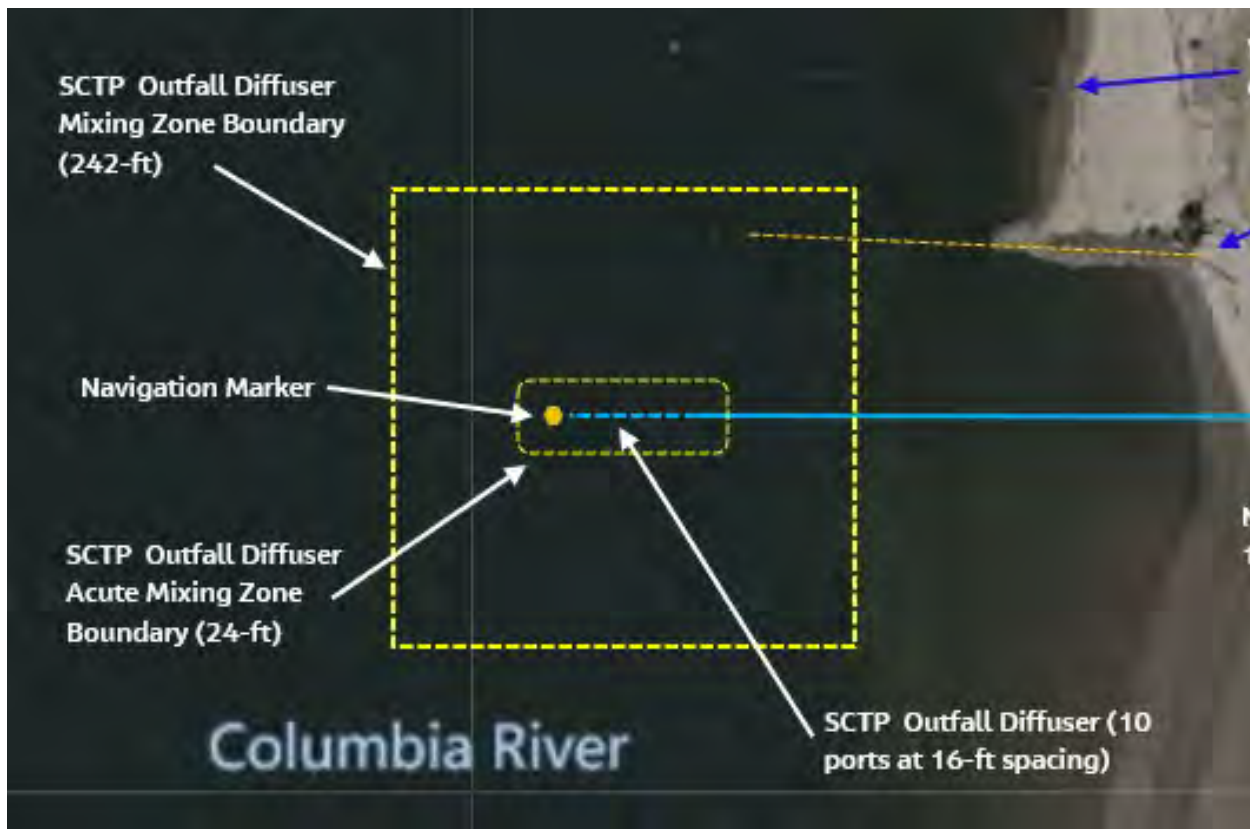
accordance with the Mixing Zone rules in WAC 173-201A-400 the chronic mixing zone boundary for the new outfall diffuser is 242 feet in any horizontal direction from the diffuser ports, and the acute mixing zone boundary is 24 feet from the diffuser ports. Figure 5 provides a scaled image of the new SCTP outfall diffuser and the acute and chronic mixing zone boundaries in the Columbia River. These acute and chronic mixing zone boundaries will be the focal points of field measurements of dilutions to allow for direct comparisons to model-predicted dilutions.

**Figure 4. Profile View Drawing Excerpt of SCTP New Outfall Diffuser in the Columbia River**



Source: Phase 5A Final Design Drawings of Salmon Creek Treatment Plant Columbia River Outfall (Jacobs, 2021)

Figure 5. SCTP New Outfall and Diffuser Location and Chronic and Acute Mixing Zone Boundaries in the Columbia River



Source: Jacobs Mapping-Maxar Imagery, June 2021

## 2.2 Project Purpose and Requirements

The Salmon Creek Treatment Plant (SCTP) effluent pipeline and outfall in the Columbia River are being improved with construction of a new pipeline and outfall (Phase 5A Project). The District submitted the Engineering Report for the Phase 5A Project – Columbia River Outfall and Effluent Pipeline to Ecology for approval in March 2018. Ecology issued their letter approving the Engineering Report on February 11, 2019, with specific comments and conditions for approval as follows:

- *Engineering Analysis* – “The outfall diffuser structure is well considered for the location, but mixing will need to be confirmed with a dye study after installation”; and
- *Impact on Mixing and Seasonal Mixing Zone Ratios* – “Final mixing zone ratios and seasonal mixing zone ratios (critical low-flow season tentatively proposed as May-Oct inclusively) have not been...agreed upon to date. After completion of construction, the District will need to submit a request for seasonal mixing zones [dilutions] if they want to enjoy less stringent limits in the non-critical seasons. This request would need to be supported with ambient and effluent flow data, and a mixing zone study (including dye study results) that is sufficient to support the determination of seasonal mixing zones at the critical conditions in each of the established seasons.”

In addition, the Endangered Species Act (ESA) Biological Opinion approval of the Phase 5A Project – Columbia River Outfall and Effluent Pipeline prepared by NOAA National Marine Fisheries Service and the U.S. Army Corps of Engineers (ACOE) includes the following terms and conditions:

- *Outfall Mixing Performance Study Report* – “Verify compliance with State water quality criteria, and verify that the outfall diffuser functions as designed, by performing a Field Tracer Performance Study



during the first low river flow season (September-October) following outfall construction. Use the field-measured dilutions to calibrate and validate the dilution modeling that serves as the basis for design. Use the calibrated model to predict dilutions under design river flows and effluent flows, as defined in the Washington State Department of Ecology's (Ecology) Permit Writers Manual and in the applicant's Phase 5A Project Engineering Report. Document the results of the Field Tracer Performance Study and dilution modeling in the Outfall Mixing Performance Study Report."

These requirements listed above provide the basis for conducting this Outfall Mixing Performance Study.

### 3. Project Objectives

The objectives of the Outfall Mixing Performance Study for the new SCTP Columbia River Outfall diffuser are to collect site-specific field measurements of the new SCTP outfall diffuser dilution performance, to generate dilution modeling results for the field study condition and critical low river flow conditions, to evaluate discharge compliance with water quality standards, and to produce a technical study report that documents the dilution performance of the new SCTP Columbia River Outfall diffuser under critical receiving water conditions during summer (low flow), winter, and spring runoff seasons.

The study will follow Ecology guidance for determining dilutions under critical receiving water conditions – as defined in WAC 173-201A-020 (Ecology, 2022), Tables VI-3 and VII-1 and in Appendix C of the Permit Writer's Manual: *Guidance for Conducting Mixing Zone Analyses* (Ecology, 2015). Further, the selection and application of dilution models will be consistent with the *Guidance for Conducting Mixing Zone Analyses* in Ecology's Permit Writer's Manual, and the validation and calibration of models using field tracer study will be consistent with Section 1.6.2 in the *Guidance for Conducting Mixing Zone Analyses*. Lastly, application of dilutions at the Acute and Chronic Mixing Zone boundaries will be done in accordance with Ecology's Permit Writer's Manual.

This Outfall Mixing Performance Study Plan describes how the outfall mixing study will approach the following activities: 1) collection of site-specific field measurements of the dilution performance of the new Columbia River Outfall under low river flow conditions, 2) accurate field measurements of receiving water characteristics and dilutions that will be used for calibration and validation of the dilution model used, 3) direct measurements of the duration and magnitude of reflux potential during tidal-induced flow reversals, 4) dilution modeling predictions for a range of seasonal discharge and tidal-influenced conditions (including summer-low flow, winter, and spring runoff seasons), and 5) an assessment of discharge compliance with State water quality chemical criteria and temperature standards. The study will be conducted using the estuary-based mixing zone boundary distances for the SCTP outfall diffuser (refer to Figure 5), in accordance with guidance provided in Ecology's Permit Writer's Manual.

To meet these objectives, this study will be completed by experienced personnel: 1) to develop accurate and defensible field measurements of the outfall diffuser performance, the mixing zone region, and river physical conditions for dilution modeling, 2) to analyze river flows and water surface elevations based on river flow records and measured river characteristics, and 3) to document the selection and application of an appropriate model to represent the dilution performance of the outfall. This Study Plan has been developed specifically to define the field measurements methodology necessary for this study to provide the elements defined in Ecology's Permit Writer's Manual, as well as to provide the dilution modeling objectives and approach.

## 4. Study Approach

The study approach for this Outfall Mixing Performance Study involves the collection of site-specific field measurements through a dye tracer study, and then using these data to develop accurate model predictions of discharge dilutions for the field-measured conditions and other seasonal low river flow conditions. The field-measured dilutions will also be used to compare and select the most appropriate dilution model (Visual Plumes or CORMIX) for application under a range of discharge and ambient conditions. Measured and model-predicted dilutions will be compared with the concentrations of effluent constituents discharged to assess compliance with State water quality standards.

Jacobs will perform the field study of the new Outfall 001 diffuser during low river flow in the late summer period (August–October). Since the discharge site is subject to tidal-induced flow reversals, the field study will target appropriate tides during August to early October. The field study will include the collection of site-specific physical measurements (e.g., current speed and direction, water column density profiles) near Outfall 001 and a 2-day dye tracer study of the outfall diffuser to represent the discharge dilutions during both ebb and flood tidal conditions. This approach assumes that the field tracer study is performed with a 28 to 34 hour long continuous dye injection into the effluent to allow for field measurements of tidal-induced reflux (plume overlap) at the outfall diffuser site. This two-day study approach was previously required by Ecology for the 2003 field tracer study of the existing SCTP outfall diffuser (CH2M HILL, 2004).

Jacobs will use a fluorescent, water soluble, biodegradable dye (Rhodamine WT) as the wastewater surrogate tracer because it can be accurately measured to 0.5 parts per billion (ppb). Based on the plant discharge flow, Rhodamine WT will be injected at a rate sufficient to produce a target discharge concentration of approximately 750 to 1,000 ppb. Assuming a practical dye detection limit of 1.0 to 2.0 ppb above background, the field team will be able to accurately measure dilutions at the acute and chronic mixing zone boundaries of the outfall diffuser. Initial dye measurements will be collected from the outfall pipe downstream of the dye injection site at the SCTP so that initial dye concentrations can be correlated with the field measurements.

Jacobs will perform the field study over a six-day period in August–October using an experienced four-person field team. Jacobs will provide all equipment and materials necessary for the field study, and a work vessel with DGPS navigation will be used for work on the river. Field equipment will be procured prior to the field study and transported to the project site by Jacobs personnel. The field study will include simultaneous measurements of ambient current speed and direction, water depth, and dye concentration during the 2-day period of tracer dye injection that corresponds with low river stage (a period of flood tide-induced flow reversals). This 2-day tracer study will provide direct measurements of the duration and magnitude of reflux potential during tidal-induced flow reversals by using dye measurement instruments at the outfall acute mixing zone and chronic mixing zone boundaries. Field-measured dilutions will be compared to model-predicted dilutions for the same conditions, and the most accurate and representative dilution model will be selected to apply in all modeling cases for a wide range of river flow conditions. The results of the field dye tracer study will be used to evaluate and resolve the dilutions of the SCTP outfall diffuser for evaluating discharge permit requirements.

Following the field study, the data will be processed, analyzed and summarized. Dilution modeling will then be performed using the receiving water data and SCTP effluent data that were collected. Dilution modeling analyses will first focus on the field tracer study conditions. The field-measured dilutions will be used to compare and select the correct dilution model for application with a range of discharge and ambient conditions. Available effluent chemistry data for SCTP will be used to assess the dilutions required for compliance with the acute and chronic chemical criteria. A study report will be prepared summarizing the Outfall Mixing Performance Study, including the field, dilution modeling, and supporting documentation, and the report will be submitted to Ecology in December of the study year.

## 5. Field Study Methods

The mixing performance study of the new SCTP outfall diffuser will include site-specific receiving water measurements and a field dye tracer study. Following completion of outfall construction, the field study will be conducted over a five or six-day period during August, September, or October, which corresponds with low Columbia River flows. The field study will be performed by Jacobs personnel experienced with dye tracer studies for comparable outfall projects.

### 5.1 Field Study Activities

The staging and activities timeline for the field study are summarized below:

1. Jacobs personnel will mobilize to the SCTP, hold a pre-study coordination meeting with SCTP personnel, review site access, safety, and security procedures, perform effluent and receiving water collections for dye standards preparation, and begin study preparations.
2. On the second day of the field study, Jacobs personnel will set up the dye injection, perform instrument calibrations, prepare and check all field equipment, install recording current meters near the Outfall 001 diffuser, perform dye study instrument testing, and conduct testing of the dye injection and initial measurement instrumentation and equipment.
3. On the third and fourth field days, Jacobs personnel will conduct field measurements of the outfall dye tracer performance study during daylight hours. The dye tracer study will involve continuous, metered dye injection into the effluent at the Outfall 001 effluent box, measurements of initial dye concentration downstream of the injection point, and water column measurements of dye concentration, temperature, and conductivity from a work vessel on the Columbia River. Dye tracer concentrations will be recorded at water column profile sites focused on the acute and chronic mixing zone boundaries during both study days (between approximately 0800 and 1800 hours each day). A differential GPS navigation system will be used to acquire and record vessel position to provide accurate tracking of the location of the dye and water column measurements. The current meter array will be retrieved and the dye injection will be ended at the conclusion of field dye measurements on the fourth day.
4. On the fifth day of the field study, Jacobs personnel will download the current meter and CTD data, conduct post-study instrument calibrations, clean and pack up equipment at the dye injection site, and demobilize from the SCTP facility.

### 5.2 Field Instrumentation and Equipment

The specific details of the instruments, equipment, and materials to be provided by Jacobs for use in the field dye tracer study are listed below and in Table 1:

1. Nortek Aquadopp single-point current meters deployed on a taut-line cable array with the following components: subsurface flotation for buoyancy, a surface marker buoy, an acoustic release, and a clump anchor. The current meters will be used to measure ambient current speed and direction at three discrete water depths, including pressure (instrument depth) and temperature in the water column near the Outfall 001 diffuser. Measurements will be recorded every 10 minutes for the period of deployment for a minimum 48-hour period.
2. SeaBird Electronics SBE-19 conductivity, temperature, and depth (CTD) profiler with integrated Turner Designs SCUFA fluorometer (or equivalent) for dye tracking measurements. These instruments will be deployed from the work vessel to record vertical water column profiles during the field tracer study period. The SBE-19 CTDs are factory-calibrated units and the SCUFA (or equivalent) instruments will be calibrated in the SCTP laboratory prior to and following the field tracer study.

3. Turner Designs Model 10-AU field fluorometer set up for flow-through operation and used to measure initial dye concentrations after injection at the plant (alternatively, it can be used as a backup instrument to the SCUFA on the SeaBird SBE-19 used for the receiving water dye measurements).
4. Turner Designs SCUFA fluorometer (or equivalent) used to measure initial dye concentrations after injection at the plant (as a backup instrument).
5. Masterflex peristaltic pumps for calibrated dye injection into the plant effluent.
6. Masterflex (or equivalent) peristaltic or submersible pumps for pumping effluent from the outfall to measure initial dye concentrations and/or for use in pumping from a submerged intake hose mounted on the CTD (if used during the field dye tracer study).
7. Rhodamine WT dye (approximately 15 gallons) to allow for a maximum 30-to-34-hour injection period in order to achieve target dye concentration of 0.8 ppm in the discharge effluent.
8. Work vessel (21- to 24-foot) with survey-grade differential GPS navigation system.
9. Field laptop computers used to perform instrument setup, calibrations, and data logging.

**Table 1. Field Equipment and Instrumentation for the Outfall Mixing Performance Study**

Equipment Item	Purpose	Number of Units	Accuracy Standard
SeaBird Electronics SBE-19 PlusV2 CTD	Ambient measurement of conductivity, temperature, and depth	2	Conductivity: $\pm 0.001$ S/m Temperature: $\pm 0.01^\circ$ C Depth: $\pm 0.05$ m
Turner Designs SCUFA submersible fluorometer	Measurement of fluorescent dye concentration in the receiving water	2	Minimum dye detection to 0.20 ppb*
Turner Designs 10-AU field fluorometer	Measurement of fluorescent dye concentration in effluent or receiving water (SCUFA backup instrument)	1	Minimum dye detection to 0.10 ppb*
Nortek Aquadopp current meter	Measurement of <i>in-situ</i> current velocity (speed & direction), temperature, and instrument depth (pressure)	3	Speed: $\pm 0.5$ cm/sec Temperature: $\pm 0.01^\circ$ C Depth: $\pm 0.5\%$ of full scale
Trimble GNSS Differential GPS	Vessel positioning & precision navigation	2	$\pm 0.2$ m
MasterFlex peristaltic pump	Used for dye injection into plant effluent at a constant flow rate	3	0.2 mL/min
Positive displacement and/or peristaltic pump	Pump receiving water through the 10-AU fluorometer, if needed	2	1 mL/min (minimum delivery rate of 3 L/min)

**Notes:**

S/m = Siemens per meter; C = Centigrade; m = meter; ppb = parts per billion; cm/sec = centimeters per second; mL/min = milliliters per minute; L/min = liters per minute.

\*An accuracy of 0.1 ppb is conservatively assumed for calculation purposes; actual instrument accuracy is 0.04 ppb.

### 5.3 Quality Assurance/Quality Control

The Quality Assurance/Quality Control (QA/QC) objective for the field study is to collect measurements of wastewater dilution and receiving water conditions that are of known and acceptable quality. The following requirements will be followed to achieve the objectives of this study:

- Provide verifiable dye injection rates and initial dye concentrations;
- Develop accurate effluent and river dye standards for instrument calibrations using volumetric glassware;

- Provide verifiable equipment calibration with pre- and post-study calibrations of all fluorometric instrumentation;
- Maintain accurate vessel and instrument positioning for measurements;
- Provide equipment redundancy (backup equipment); and
- Examine the dye injection site and downstream sample collection site to verify that proper mixing occurs before initial effluent/dye samples are collected.
- Follow Jacobs standard practices for technical QA/QC review of all deliverables.

This study plan has been developed as the basic element of quality assurance and control activities for the field study. A field operations plan will also be developed and discussed with District and SCTP personnel prior to the field study to define the detailed study schedule, communications, personnel assignments, security considerations, and field safety procedures. A Project Health, Safety & Environmental Plan (PHSEP) will be prepared by Jacobs and reviewed by SCTP personnel and all subcontractors prior to the commencement of the field study.

### 5.4 Equipment Calibration

All equipment will be obtained prior to the field dye tracer study. Each instrument will be checked and calibrated upon its arrival to confirm that it is in proper working condition. Each instrument will also be calibrated immediately prior to the beginning of the dye study and, when appropriate, following completion of the study. The calibration methods for each type of instrument to be used in the study are briefly described below.

**Current meters** – These instruments are calibrated by the manufacturer according to their specifications. Calibration results will be used during data reduction and the calibration history will be incorporated for the units used in the study.

**CTD instruments** – CTDs will be calibrated to the manufacturer's specifications before conducting the dye study. Calibration results will be used during data reduction and calculation of the water column density structure. Calibration history will be incorporated for the unit that will be used.

**Fluorometers** – Fluorometers (Turner Designs SCUFA and 10-AU field fluorometer) will be calibrated according to the manufacturer's specifications such that they measure total dye concentration in the appropriate range for their use. Measurements in the receiving water will have a range of 1 to 100 ppb; effluent initial dye measurements will have a range of 500 to 1,500 ppb. Two types of dye standards will be prepared with the dye used in the study--one set of standards using effluent from the plant, and the other set of standards using background river water. River water will be collected from the study site prior to the dye study, and fluorometers will be calibrated before use in the field. Immediately following the dye study, a second set of fluorometer calibration measurements will be recorded using effluent, dye, and background water. The second set of calibration measurements will be compared to the pre-study calibration data after correction for temperature. The pre-and post-study calibration curves will be used to correct or adjust the observed dye concentration and dilution.

**Dye pumps** – The dye pumps will be calibrated at the locations where they will be used during the dye study. The pumps will be equipped with a micrometer control to accurately determine pumping rate. The flow rate scale will be calibrated with the dye at ambient temperature by repeatedly discharging dye into a graduated cylinder for a fixed period of time at various flow rate scale settings. According to the manufacturer, a reproducible metering accuracy of greater than one (1) percent can be expected when handling medium-viscosity fluids if fluid differential pressure, fluid viscosity, and electric line voltage remain constant. To verify that none of these factors is affecting expected dye flow rates during dye injection, dye flow rates will be verified and logged prior to the start of dye injection and at 1-hour intervals during the field study.

## 6. Dilution Modeling

### 6.1 Modeling Objective and Approach

Modeling will be used to predict wastewater dilutions based upon the field performance study results and receiving water conditions. The field-measured dilutions will be first be directly compared to modeling results using Visual Plumes (DKHW and UM3 models) and CORMIX 2 dilution models. The basis for the model selection will be thoroughly documented. Sensitivity model runs will be performed to select the most representative model, and the remaining modeling will be conducted using the selected model. Following model selection, measured receiving water and effluent conditions will be used to calibrate (validate) the model predictions.

After modeling the field-measured flow conditions, modeling will be conducted for seasonal critical river and tidal conditions, in accordance with Section 8 in Appendix C of the Permit Writer's Manual: *Guidance for Conducting Mixing Zone Analyses* (Ecology, 2015). The objective of the modeling evaluation is to develop plausible predictions of the dilution performance of the outfall diffuser using appropriate effluent flows and temperatures for the critical river flow conditions modeled.

### 6.2 Model Selection

Based on evaluation of available dilution models, the following will be considered for use in modeling the new SCTP Outfall 001 diffuser: 1) Visual Plumes, a model interface and file manager that includes both the DKHW and UM3 dilution models (Frick et al., 2000), and 2) CORMIX (Doneker and Jirka, 2007). The dilution model selection and approach will be developed through screening model runs and review with a senior modeler. One of these models will be applied--depending upon which is demonstrated to best represent the discharge--to simulate the outfall dilution and plume behavior under a range of conditions.

Each of these modeling systems and models are discussed in more detail in the following sections.

#### 6.2.1 Visual Plumes

Visual Plumes is an update of the PLUMES modeling system developed by the National Exposure Research Laboratory (NERL) of the U.S. Environmental Protection Agency, EPA (Baumgartner et al., 1994). Visual Plumes (VP) is a Windows-based computer application that supersedes the DOS PLUMES mixing zone modeling system. VP simulates single and merging submerged plumes in arbitrarily stratified ambient flow and buoyant surface discharges. VP supports several dilution models, including the DKHW model based on UDKHDEN (Muellenhoff et al., 1985), the surface discharge model PDS (Shirazi and Davis, 1974), the three-dimensional UM3 model based on UM and UMERGE, and the NRFIELD model based on RSB (Roberts, Snyder, & Baumgartner; 1989a, 1989b, 1989c). The Brooks equations (Brooks, 1960) are included in VP for predicting subsequent dilution and plume behavior in the far-field.

The time-series file linking capability of VP provides a way to simulate outfall dilution performance over longer periods of time. Most effluent and ambient variables can be input from files that store data that change over time (i.e., non-steady state). This is the heart of its pollutant-buildup capability, which is designed for one-dimensional tidal rivers or estuaries to estimate background pollution from the source in question. The time-series file linking capability of VP is provided by summary graphics (i.e., graphics focusing on overall performance indicators, like mixing zone dilutions or concentrations).

The following sections briefly describe the capabilities of the individual models within the Visual Plumes model interface that will be considered for use in the outfall mixing performance study.

### **6.2.1.1 DKHW**

DKHW is a three-dimensional mathematical model that considers variable ambient receiving water current and density profiles with depth. The model uses a fourth-order integration routine along the centerline of the effluent plume to trace its position and average dilution over time (i.e., Eulerian fluid mechanics). The model calculates the average dilution, plume trajectory, and trapping level for submerged, buoyant plumes from a single diffuser or single row of multiple diffuser ports in either stagnant or flowing environments. DKHW is sensitive to water column density gradients and ambient velocities. Jet integral plumes models such as DKHW provide relatively conservative dilution estimates (i.e., predicting lower dilutions than actually achieved), which are based on comparisons of field and dilution modeling results.

The output of each DKHW model case provides sequential calculation of both dilution and plume distance from the port until initial (near-field) dilution is complete; this output can be used to summarize the dilutions and plume depth at the acute criteria zone boundary and at completion of initial dilution. DKHW uses a far-field dilution algorithm (the Brooks method) to develop subsequent dilution predictions, particularly those at the mixing zone boundary. These equations are retained in VP to simulate far-field plume behavior.

### **6.2.1.2 UM3**

UM3 is a three-dimensional mathematical model that calculates the flux-average dilution, plume trajectory, and trapping level for submerged, buoyant plumes from a single diffuser or single row of multiple diffuser ports in either stagnant or flowing environments. The UM3 model analyzes effluent discharges by tracing the position of the plume through its trajectory path (i.e., Lagrangian fluid mechanics). The model approximates the plume development by using single-step integrations over discrete time increments.

The output of each UM3 model case provides sequential calculation of both dilution and plume distance from the discharge port(s) until initial dilution is complete; model outputs can be used to predict the dilutions and plume depth at the completion of initial dilution and at various distances downstream of the discharge. As previously stated, the VP interface contains far-field dilution algorithms based on equations developed by Brooks. The far-field dilutions may be used to develop predicted dilutions at the chronic mixing zone boundaries under some river conditions.

## **6.2.2 CORMIX**

The CORMIX modeling system, developed for the U.S. EPA at Cornell University, is a rule-based expert system that classifies the interaction of discharges and the receiving water (Doneker and Jirka, 2007). The program makes many of the decisions for the model user based on the input parameters that are provided. The system was designed for the non-specialist model user so that plume predictions could be made without having prior knowledge about dilution modeling and mixing processes. The CORMIX models use empirically-derived curve fit equations to make dilution predictions. These equations are selected from length scales that are determined from parameters input by the user.

CORMIX 2, which is designed to simulate submerged, multi-port line diffusers, is the module that will be considered for application in this study. The developers of CORMIX also incorporated a three-dimensional jet integral model (CORJET) for near-field dilution predictions. This jet integral model is similar to DKHW in VP and provides similar near-field prediction results; however, CORJET is accessible only when CORMIX has determined that the discharge conditions are hydrodynamically 'stable'. More typically, CORMIX 2 simplifies near-field mixing processes and represents a line of individual discharge ports as an equivalent slot (or line source) of momentum and buoyancy. This occurs when CORMIX predicts that an unstable discharge exists, and under these conditions mixing is based on the plume characteristics after plumes from individual diffuser ports have merged.



### 6.3 Modeling Conditions and Assumptions

Dilution modeling analyses will be developed for existing and projected future SCTP effluent flows under critical ambient conditions as specified in Ecology's Permit Writer's Manual, and for consistency with Ecology's *Guidance for Conducting Mixing Zone Analyses* document.

A summary of the preliminary model input parameters that will be used to develop the discharge scenarios are provided, as follows:

- **Ambient current speed:** based on a frequency distribution of site-specific measured currents; the calculated 10<sup>th</sup> and 90<sup>th</sup> (acute criteria) and 50<sup>th</sup> (chronic criteria) percentile current speeds under ebb and flood tide conditions;
- **Discharge (water) depth:** for tidally-influenced freshwater, the critical depth for acute aquatic life is mean lower low water (MLLW) during the 7Q10 low flow period; the critical depths for chronic aquatic life are MLLW during 7Q10 low flow (aquatic life), low 30Q5 flow (human health, non-carcinogens) or harmonic mean flow (human health, carcinogens);
- **Ambient water temperature:** the 90<sup>th</sup>-percentile values to evaluate acute and chronic criteria and the 50<sup>th</sup>-percentile value to evaluate human health carcinogen and non-carcinogen criteria conditions under dry/wet seasons and for ebb/flood tidal conditions;
- **Number and spacing of diffuser ports:** ten (10) ports at 20 feet on center;
- **Diffuser port diameter:** 16-inch (i.e., 20-inch elastomeric check valves);
- **Port discharge angles:** directed downstream at a 45 degrees angle relative to the diffuser axis and oriented downstream (to the north); ports directed upward at a vertical angle of 45 degrees;
- **Port elevation (height above bottom):** approximately 4 to 5 feet (*to be confirmed following completion of outfall construction*);
- **Effluent flow rate:** based on SCTP effluent monitoring reports from the last 3 years, Phase 5 projected, and projected 2040 effluent flows; the highest daily maximum for acute conditions, highest monthly maximum for chronic and human health non-carcinogen criteria conditions, and annual average for human health carcinogen criteria conditions;
- **Effluent temperature:** based on SCTP effluent monitoring reports from the last 3 years; the 99<sup>th</sup>-percentile value to evaluate acute criteria, the 95<sup>th</sup>-percentile value to evaluate chronic criteria, and the 50<sup>th</sup>-percentile value to evaluate human health carcinogen and non-carcinogen criteria conditions;
- **Acute Zone Boundary:** 24 feet in any spatial direction from any discharge port; and
- **Chronic Mixing Zone Boundary:** 242 feet in any direction from the diffuser.

The results of the dilution modeling will include the following: predicted dilutions, plume dimensions (depth and width), and model-predicted temperature at the acute and chronic mixing zone boundaries, and a comparison of model-predicted versus field-measured dilutions during the specific conditions of the field study. The model output files will be included in appendices to the Outfall Mixing Performance Study Report.

## 7. Data Analysis and Study Report

The data collected during the field dye tracer study will be compiled and analyzed to define ambient current velocities at the outfall diffuser site under low river flow conditions, the background receiving water temperature and conductivity (including any tidally-influenced variations), and effluent flow and temperature. These data will be used in developing inputs for the dilution modeling. An evaluation of discharge compliance with water quality chemistry and temperature standards will be developed and included in the report.

A draft Outfall Mixing Performance Study Report will be prepared that summarizes the results of the field data collections, dilution modeling, and the evaluation of compliance with water quality standards. Water column temperatures, depths, and current velocities will be presented in either tabular or graphical formats. The draft Outfall Mixing Performance Study Report will be submitted to the District for review. Following review and completion, the final Outfall Mixing Performance Study Report will be submitted by the District to Ecology.

## 8. References

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# **Appendix A**

## **Selected Drawings of Salmon Creek Treatment Plant New Outfall and Diffuser**



# CONTRACT PROVISIONS AND PLANS

FOR THE CONSTRUCTION OF:  
**Phase 5A Project: Package 1 – Salmon Creek Treatment Plant  
Columbia River Outfall**

VOLUME II – PLANS

Discovery Clean Water Alliance Project No. 92-2015-0023

A Discovery Clean Water Alliance Capital Project with  
Clark Regional Wastewater District as Administrative Lead



PREPARED FOR:



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PREPARED BY:

**JACOBS**<sup>®</sup>

JACOBS ENGINEERING GROUP, INC.  
2020 SW FOURTH AVENUE, 3<sup>rd</sup> FLOOR  
PORTLAND, OREGON 97201

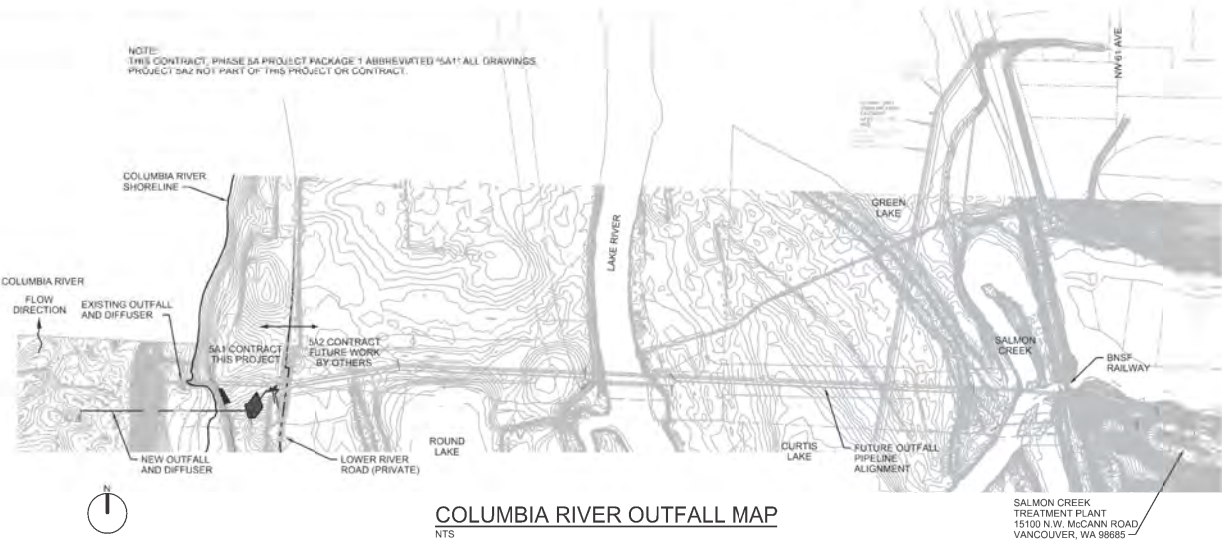
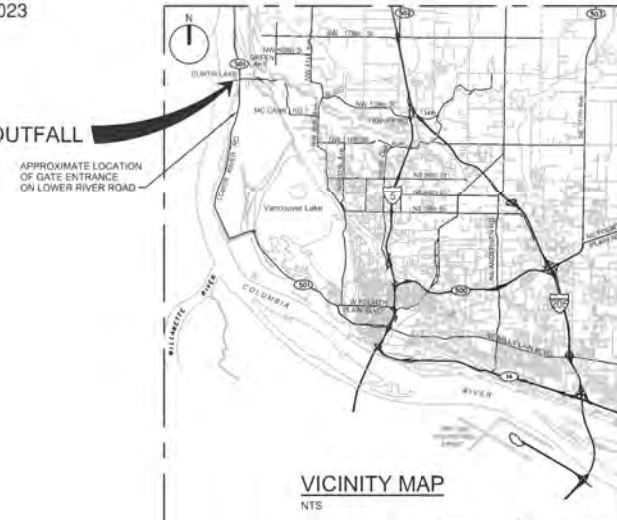
JANUARY 2021

# SALMON CREEK TREATMENT PLANT (SCTP) PHASE 5A PROJECT: PACKAGE 1 COLUMBIA RIVER OUTFALL

DISCOVERY CLEAN WATER ALLIANCE PROJECT #92-2015-0023

## BID DOCUMENTS JANUARY 2021

COLUMBIA RIVER OUTFALL



NOTE:  
THIS CONTRACT, PHASE 5A PROJECT PACKAGE 1 ABBREVIATED "5A1" ALL DRAWINGS  
PROJECT 5A2 NOT PART OF THIS PROJECT OR CONTRACT.

**ALLIANCE BOARD OF DIRECTORS:**  
**JULIE OLSON**, CLARK COUNTY  
**NORM HARKER**, CLARK REGIONAL WASTEWATER DISTRICT  
**RON ONSLOW**, CITY OF HOOD RIVER  
**SHANE BOWMAN**, CITY OF BATTLE GROUND



**JACOBS**  
2020 SW 4TH AVE #300  
PORTLAND, OR 97201



JACOBS PROJECT MANAGER	ALLIANCE CAPITAL PROJECT MANAGER	ALLIANCE ADMINISTRATIVE LEAD
J. D. Robin Krause	Dale Lough	John M. Peterson
ROBIN KRAUSE	DALE LOUGH	JOHN M. PETERSON
DATE	DATE	DATE

**UTILITY CONTACTS**  
 WATER: CLARK PUBLIC UTILITIES  
 GAS: NW NATURAL  
 ELECTRICAL: CLARK PUBLIC UTILITIES

(360) 592-8022  
 (503) 226-4211  
 (360) 592-3000



DISPUBLISHED  
ON JANUARY 22, 2021

NO.	DATE	OR	REVISION	BY
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Project ID: 2015-0023  
 SCTP 5A1, Columbia River Outfall  
 Discovery Clean Water Alliance  
 Clark County, Washington

**JACOBS**  
 GENERAL  
 COVER, SITE MAP AND  
 LOCATION MAP

VERIFY SCALE  
 3/8" = 1' (SEE PAGE 15)  
 1" = 100' (SEE PAGE 15)

DATE:	JANUARY 2021
PROJ:	663264
DWG:	5A1_01-G-01
SHEET:	1 of 53















## **B-2. Ecology Mixing Zone Study Requirement Checklist**





# Appendix B-2.

## Ecology Mixing Zone Study Requirement Checklist

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This Appendix identifies where Ecology's required information for mixing zone studies can be found within this *Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study* report. Requirements for mixing zone studies are listed in Section 13 of Appendix C to Ecology's *Permit Writer's Manual*. Table B-2 provides a checklist of the elements listed in Section 13 and the location of each in this report.

### Mixing Zone Study Requirement Checklist

**Table B-2. Requirements for Mixing Zone Studies and Information Sources in this Report**  
*Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study*

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ID#	Element	SCTP Mixing Performance Study Report Section
<b>Appendix C – Permit Writer's Manual (Ecology, 2018)</b>		
<b>13.1</b>	<b>General Requirements</b>	
1	A statement confirming that AKART has been applied by the entity seeking a mixing zone.	Sections 1.1.1 and 4 (Water Quality)
2	A description of the maximum size of the mixing zone allowed under the regulations.	Section 1.1.3
3	An analysis showing how mixing zones have been minimized based on using the lowest dilution from hydraulic limitation, width limitations, distance limitation and that predicted by the model.	Sections 3.1, 3.2, and 3.3
4	<p>An evaluation showing no environmental harm from the proposed diffuser location and requested mixing zone. This should include a conclusion that there will be no damage to the ecosystem, nor loss of sensitive habitat; and that there will be no adverse public effects, and no interference with existing or characteristic uses of the waterbody.</p> <p>Mixing zone analyses for new outfalls or reconstructed outfalls that are located on state-owned aquatic lands, or where the outfall pipe runs through state-owned aquatic lands, should describe how the proponent has contacted the Department of Natural Resources (DNR) to determine potential habitat issues and mitigation requirements. Include a copy of any reports or correspondence with DNR documenting the results of the determination.</p>	<p>Section 4 in Report and Section 4.4 and Appendix G in the 5A Engineering Report (Jacobs, March 2018)</p> <p>Clark County Public Works Aquatic Lands Easement (No. 51-076959) amended by DNR on 4/1/2015.</p>
5	A clear description of the critical conditions used for dilution factors	Section 2.4.5 and 3.3

ID#	Element	Engineering Report Section
6	For overlapping mixing zones ensure that the maximum mixing zone size limitations are not exceeded, while also ensuring no environmental harm.	Not applicable
7	For extended mixing zones, if proposed, must ensure that altering the size increases protection, volume of effluent is more beneficial than removing it, that the effluent is necessary for social or economic development for the area, and the discharge existed prior to 1992.	Not applicable
<b>13.2</b>	<b>Diffuser Information</b>	
1	Location, orientation, description and dimension of diffusers and ports Latitude, longitude, and/or river mile Single port or multiport Number of ports, port spacing and port diameter Diffuser lengths and angles	Sections 1.1.2, 1.1.3, 3.2 and Appendix A (As-built Drawings)
2	Port elevation above bottom and the depth of the diffuser/port below water surface based on 7Q10 flow (for rivers)	Section 3.2.1 and Appendix A (As-built Drawings).
3	Plan view maps showing the mixing zone size and dimensions in relation to the diffuser	Figure 2-1
4	Schematic of waterbody cross-section, showing diffuser location in relation to shoreline and bottom	Figures 1-4, 1-6, and 2-1. Appendix A (As-built Drawings).
5	Report on the integrity of the diffuser and the ports being modeled.	Section 2.2, 3.2.2 and Post-construction Inspection Report (TBD)
<b>13.3</b>	<b>Discharge Characteristics</b>	
	Maximum daily flows (acute) or maximum monthly averages (chronic)	Section 2.4.1
	Discharge density (temperature and salinity)	Sections 2.4.2 and 3.3.1
	Pollutant characteristics, human carcinogens, non-carcinogens, aquatic life toxicity, etc.	Section 4 (Water Quality Compliance Evaluation)
<b>13.4</b>	<b>Ambient Water Characteristics</b>	
	Critical stream flow statistics (7Q10, 30Q5, harmonic flow)	Section 2.3.5 and Section 3.3.1
	Velocity profile in the vicinity of the diffuser	Section 2.3.4 and Appendix C
	Temporal density (temperature and salinity) profiles near the diffuser	Appendix D tables.
	Manning's roughness coefficient, if used.	Not used
	Schematic of cross-section showing channel width, depth and location of diffuser	Section 2.3.3 and Appendix A.

<b>ID#</b>	<b>Element</b>	<b>Engineering Report Section</b>
13.5	<b>Model</b>	
	Model selection and application discussion.	Sections 3.1.1, 3.1.2 & 3.2
	Description of mixing and plume dynamics (nearfield, farfield, tidal buildup/reflux)	Sections 2.2.1, 2.2.2, and Appendix D Table.
	Sensitivity analysis	Section 3.2
	Calibration to empirical data (tracer studies), if necessary	Section 3.2
	Provide model output and summary table of results	Section 3.3 and Appendix E (Dilution Modeling Input and Output)



**Appendix C**  
**Current Measurements Data**



**Table C-1**  
**Data Record for the Upper Current Meter in the Columbia River, September 20-22, 2022**  
**Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study**

<u>Date</u>	<u>Time, PDT</u> <u>(hh:mm:ss)</u>	<u>Depth</u> <u>(meters)</u>	<u>Speed</u> <u>(m/sec)</u>	<u>Direction</u> <u>(deg. mag.)</u>	<u>Tide</u> <u>Condition</u>
9/20/2022	14:40	5.00	0.12	161	flood
9/20/2022	14:50	5.07	0.09	166	flood
9/20/2022	15:00	5.12	0.10	167	flood
9/20/2022	15:10	5.13	0.04	170	flood
9/20/2022	15:20	5.16	0.01	49	ebb
9/20/2022	15:30	5.17	0.03	338	ebb
9/20/2022	15:40	5.17	0.06	333	ebb
9/20/2022	15:50	5.17	0.10	340	ebb
9/20/2022	16:00	5.17	0.16	347	ebb
9/20/2022	16:10	5.16	0.19	348	ebb
9/20/2022	16:20	5.16	0.21	349	ebb
9/20/2022	16:30	5.14	0.23	352	ebb
9/20/2022	16:40	5.14	0.25	347	ebb
9/20/2022	16:50	5.13	0.28	347	ebb
9/20/2022	17:00	5.11	0.37	348	ebb
9/20/2022	17:10	5.10	0.38	347	ebb
9/20/2022	17:20	5.09	0.39	341	ebb
9/20/2022	17:30	5.08	0.46	350	ebb
9/20/2022	17:40	5.08	0.49	344	ebb
9/20/2022	17:50	5.06	0.47	348	ebb
9/20/2022	18:00	5.05	0.44	348	ebb
9/20/2022	18:10	5.05	0.53	340	ebb
9/20/2022	18:20	5.03	0.49	350	ebb
9/20/2022	18:30	5.02	0.51	344	ebb
9/20/2022	18:40	5.00	0.49	348	ebb
9/20/2022	18:50	4.98	0.46	349	ebb
9/20/2022	19:00	4.96	0.50	347	ebb
9/20/2022	19:10	4.94	0.49	351	ebb
9/20/2022	19:20	4.92	0.46	347	ebb
9/20/2022	19:30	4.92	0.48	346	ebb
9/20/2022	19:40	4.90	0.49	347	ebb
9/20/2022	19:50	4.87	0.44	345	ebb
9/20/2022	20:00	4.86	0.41	346	ebb
9/20/2022	20:10	4.85	0.42	345	ebb
9/20/2022	20:20	4.84	0.41	348	ebb
9/20/2022	20:30	4.84	0.47	350	ebb
9/20/2022	20:40	4.83	0.44	350	ebb
9/20/2022	20:50	4.85	0.48	347	ebb
9/20/2022	21:00	4.82	0.44	347	ebb
9/20/2022	21:10	4.81	0.39	351	ebb
9/20/2022	21:20	4.81	0.41	349	ebb

**Table C-1**  
**Data Record for the *Upper* Current Meter in the Columbia River, September 20-22, 2022**  
***Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study***

<u>Date</u>	<u>Time, PDT</u> <u>(hh:mm:ss)</u>	<u>Depth</u> <u>(meters)</u>	<u>Speed</u> <u>(m/sec)</u>	<u>Direction</u> <u>(deg. mag.)</u>	<u>Tide</u> <u>Condition</u>
9/20/2022	21:30	4.81	0.41	351	ebb
9/20/2022	21:40	4.83	0.46	348	ebb
9/20/2022	21:50	4.82	0.39	353	ebb
9/20/2022	22:00	4.82	0.36	352	ebb
9/20/2022	22:10	4.83	0.28	350	ebb
9/20/2022	22:20	4.85	0.27	347	ebb
9/20/2022	22:30	4.86	0.20	0	ebb
9/20/2022	22:40	4.89	0.21	352	ebb
9/20/2022	22:50	4.92	0.18	355	ebb
9/20/2022	23:00	4.94	0.15	347	ebb
9/20/2022	23:10	4.98	0.06	12	ebb
9/20/2022	23:20	5.01	0.02	2	ebb
9/20/2022	23:30	5.04	0.03	16	ebb
9/20/2022	23:40	5.07	0.04	125	flood
9/20/2022	23:50	5.11	0.05	151	flood
9/21/2022	0:00	5.14	0.12	178	flood
9/21/2022	0:10	5.18	0.15	174	flood
9/21/2022	0:20	5.21	0.19	171	flood
9/21/2022	0:30	5.23	0.16	166	flood
9/21/2022	0:40	5.26	0.16	165	flood
9/21/2022	0:50	5.29	0.16	170	flood
9/21/2022	1:00	5.32	0.17	171	flood
9/21/2022	1:10	5.34	0.14	170	flood
9/21/2022	1:20	5.36	0.16	168	flood
9/21/2022	1:30	5.38	0.11	179	flood
9/21/2022	1:40	5.40	0.09	176	flood
9/21/2022	1:50	5.40	0.09	173	flood
9/21/2022	2:00	5.41	0.01	59	ebb
9/21/2022	2:10	5.44	0.01	346	ebb
9/21/2022	2:20	5.44	0.05	326	ebb
9/21/2022	2:30	5.44	0.10	343	ebb
9/21/2022	2:40	5.43	0.16	345	ebb
9/21/2022	2:50	5.42	0.22	354	ebb
9/21/2022	3:00	5.41	0.23	347	ebb
9/21/2022	3:10	5.40	0.26	352	ebb
9/21/2022	3:20	5.39	0.31	349	ebb
9/21/2022	3:30	5.38	0.35	351	ebb
9/21/2022	3:40	5.37	0.41	350	ebb
9/21/2022	3:50	5.35	0.46	347	ebb
9/21/2022	4:00	5.34	0.46	349	ebb
9/21/2022	4:10	5.33	0.48	347	ebb



**Table C-1**  
**Data Record for the *Upper* Current Meter in the Columbia River, September 20-22, 2022**  
***Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study***

<u>Date</u>	<u>Time, PDT</u> <u>(hh:mm:ss)</u>	<u>Depth</u> <u>(meters)</u>	<u>Speed</u> <u>(m/sec)</u>	<u>Direction</u> <u>(deg. mag.)</u>	<u>Tide</u> <u>Condition</u>
9/21/2022	4:20	5.31	0.54	351	ebb
9/21/2022	4:30	5.28	0.47	353	ebb
9/21/2022	4:40	5.28	0.51	349	ebb
9/21/2022	4:50	5.25	0.53	345	ebb
9/21/2022	5:00	5.26	0.52	346	ebb
9/21/2022	5:10	5.23	0.53	353	ebb
9/21/2022	5:20	5.20	0.48	345	ebb
9/21/2022	5:30	5.17	0.52	350	ebb
9/21/2022	5:40	5.16	0.54	357	ebb
9/21/2022	5:50	5.15	0.57	0	ebb
9/21/2022	6:00	5.17	0.53	343	ebb
9/21/2022	6:10	5.21	0.50	349	ebb
9/21/2022	6:20	5.06	0.49	341	ebb
9/21/2022	6:30	5.15	0.48	347	ebb
9/21/2022	6:40	5.07	0.54	348	ebb
9/21/2022	6:50	5.13	0.52	347	ebb
9/21/2022	7:00	5.08	0.51	347	ebb
9/21/2022	7:10	5.06	0.51	350	ebb
9/21/2022	7:20	5.16	0.45	351	ebb
9/21/2022	7:30	5.09	0.50	348	ebb
9/21/2022	7:40	5.08	0.50	348	ebb
9/21/2022	7:50	5.08	0.48	357	ebb
9/21/2022	8:00	5.02	0.51	346	ebb
9/21/2022	8:10	4.95	0.53	351	ebb
9/21/2022	8:20	4.96	0.51	346	ebb
9/21/2022	8:30	4.91	0.52	338	ebb
9/21/2022	8:40	4.91	0.53	355	ebb
9/21/2022	8:50	4.91	0.54	350	ebb
9/21/2022	9:00	4.96	0.50	356	ebb
9/21/2022	9:10	4.84	0.53	351	ebb
9/21/2022	9:20	4.87	0.48	354	ebb
9/21/2022	9:30	4.85	0.48	347	ebb
9/21/2022	9:40	4.82	0.54	351	ebb
9/21/2022	9:50	4.78	0.53	354	ebb
9/21/2022	10:00	4.75	0.54	340	ebb
9/21/2022	10:10	4.76	0.51	349	ebb
9/21/2022	10:20	4.69	0.49	357	ebb
9/21/2022	10:30	4.69	0.54	350	ebb
9/21/2022	10:40	4.72	0.57	348	ebb
9/21/2022	10:50	4.71	0.56	347	ebb
9/21/2022	11:00	4.57	0.46	350	ebb

**Table C-1**  
**Data Record for the *Upper* Current Meter in the Columbia River, September 20-22, 2022**  
***Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study***

<u>Date</u>	<u>Time, PDT</u> <u>(hh:mm:ss)</u>	<u>Depth</u> <u>(meters)</u>	<u>Speed</u> <u>(m/sec)</u>	<u>Direction</u> <u>(deg. mag.)</u>	<u>Tide</u> <u>Condition</u>
9/21/2022	11:10	4.63	0.52	351	ebb
9/21/2022	11:20	4.61	0.51	352	ebb
9/21/2022	11:30	4.60	0.49	354	ebb
9/21/2022	11:40	4.61	0.49	357	ebb
9/21/2022	11:50	4.58	0.40	345	ebb
9/21/2022	12:00	4.60	0.36	340	ebb
9/21/2022	12:10	4.60	0.30	357	ebb
9/21/2022	12:20	4.60	0.21	343	ebb
9/21/2022	12:30	4.63	0.25	356	ebb
9/21/2022	12:40	4.66	0.18	344	ebb
9/21/2022	12:50	4.69	0.12	345	ebb
9/21/2022	13:00	4.72	0.09	14	ebb
9/21/2022	13:10	4.77	0.03	180	flood
9/21/2022	13:20	4.80	0.04	213	flood
9/21/2022	13:30	4.84	0.04	175	flood
9/21/2022	13:40	4.89	0.11	176	flood
9/21/2022	13:50	4.92	0.16	184	flood
9/21/2022	14:00	4.95	0.19	161	flood
9/21/2022	14:10	5.00	0.21	167	flood
9/21/2022	14:20	5.04	0.21	169	flood
9/21/2022	14:30	5.07	0.24	172	flood
9/21/2022	14:40	5.10	0.21	171	flood
9/21/2022	14:50	5.14	0.22	172	flood
9/21/2022	15:00	5.17	0.20	171	flood
9/21/2022	15:10	5.20	0.21	170	flood
9/21/2022	15:20	5.23	0.19	167	flood
9/21/2022	15:30	5.26	0.19	169	flood
9/21/2022	15:40	5.28	0.16	173	flood
9/21/2022	15:50	5.31	0.09	177	flood
9/21/2022	16:00	5.32	0.09	162	flood
9/21/2022	16:10	5.35	0.09	173	flood
9/21/2022	16:20	5.36	0.06	178	flood
9/21/2022	16:30	5.37	0.02	223	flood
9/21/2022	16:40	5.37	0.03	349	ebb
9/21/2022	16:50	5.36	0.08	350	ebb
9/21/2022	17:00	5.35	0.16	351	ebb
9/21/2022	17:10	5.34	0.23	348	ebb
9/21/2022	17:20	5.32	0.27	351	ebb
9/21/2022	17:30	5.32	0.28	348	ebb
9/21/2022	17:40	5.31	0.36	349	ebb
9/21/2022	17:50	5.30	0.42	351	ebb

**Table C-1**  
**Data Record for the *Upper* Current Meter in the Columbia River, September 20-22, 2022**  
***Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study***

<u>Date</u>	<u>Time, PDT</u> <u>(hh:mm:ss)</u>	<u>Depth</u> <u>(meters)</u>	<u>Speed</u> <u>(m/sec)</u>	<u>Direction</u> <u>(deg. mag.)</u>	<u>Tide</u> <u>Condition</u>
9/21/2022	18:00	5.31	0.49	344	ebb
9/21/2022	18:10	5.32	0.57	352	ebb
9/21/2022	18:20	5.30	0.51	344	ebb
9/21/2022	18:30	5.37	0.52	355	ebb
9/21/2022	18:40	5.30	0.54	349	ebb
9/21/2022	18:50	5.28	0.51	340	ebb
9/21/2022	19:00	5.31	0.52	350	ebb
9/21/2022	19:10	5.34	0.49	345	ebb
9/21/2022	19:20	5.33	0.51	352	ebb
9/21/2022	19:30	5.27	0.50	347	ebb
9/21/2022	19:40	5.24	0.51	347	ebb
9/21/2022	19:50	5.17	0.50	349	ebb
9/21/2022	20:00	5.14	0.50	347	ebb
9/21/2022	20:10	5.11	0.50	351	ebb
9/21/2022	20:20	5.10	0.49	352	ebb
9/21/2022	20:30	5.07	0.48	355	ebb
9/21/2022	20:40	5.03	0.43	346	ebb
9/21/2022	20:50	5.03	0.49	351	ebb
9/21/2022	21:00	5.03	0.49	340	ebb
9/21/2022	21:10	5.00	0.42	345	ebb
9/21/2022	21:20	5.03	0.53	348	ebb
9/21/2022	21:30	5.02	0.52	351	ebb
9/21/2022	21:40	4.98	0.49	349	ebb
9/21/2022	21:50	4.98	0.51	337	ebb
9/21/2022	22:00	4.97	0.48	346	ebb
9/21/2022	22:10	4.95	0.45	342	ebb
9/21/2022	22:20	4.98	0.54	354	ebb
9/21/2022	22:30	4.95	0.48	347	ebb
9/21/2022	22:40	4.94	0.50	349	ebb
9/21/2022	22:50	4.94	0.45	343	ebb
9/21/2022	23:00	4.93	0.36	342	ebb
9/21/2022	23:10	4.96	0.47	350	ebb
9/21/2022	23:20	4.95	0.36	353	ebb
9/21/2022	23:30	4.97	0.36	354	ebb
9/21/2022	23:40	4.97	0.25	6	ebb
9/21/2022	23:50	4.99	0.25	353	ebb
9/22/2022	0:00	5.02	0.18	5	ebb
9/22/2022	0:10	5.05	0.20	348	ebb
9/22/2022	0:20	5.08	0.06	316	ebb
9/22/2022	0:30	5.12	0.05	5	ebb
9/22/2022	0:40	5.16	0.03	159	flood

**Table C-1**  
**Data Record for the Upper Current Meter in the Columbia River, September 20-22, 2022**  
**Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study**

<u>Date</u>	<u>Time, PDT</u> <u>(hh:mm:ss)</u>	<u>Depth</u> <u>(meters)</u>	<u>Speed</u> <u>(m/sec)</u>	<u>Direction</u> <u>(deg. mag.)</u>	<u>Tide</u> <u>Condition</u>
9/22/2022	0:50	5.20	0.05	202	flood
9/22/2022	1:00	5.23	0.10	154	flood
9/22/2022	1:10	5.27	0.11	153	flood
9/22/2022	1:20	5.30	0.13	157	flood
9/22/2022	1:30	5.33	0.19	167	flood
9/22/2022	1:40	5.36	0.19	150	flood
9/22/2022	1:50	5.39	0.18	165	flood
9/22/2022	2:00	5.42	0.18	162	flood
9/22/2022	2:10	5.45	0.16	158	flood
9/22/2022	2:20	5.47	0.18	172	flood
9/22/2022	2:30	5.50	0.17	163	flood
9/22/2022	2:40	5.52	0.14	168	flood
9/22/2022	2:50	5.54	0.11	165	flood
9/22/2022	3:00	5.56	0.07	174	flood
9/22/2022	3:10	5.57	0.04	117	flood
9/22/2022	3:20	5.58	0.02	7	ebb
9/22/2022	3:30	5.58	0.06	5	ebb
9/22/2022	3:40	5.57	0.10	357	ebb
9/22/2022	3:50	5.56	0.16	345	ebb
9/22/2022	4:00	5.55	0.21	350	ebb
9/22/2022	4:10	5.53	0.28	348	ebb
9/22/2022	4:20	5.53	0.31	353	ebb
9/22/2022	4:30	5.52	0.43	352	ebb
9/22/2022	4:40	5.52	0.47	348	ebb
9/22/2022	4:50	5.52	0.51	348	ebb
9/22/2022	5:00	5.52	0.53	6	ebb
9/22/2022	5:10	5.52	0.48	338	ebb
9/22/2022	5:20	5.50	0.51	351	ebb
9/22/2022	5:30	5.52	0.52	351	ebb
9/22/2022	5:40	5.46	0.50	347	ebb
9/22/2022	5:50	5.49	0.52	348	ebb
9/22/2022	6:00	5.46	0.52	345	ebb
9/22/2022	6:10	5.47	0.55	357	ebb
9/22/2022	6:20	5.37	0.52	346	ebb
9/22/2022	6:30	5.37	0.55	349	ebb
9/22/2022	6:40	5.33	0.52	353	ebb
9/22/2022	6:50	5.32	0.47	342	ebb
9/22/2022	7:00	5.28	0.53	343	ebb
9/22/2022	7:10	5.31	0.53	350	ebb
9/22/2022	7:20	5.27	0.52	348	ebb
9/22/2022	7:30	5.23	0.52	354	ebb

**Table C-1**  
**Data Record for the *Upper* Current Meter in the Columbia River, September 20-22, 2022**  
***Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study***

<u>Date</u>	<u>Time, PDT</u> <u>(hh:mm:ss)</u>	<u>Depth</u> <u>(meters)</u>	<u>Speed</u> <u>(m/sec)</u>	<u>Direction</u> <u>(deg. mag.)</u>	<u>Tide</u> <u>Condition</u>
9/22/2022	7:40	5.22	0.49	352	ebb
9/22/2022	7:50	5.23	0.53	341	ebb
9/22/2022	8:00	5.15	0.46	350	ebb
9/22/2022	8:10	5.15	0.52	342	ebb
9/22/2022	8:20	5.15	0.52	349	ebb
9/22/2022	8:30	5.11	0.52	350	ebb
9/22/2022	8:40	5.11	0.49	351	ebb
9/22/2022	8:50	5.03	0.48	351	ebb
9/22/2022	9:00	5.10	0.51	345	ebb
9/22/2022	9:10	5.00	0.52	352	ebb
9/22/2022	9:20	5.03	0.50	347	ebb
9/22/2022	9:30	5.05	0.53	348	ebb
9/22/2022	9:40	4.97	0.51	352	ebb
9/22/2022	9:50	4.93	0.54	348	ebb
9/22/2022	10:00	4.94	0.54	348	ebb
9/22/2022	10:10	4.86	0.52	350	ebb
9/22/2022	10:20	4.93	0.50	349	ebb
9/22/2022	10:30	4.92	0.50	351	ebb
9/22/2022	10:40	4.87	0.49	350	ebb
9/22/2022	10:50	4.80	0.48	347	ebb
9/22/2022	11:00	4.80	0.51	348	ebb
9/22/2022	11:10	4.83	0.54	359	ebb
9/22/2022	11:20	4.75	0.51	340	ebb
9/22/2022	11:30	4.75	0.53	353	ebb
9/22/2022	11:40	4.74	0.53	353	ebb
9/22/2022	11:50	4.68	0.47	350	ebb
9/22/2022	12:00	4.67	0.54	351	ebb
9/22/2022	12:10	4.63	0.40	339	ebb
9/22/2022	12:20	4.68	0.52	349	ebb
9/22/2022	12:30	4.64	0.38	347	ebb
9/22/2022	12:40	4.66	0.38	345	ebb
9/22/2022	12:50	4.64	0.26	356	ebb
9/22/2022	13:00	4.66	0.26	347	ebb
9/22/2022	13:10	4.68	0.21	5	ebb
9/22/2022	13:20	4.71	0.17	343	ebb
9/22/2022	13:30	4.75	0.12	354	ebb
9/22/2022	13:40	4.79	0.09	24	ebb
9/22/2022	13:50	4.83	0.05	158	flood
9/22/2022	14:00	4.88	0.05	142	flood
9/22/2022	14:10	4.92	0.12	175	flood
9/22/2022	14:20	4.95	0.18	170	flood

**Table C-1**  
**Data Record for the *Upper* Current Meter in the Columbia River, September 20-22, 2022**  
***Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study***

<u>Date</u>	<u>Time, PDT</u> <u>(hh:mm:ss)</u>	<u>Depth</u> <u>(meters)</u>	<u>Speed</u> <u>(m/sec)</u>	<u>Direction</u> <u>(deg. mag.)</u>	<u>Tide</u> <u>Condition</u>
9/22/2022	14:30	4.99	0.22	164	flood
9/22/2022	14:40	5.03	0.24	168	flood
9/22/2022	14:50	5.07	0.24	166	flood
9/22/2022	15:00	5.10	0.27	163	flood
9/22/2022	15:10	5.14	0.28	173	flood
9/22/2022	15:20	5.18	0.27	165	flood
9/22/2022	15:30	5.20	0.25	173	flood
9/22/2022	15:40	5.24	0.28	173	flood
9/22/2022	15:50	5.27	0.25	167	flood

**Table C-2**  
**Data Record for the Lower Current Meter in the Columbia River, September 20-22, 2022**  
**Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study**

<u>Date</u>	<u>Time, PDT</u> <u>(hh:mm:ss)</u>	<u>Depth</u> <u>(meters)</u>	<u>Speed</u> <u>(m/sec)</u>	<u>Direction</u> <u>(deg. mag.)</u>	<u>Tide</u> <u>Condition</u>
9/20/2022	14:40	11.08	0.09	170	flood
9/20/2022	14:50	11.08	0.06	160	flood
9/20/2022	15:00	11.11	0.05	162	flood
9/20/2022	15:10	11.13	0.04	167	flood
9/20/2022	15:20	11.13	0.02	318	ebb
9/20/2022	15:30	11.13	0.04	351	ebb
9/20/2022	15:40	11.14	0.07	357	ebb
9/20/2022	15:50	11.14	0.12	353	ebb
9/20/2022	16:00	11.13	0.12	357	ebb
9/20/2022	16:10	11.12	0.16	348	ebb
9/20/2022	16:20	11.12	0.20	12	ebb
9/20/2022	16:30	11.11	0.21	350	ebb
9/20/2022	16:40	11.10	0.27	354	ebb
9/20/2022	16:50	11.09	0.31	348	ebb
9/20/2022	17:00	11.08	0.36	349	ebb
9/20/2022	17:10	11.06	0.38	347	ebb
9/20/2022	17:20	11.04	0.41	347	ebb
9/20/2022	17:30	11.04	0.38	353	ebb
9/20/2022	17:40	11.02	0.44	349	ebb
9/20/2022	17:50	11.01	0.45	351	ebb
9/20/2022	18:00	10.99	0.46	351	ebb
9/20/2022	18:10	10.98	0.46	347	ebb
9/20/2022	18:20	10.96	0.47	344	ebb
9/20/2022	18:30	10.95	0.50	349	ebb
9/20/2022	18:40	10.94	0.40	343	ebb
9/20/2022	18:50	10.91	0.48	349	ebb
9/20/2022	19:00	10.89	0.47	346	ebb
9/20/2022	19:10	10.88	0.40	348	ebb
9/20/2022	19:20	10.88	0.43	353	ebb
9/20/2022	19:30	10.86	0.37	345	ebb
9/20/2022	19:40	10.84	0.38	348	ebb
9/20/2022	19:50	10.83	0.42	349	ebb
9/20/2022	20:00	10.81	0.37	342	ebb
9/20/2022	20:10	10.80	0.46	352	ebb
9/20/2022	20:20	10.79	0.42	353	ebb
9/20/2022	20:30	10.79	0.35	347	ebb
9/20/2022	20:40	10.78	0.39	345	ebb
9/20/2022	20:50	10.79	0.39	350	ebb
9/20/2022	21:00	10.78	0.42	350	ebb
9/20/2022	21:10	10.77	0.39	354	ebb
9/20/2022	21:20	10.77	0.32	350	ebb

**Table C-2**  
**Data Record for the Lower Current Meter in the Columbia River, September 20-22, 2022**  
**Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study**

<u>Date</u>	<u>Time, PDT</u> <u>(hh:mm:ss)</u>	<u>Depth</u> <u>(meters)</u>	<u>Speed</u> <u>(m/sec)</u>	<u>Direction</u> <u>(deg. mag.)</u>	<u>Tide</u> <u>Condition</u>
9/20/2022	21:30	10.77	0.31	355	ebb
9/20/2022	21:40	10.78	0.29	347	ebb
9/20/2022	21:50	10.78	0.29	355	ebb
9/20/2022	22:00	10.79	0.25	351	ebb
9/20/2022	22:10	10.80	0.23	359	ebb
9/20/2022	22:20	10.82	0.30	351	ebb
9/20/2022	22:30	10.84	0.19	355	ebb
9/20/2022	22:40	10.86	0.12	353	ebb
9/20/2022	22:50	10.89	0.15	350	ebb
9/20/2022	23:00	10.92	0.10	12	ebb
9/20/2022	23:10	10.95	0.04	337	ebb
9/20/2022	23:20	10.99	0.04	346	ebb
9/20/2022	23:30	11.03	0.02	174	flood
9/20/2022	23:40	11.06	0.04	125	flood
9/20/2022	23:50	11.09	0.03	104	flood
9/21/2022	0:00	11.12	0.10	156	flood
9/21/2022	0:10	11.16	0.15	169	flood
9/21/2022	0:20	11.18	0.11	149	flood
9/21/2022	0:30	11.22	0.11	152	flood
9/21/2022	0:40	11.24	0.14	153	flood
9/21/2022	0:50	11.27	0.13	153	flood
9/21/2022	1:00	11.30	0.11	155	flood
9/21/2022	1:10	11.32	0.11	155	flood
9/21/2022	1:20	11.34	0.10	172	flood
9/21/2022	1:30	11.36	0.09	171	flood
9/21/2022	1:40	11.38	0.06	155	flood
9/21/2022	1:50	11.38	0.06	149	flood
9/21/2022	2:00	11.40	0.02	19	ebb
9/21/2022	2:10	11.41	0.04	51	ebb
9/21/2022	2:20	11.42	0.08	0	ebb
9/21/2022	2:30	11.41	0.12	355	ebb
9/21/2022	2:40	11.41	0.13	354	ebb
9/21/2022	2:50	11.40	0.16	348	ebb
9/21/2022	3:00	11.38	0.20	344	ebb
9/21/2022	3:10	11.38	0.24	351	ebb
9/21/2022	3:20	11.36	0.27	351	ebb
9/21/2022	3:30	11.35	0.31	351	ebb
9/21/2022	3:40	11.33	0.33	352	ebb
9/21/2022	3:50	11.31	0.37	348	ebb
9/21/2022	4:00	11.30	0.39	354	ebb
9/21/2022	4:10	11.28	0.40	350	ebb



**Table C-2**  
**Data Record for the Lower Current Meter in the Columbia River, September 20-22, 2022**  
**Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study**

<u>Date</u>	<u>Time, PDT</u> <u>(hh:mm:ss)</u>	<u>Depth</u> <u>(meters)</u>	<u>Speed</u> <u>(m/sec)</u>	<u>Direction</u> <u>(deg. mag.)</u>	<u>Tide</u> <u>Condition</u>
9/21/2022	4:20	11.25	0.46	350	ebb
9/21/2022	4:30	11.23	0.36	347	ebb
9/21/2022	4:40	11.22	0.45	350	ebb
9/21/2022	4:50	11.21	0.46	347	ebb
9/21/2022	5:00	11.19	0.45	349	ebb
9/21/2022	5:10	11.17	0.44	349	ebb
9/21/2022	5:20	11.14	0.44	352	ebb
9/21/2022	5:30	11.10	0.45	353	ebb
9/21/2022	5:40	11.09	0.44	342	ebb
9/21/2022	5:50	11.10	0.60	351	ebb
9/21/2022	6:00	11.08	0.52	346	ebb
9/21/2022	6:10	11.08	0.59	352	ebb
9/21/2022	6:20	11.03	0.56	343	ebb
9/21/2022	6:30	11.06	0.54	351	ebb
9/21/2022	6:40	11.01	0.46	347	ebb
9/21/2022	6:50	11.01	0.56	348	ebb
9/21/2022	7:00	10.96	0.51	347	ebb
9/21/2022	7:10	10.99	0.60	350	ebb
9/21/2022	7:20	10.97	0.54	343	ebb
9/21/2022	7:30	11.00	0.58	353	ebb
9/21/2022	7:40	10.98	0.59	351	ebb
9/21/2022	7:50	10.93	0.51	344	ebb
9/21/2022	8:00	10.92	0.64	352	ebb
9/21/2022	8:10	10.88	0.52	346	ebb
9/21/2022	8:20	10.86	0.62	341	ebb
9/21/2022	8:30	10.86	0.64	349	ebb
9/21/2022	8:40	10.84	0.59	353	ebb
9/21/2022	8:50	10.81	0.52	358	ebb
9/21/2022	9:00	10.80	0.53	348	ebb
9/21/2022	9:10	10.74	0.60	349	ebb
9/21/2022	9:20	10.78	0.54	351	ebb
9/21/2022	9:30	10.74	0.59	349	ebb
9/21/2022	9:40	10.73	0.62	349	ebb
9/21/2022	9:50	10.70	0.54	347	ebb
9/21/2022	10:00	10.66	0.57	345	ebb
9/21/2022	10:10	10.66	0.53	344	ebb
9/21/2022	10:20	10.62	0.43	349	ebb
9/21/2022	10:30	10.60	0.51	349	ebb
9/21/2022	10:40	10.61	0.59	351	ebb
9/21/2022	10:50	10.61	0.54	354	ebb
9/21/2022	11:00	10.51	0.46	348	ebb

**Table C-2**  
**Data Record for the Lower Current Meter in the Columbia River, September 20-22, 2022**  
**Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study**

<u>Date</u>	<u>Time, PDT</u> <u>(hh:mm:ss)</u>	<u>Depth</u> <u>(meters)</u>	<u>Speed</u> <u>(m/sec)</u>	<u>Direction</u> <u>(deg. mag.)</u>	<u>Tide</u> <u>Condition</u>
9/21/2022	11:10	10.56	0.49	352	ebb
9/21/2022	11:20	10.56	0.39	346	ebb
9/21/2022	11:30	10.56	0.41	345	ebb
9/21/2022	11:40	10.56	0.36	350	ebb
9/21/2022	11:50	10.55	0.36	345	ebb
9/21/2022	12:00	10.56	0.33	340	ebb
9/21/2022	12:10	10.57	0.28	359	ebb
9/21/2022	12:20	10.58	0.26	345	ebb
9/21/2022	12:30	10.61	0.21	359	ebb
9/21/2022	12:40	10.63	0.17	350	ebb
9/21/2022	12:50	10.68	0.13	354	ebb
9/21/2022	13:00	10.71	0.08	32	ebb
9/21/2022	13:10	10.75	0.01	163	flood
9/21/2022	13:20	10.79	0.05	225	flood
9/21/2022	13:30	10.83	0.06	147	flood
9/21/2022	13:40	10.86	0.07	134	flood
9/21/2022	13:50	10.90	0.14	181	flood
9/21/2022	14:00	10.94	0.11	151	flood
9/21/2022	14:10	10.98	0.15	148	flood
9/21/2022	14:20	11.03	0.16	150	flood
9/21/2022	14:30	11.06	0.21	163	flood
9/21/2022	14:40	11.09	0.19	159	flood
9/21/2022	14:50	11.13	0.19	157	flood
9/21/2022	15:00	11.15	0.19	162	flood
9/21/2022	15:10	11.18	0.17	162	flood
9/21/2022	15:20	11.22	0.16	157	flood
9/21/2022	15:30	11.24	0.15	167	flood
9/21/2022	15:40	11.27	0.09	156	flood
9/21/2022	15:50	11.30	0.11	158	flood
9/21/2022	16:00	11.27	0.17	166	flood
9/21/2022	16:10	11.33	0.09	174	flood
9/21/2022	16:20	11.34	0.03	159	flood
9/21/2022	16:30	11.35	0.02	255	flood
9/21/2022	16:40	11.35	0.07	333	ebb
9/21/2022	16:50	11.35	0.12	346	ebb
9/21/2022	17:00	11.33	0.17	347	ebb
9/21/2022	17:10	11.32	0.18	342	ebb
9/21/2022	17:20	11.30	0.23	347	ebb
9/21/2022	17:30	11.29	0.27	357	ebb
9/21/2022	17:40	11.27	0.34	355	ebb
9/21/2022	17:50	11.26	0.39	350	ebb

**Table C-2**  
**Data Record for the Lower Current Meter in the Columbia River, September 20-22, 2022**  
**Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study**

<u>Date</u>	<u>Time, PDT</u> <u>(hh:mm:ss)</u>	<u>Depth</u> <u>(meters)</u>	<u>Speed</u> <u>(m/sec)</u>	<u>Direction</u> <u>(deg. mag.)</u>	<u>Tide</u> <u>Condition</u>
9/21/2022	18:00	11.26	0.40	346	ebb
9/21/2022	18:10	11.26	0.43	350	ebb
9/21/2022	18:20	11.26	0.46	350	ebb
9/21/2022	18:30	11.28	0.50	344	ebb
9/21/2022	18:40	11.25	0.43	344	ebb
9/21/2022	18:50	11.22	0.44	340	ebb
9/21/2022	19:00	11.21	0.48	348	ebb
9/21/2022	19:10	11.23	0.61	349	ebb
9/21/2022	19:20	11.21	0.47	349	ebb
9/21/2022	19:30	11.16	0.57	345	ebb
9/21/2022	19:40	11.16	0.53	353	ebb
9/21/2022	19:50	11.12	0.50	349	ebb
9/21/2022	20:00	11.09	0.48	346	ebb
9/21/2022	20:10	11.07	0.49	347	ebb
9/21/2022	20:20	11.06	0.42	353	ebb
9/21/2022	20:30	11.03	0.49	353	ebb
9/21/2022	20:40	11.01	0.47	348	ebb
9/21/2022	20:50	10.99	0.46	349	ebb
9/21/2022	21:00	10.99	0.47	349	ebb
9/21/2022	21:10	10.95	0.44	349	ebb
9/21/2022	21:20	10.97	0.54	349	ebb
9/21/2022	21:30	10.97	0.47	350	ebb
9/21/2022	21:40	10.93	0.47	349	ebb
9/21/2022	21:50	10.93	0.49	350	ebb
9/21/2022	22:00	10.92	0.47	347	ebb
9/21/2022	22:10	10.91	0.47	345	ebb
9/21/2022	22:20	10.92	0.47	353	ebb
9/21/2022	22:30	10.90	0.41	351	ebb
9/21/2022	22:40	10.90	0.43	353	ebb
9/21/2022	22:50	10.90	0.36	347	ebb
9/21/2022	23:00	10.91	0.35	346	ebb
9/21/2022	23:10	10.93	0.32	350	ebb
9/21/2022	23:20	10.93	0.28	349	ebb
9/21/2022	23:30	10.94	0.27	354	ebb
9/21/2022	23:40	10.95	0.17	349	ebb
9/21/2022	23:50	10.98	0.13	345	ebb
9/22/2022	0:00	11.01	0.12	7	ebb
9/22/2022	0:10	11.05	0.13	336	ebb
9/22/2022	0:20	11.08	0.04	268	flood
9/22/2022	0:30	11.12	0.07	218	flood
9/22/2022	0:40	11.15	0.08	228	flood

**Table C-2**  
**Data Record for the Lower Current Meter in the Columbia River, September 20-22, 2022**  
**Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study**

<u>Date</u>	<u>Time, PDT</u> <u>(hh:mm:ss)</u>	<u>Depth</u> <u>(meters)</u>	<u>Speed</u> <u>(m/sec)</u>	<u>Direction</u> <u>(deg. mag.)</u>	<u>Tide</u> <u>Condition</u>
9/22/2022	0:50	11.19	0.06	181	flood
9/22/2022	1:00	11.23	0.11	155	flood
9/22/2022	1:10	11.26	0.15	168	flood
9/22/2022	1:20	11.30	0.16	171	flood
9/22/2022	1:30	11.32	0.21	175	flood
9/22/2022	1:40	11.36	0.18	164	flood
9/22/2022	1:50	11.39	0.19	172	flood
9/22/2022	2:00	11.42	0.16	170	flood
9/22/2022	2:10	11.45	0.16	171	flood
9/22/2022	2:20	11.47	0.18	175	flood
9/22/2022	2:30	11.49	0.16	169	flood
9/22/2022	2:40	11.51	0.12	164	flood
9/22/2022	2:50	11.53	0.10	157	flood
9/22/2022	3:00	11.55	0.05	157	flood
9/22/2022	3:10	11.56	0.03	194	flood
9/22/2022	3:20	11.57	0.04	304	ebb
9/22/2022	3:30	11.57	0.09	335	ebb
9/22/2022	3:40	11.56	0.12	350	ebb
9/22/2022	3:50	11.55	0.15	345	ebb
9/22/2022	4:00	11.53	0.19	342	ebb
9/22/2022	4:10	11.52	0.24	348	ebb
9/22/2022	4:20	11.51	0.28	343	ebb
9/22/2022	4:30	11.50	0.35	345	ebb
9/22/2022	4:40	11.48	0.36	341	ebb
9/22/2022	4:50	11.47	0.38	350	ebb
9/22/2022	5:00	11.47	0.48	349	ebb
9/22/2022	5:10	11.44	0.43	346	ebb
9/22/2022	5:20	11.44	0.51	345	ebb
9/22/2022	5:30	11.43	0.51	344	ebb
9/22/2022	5:40	11.41	0.50	349	ebb
9/22/2022	5:50	11.40	0.54	349	ebb
9/22/2022	6:00	11.35	0.52	347	ebb
9/22/2022	6:10	11.38	0.53	350	ebb
9/22/2022	6:20	11.30	0.56	349	ebb
9/22/2022	6:30	11.30	0.46	350	ebb
9/22/2022	6:40	11.26	0.50	345	ebb
9/22/2022	6:50	11.25	0.49	351	ebb
9/22/2022	7:00	11.21	0.53	346	ebb
9/22/2022	7:10	11.21	0.50	346	ebb
9/22/2022	7:20	11.18	0.54	346	ebb
9/22/2022	7:30	11.16	0.49	352	ebb

**Table C-2**  
**Data Record for the Lower Current Meter in the Columbia River, September 20-22, 2022**  
**Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study**

<u>Date</u>	<u>Time, PDT</u> <u>(hh:mm:ss)</u>	<u>Depth</u> <u>(meters)</u>	<u>Speed</u> <u>(m/sec)</u>	<u>Direction</u> <u>(deg. mag.)</u>	<u>Tide</u> <u>Condition</u>
9/22/2022	7:40	11.12	0.56	347	ebb
9/22/2022	7:50	11.13	0.50	348	ebb
9/22/2022	8:00	11.11	0.51	349	ebb
9/22/2022	8:10	11.08	0.58	354	ebb
9/22/2022	8:20	11.06	0.54	352	ebb
9/22/2022	8:30	11.04	0.49	354	ebb
9/22/2022	8:40	11.05	0.57	349	ebb
9/22/2022	8:50	10.96	0.52	350	ebb
9/22/2022	9:00	10.98	0.57	340	ebb
9/22/2022	9:10	10.93	0.57	347	ebb
9/22/2022	9:20	10.93	0.44	349	ebb
9/22/2022	9:30	10.94	0.62	347	ebb
9/22/2022	9:40	10.90	0.55	352	ebb
9/22/2022	9:50	10.86	0.58	346	ebb
9/22/2022	10:00	10.84	0.47	346	ebb
9/22/2022	10:10	10.80	0.51	346	ebb
9/22/2022	10:20	10.82	0.58	351	ebb
9/22/2022	10:30	10.80	0.59	347	ebb
9/22/2022	10:40	10.75	0.43	348	ebb
9/22/2022	10:50	10.73	0.53	348	ebb
9/22/2022	11:00	10.71	0.53	354	ebb
9/22/2022	11:10	10.71	0.55	353	ebb
9/22/2022	11:20	10.68	0.51	348	ebb
9/22/2022	11:30	10.67	0.54	350	ebb
9/22/2022	11:40	10.67	0.51	353	ebb
9/22/2022	11:50	10.62	0.48	349	ebb
9/22/2022	12:00	10.63	0.41	347	ebb
9/22/2022	12:10	10.62	0.35	345	ebb
9/22/2022	12:20	10.63	0.44	351	ebb
9/22/2022	12:30	10.62	0.36	353	ebb
9/22/2022	12:40	10.63	0.28	342	ebb
9/22/2022	12:50	10.63	0.24	351	ebb
9/22/2022	13:00	10.65	0.22	353	ebb
9/22/2022	13:10	10.67	0.17	14	ebb
9/22/2022	13:20	10.70	0.13	342	ebb
9/22/2022	13:30	10.74	0.05	0	ebb
9/22/2022	13:40	10.78	0.04	125	flood
9/22/2022	13:50	10.83	0.06	144	flood
9/22/2022	14:00	10.87	0.09	146	flood
9/22/2022	14:10	10.91	0.16	176	flood
9/22/2022	14:20	10.95	0.19	162	flood

**Table C-2**  
**Data Record for the *Lower* Current Meter in the Columbia River, September 20-22, 2022**  
***Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study***

<u>Date</u>	<u>Time, PDT</u> <u>(hh:mm:ss)</u>	<u>Depth</u> <u>(meters)</u>	<u>Speed</u> <u>(m/sec)</u>	<u>Direction</u> <u>(deg. mag.)</u>	<u>Tide</u> <u>Condition</u>
9/22/2022	14:30	10.98	0.23	165	flood
9/22/2022	14:40	11.03	0.17	159	flood
9/22/2022	14:50	11.06	0.22	161	flood
9/22/2022	15:00	11.10	0.25	161	flood
9/22/2022	15:10	11.13	0.26	171	flood
9/22/2022	15:20	11.17	0.25	159	flood
9/22/2022	15:30	11.19	0.23	161	flood
9/22/2022	15:40	11.23	0.25	166	flood
9/22/2022	15:50	11.26	0.19	159	flood

## **Appendix D Field Tracer Study Data**

**D-1. Tracer Study Figures**

**D-2. Tracer Study Data Tables**





## D-1. Tracer Study Figures



Figure D-1. Salmon Creek TP Outfall Mixing Performance Study--  
Calibration Plots for Effluent 10-AU S/N 6900 XTD Fluorometer

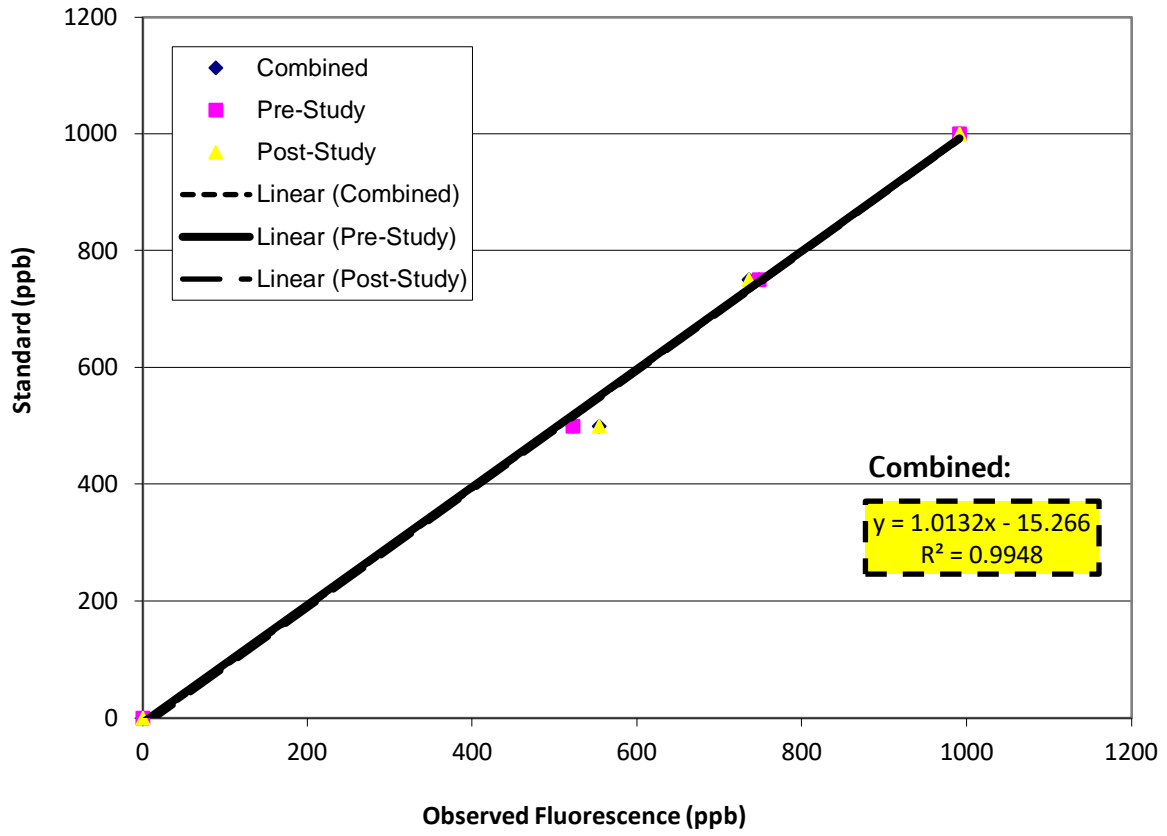


Figure D-2. Salmon Creek TP Outfall Mixing Performance Study--  
Calibration Plots for Effluent SCUFA S/N 0534 Fluorometer

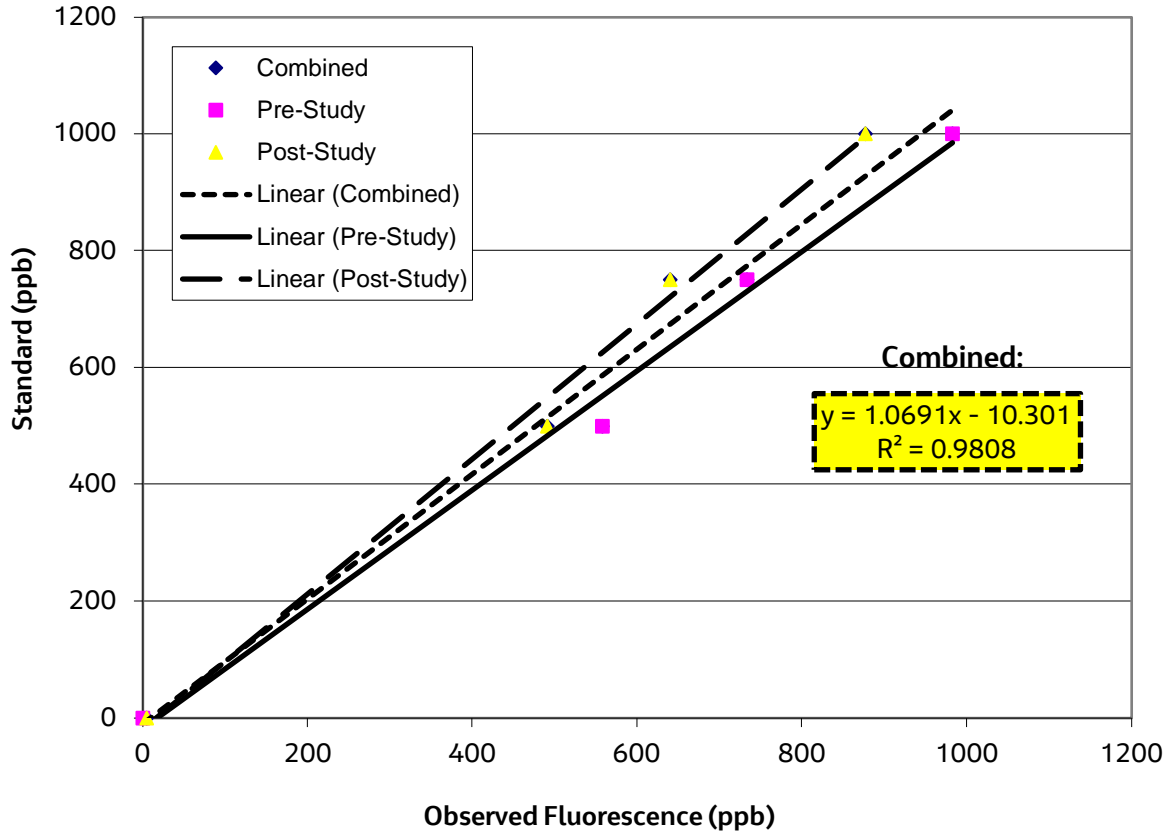
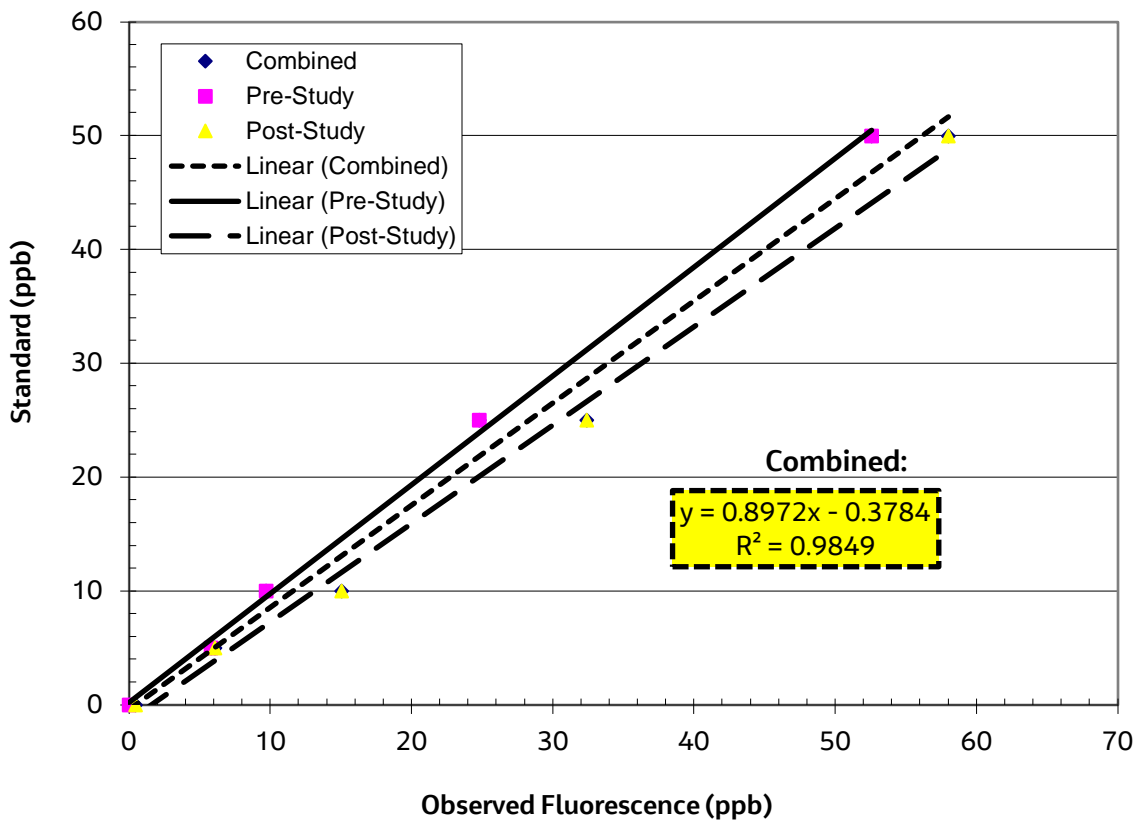


Figure D-3. Salmon Creek TP Outfall Mixing Performance Study--  
Calibration Plots for Receiving Water SCUFA S/N 0779 Fluorometer



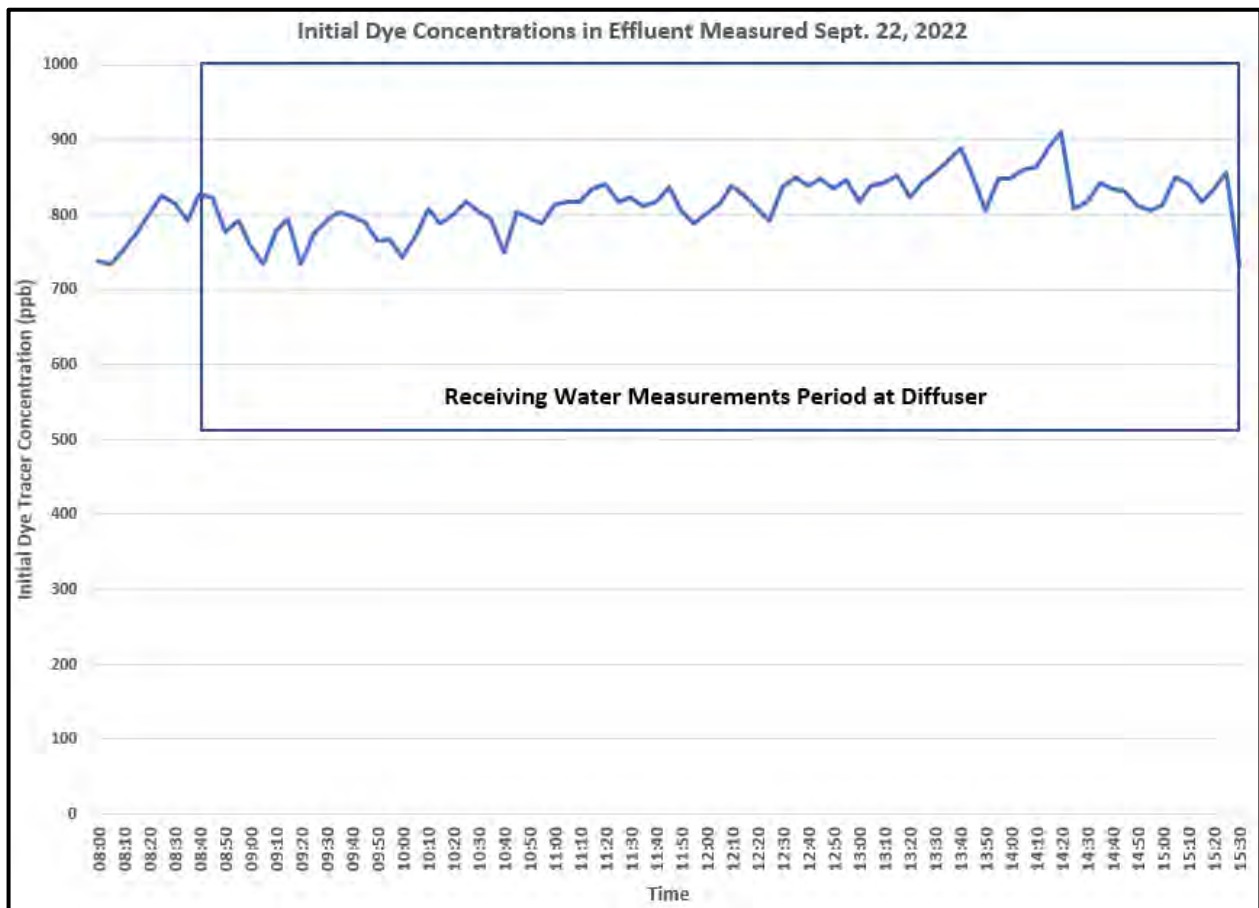
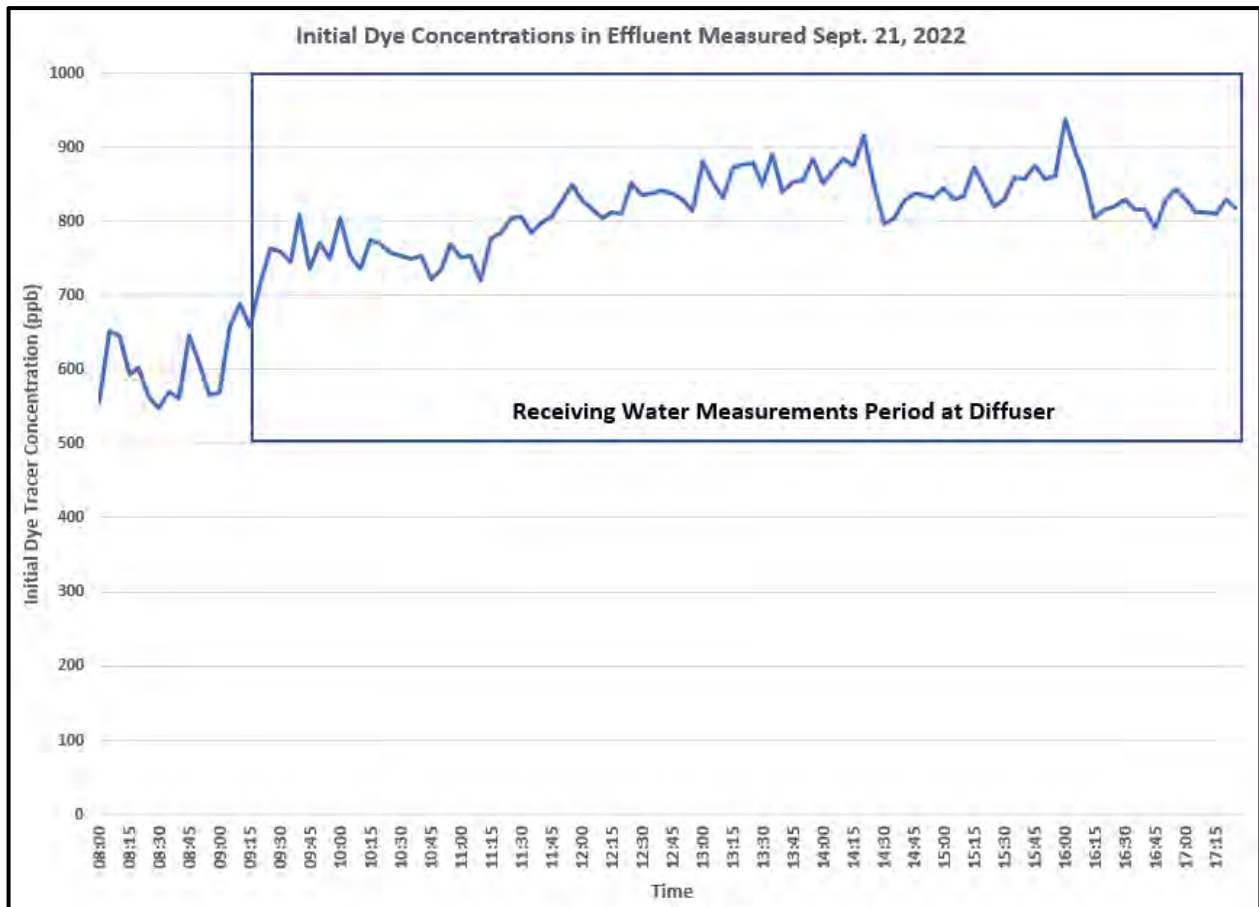
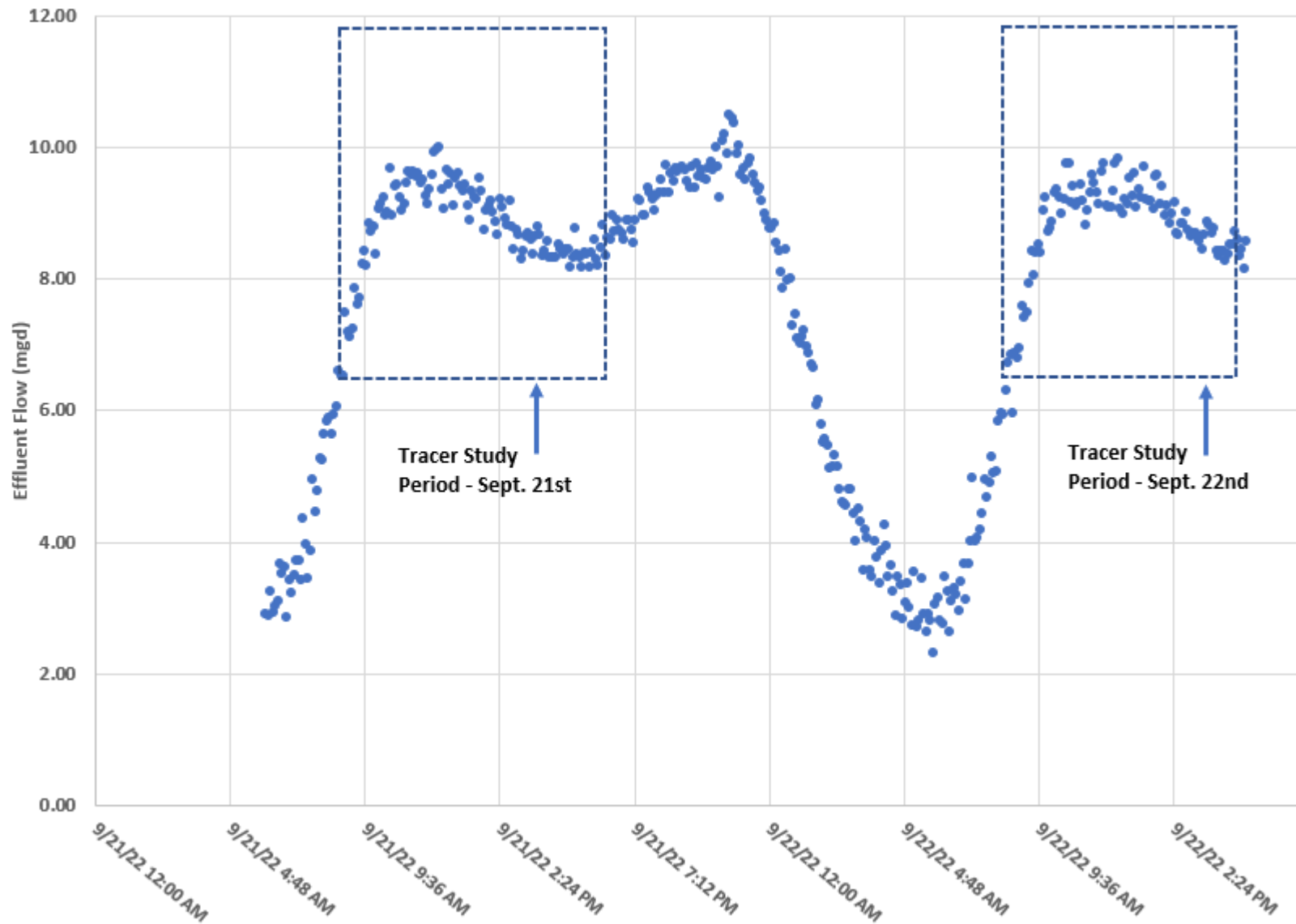


Figure D-4. Plots of Initial Dye Concentrations Measured in SCTP Effluent – Sept. 21 & 22, 2022

Figure D-5. SCTP Effluent Flow During September 21 and 22, 2022 Mixing Study Periods







## D-2. Tracer Study Data Tables



## D-2. Tracer Study Data Tables



**TABLE D-1**

Profile BKGRD-01 on September 21, 2022 (0900-0907 hours PDT) located 240 feet south of outfall diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
BKGRD-01 (240 ft South)	32 ft	0.5 m/sec 356 deg. (mag.) Ebb tide	9:02:55	6.40	20.21	124.61	0.02	0.02	600	32787		No dye detected in background
			9:02:56	7.71	20.21	124.61	0.02	0.02	600	29412		
			9:02:57	8.01	20.21	124.63	0.03	0.03	600	20000		
			9:02:58	8.15	20.21	124.66	0.04	0.04	600	16043		
			9:02:59	8.14	20.21	124.65	0.04	0.04	600	16043		
			9:03:00	8.15	20.21	124.68	0.02	0.02	600	28846		
			9:03:01	8.14	20.21	124.68	0.04	0.04	600	16043		
			9:03:02	8.10	20.21	124.68	0.04	0.04	600	16043		
			9:03:03	8.09	20.21	124.65	0.02	0.02	600	28571		
			9:03:04	8.14	20.21	124.68	0.04	0.04	600	16043		
			9:03:05	8.08	20.21	124.70	0.03	0.03	600	20000		
			9:03:06	8.14	20.21	124.63	0.03	0.03	600	17291		
			9:03:07	8.11	20.21	124.66	0.03	0.03	600	17910		
			9:03:08	8.04	20.21	124.65	0.03	0.03	600	20000		
			9:03:09	8.12	20.21	124.61	0.04	0.04	600	16043		
			9:03:10	8.12	20.22	124.57	0.04	0.04	600	16043		
			9:03:11	8.10	20.22	124.61	0.02	0.02	600	28846		
			9:03:12	8.05	20.21	124.70	0.04	0.04	600	16043		
			9:03:13	8.09	20.22	124.65	0.04	0.04	600	16043		
			9:03:14	8.06	20.21	124.68	0.02	0.02	600	28571		
			9:03:15	8.13	20.21	124.63	0.04	0.04	600	16043		
			9:03:16	8.06	20.21	124.57	0.03	0.03	600	20000		
			9:03:17	8.10	20.22	124.58	0.03	0.03	600	17291		
			9:03:18	8.02	20.22	124.65	0.05	0.05	600	12000		
			9:03:19	8.10	20.22	124.55	0.02	0.02	600	32086		
			9:03:20	8.04	20.22	124.51	0.04	0.04	600	13453		
			9:03:21	8.09	20.22	124.57	0.05	0.05	600	12000		
			9:03:22	8.12	20.22	124.68	0.02	0.02	600	32086		
			9:03:23	8.12	20.21	124.65	0.04	0.04	600	13453		
			9:03:24	8.09	20.21	124.65	0.05	0.05	600	12000		
9:03:25	8.12	20.21	124.68	0.02	0.02	600	32086					
9:03:26	8.11	20.21	124.70	0.02	0.02	600	31414					
9:03:27	8.10	20.21	124.68	0.04	0.04	600	13453					
9:03:28	8.09	20.21	124.68	0.06	0.06	600	10811					
9:03:29	8.12	20.21	124.57	0.02	0.02	600	32787					
9:03:30	8.12	20.22	124.57	0.02	0.02	600	29412					

**TABLE D-1**

Profile BKGRD-01 on September 21, 2022 (0900-0907 hours PDT) located 240 feet south of outfall diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:03:31	8.03	20.22	124.57	0.03	0.03	600	20000		
			9:03:32	8.08	20.22	124.59	0.04	0.04	600	16043		
			9:03:33	8.05	20.22	124.59	0.04	0.04	600	16043		
			9:03:34	8.02	20.22	124.57	0.02	0.02	600	28846		
			9:03:35	8.08	20.23	124.55	0.04	0.04	600	16043		
			9:03:36	8.07	20.22	124.63	0.04	0.04	600	16043		
			9:03:37	8.09	20.22	124.63	0.02	0.02	600	28571		
			9:03:38	8.13	20.22	124.59	0.04	0.04	600	16043		
			9:03:39	8.13	20.22	124.65	0.03	0.03	600	20000		
			9:03:40	8.10	20.21	124.61	0.03	0.03	600	17291		
			9:03:41	8.13	20.21	124.65	0.03	0.03	600	20000		
			9:03:42	8.10	20.21	124.59	0.04	0.04	600	16043		
			9:03:43	8.06	20.22	124.59	0.04	0.04	600	16043		
			9:03:44	8.13	20.22	124.59	0.02	0.02	600	28846		
			9:03:45	8.06	20.22	124.51	0.04	0.04	600	16043		
			9:03:46	8.12	20.22	124.56	0.04	0.04	600	16043		
			9:03:47	8.09	20.22	124.59	0.02	0.02	600	28571		
			9:03:48	8.11	20.22	124.61	0.04	0.04	600	16043		
			9:03:49	8.12	20.22	124.63	0.03	0.03	600	20000		
			9:03:50	8.11	20.21	124.57	0.03	0.03	600	17291		
			9:03:51	8.08	20.21	124.63	0.03	0.03	600	20000		
			9:03:52	8.09	20.21	124.70	0.04	0.04	600	16043		
			9:03:53	8.07	20.21	124.68	0.04	0.04	600	16043		
			9:03:54	8.04	20.21	124.63	0.02	0.02	600	28846		
			9:03:55	8.11	20.21	124.59	0.04	0.04	600	16043		
			9:03:56	8.10	20.22	124.61	0.04	0.04	600	16043		
			9:03:57	8.07	20.21	124.61	0.02	0.02	600	28571		
			9:03:58	8.11	20.21	124.68	0.04	0.04	600	16043		
			9:03:59	8.07	20.21	124.61	0.03	0.03	600	20000		
			9:04:00	8.08	20.21	124.61	0.03	0.03	600	17291		
			9:04:01	8.09	20.21	124.63	0.07	0.07	600	8523		
			9:04:02	8.08	20.21	124.72	0.02	0.02	600	27778		
			9:04:03	8.04	20.21	124.63	0.02	0.02	600	30303		
			9:04:04	8.06	20.21	124.63	0.02	0.02	600	28846		
			9:04:05	8.05	20.21	124.65	0.02	0.02	600	29412		
			9:04:06	8.04	20.21	124.61	0.02	0.02	600	26432		

**TABLE D-1**

Profile BKGRD-01 on September 21, 2022 (0900-0907 hours PDT) located 240 feet south of outfall diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:04:07	8.10	20.22	124.59	0.02	0.02	600	30000		
			9:04:08	8.07	20.22	124.59	0.02	0.02	600	31088		
			9:04:09	8.07	20.21	124.65	0.02	0.02	600	30457		
			9:04:10	8.07	20.21	124.65	0.02	0.02	600	29126		
			9:04:11	8.14	20.21	124.70	0.04	0.04	600	15789		
			9:04:12	8.00	20.21	124.65	0.02	0.02	600	29412		
			9:04:13	8.12	20.21	124.65	0.02	0.02	600	27778		
			9:04:14	8.07	20.21	124.61	0.02	0.02	600	28302		
			9:04:15	8.10	20.21	124.54	0.03	0.03	600	17647		
			9:04:16	8.04	20.22	124.59	0.02	0.02	600	29412		
			9:04:17	8.05	20.22	124.59	0.03	0.03	600	22472		
			9:04:18	8.05	20.21	124.63	0.04	0.04	600	16393		
			9:04:19	8.17	20.21	124.70	0.03	0.03	600	20408		
			9:04:20	8.29	20.21	124.65	0.02	0.02	600	28302		
			9:04:21	9.08	20.21	124.74	0.02	0.02	600	30303		
			9:04:22	10.28	20.21	124.72	0.02	0.02	600	30769		
			9:04:23	11.39	20.21	124.61	0.02	0.02	600	27907		
			9:04:24	12.30	20.21	124.70	0.02	0.02	600	30457		
			9:04:25	12.99	20.21	124.63	0.02	0.02	600	28302		
			9:04:26	13.58	20.21	124.63	0.02	0.02	600	29126		
			9:04:27	13.82	20.21	124.65	0.02	0.02	600	31414		
			9:04:28	13.88	20.21	124.74	0.07	0.07	600	8523		
			9:04:29	13.99	20.21	124.70	0.02	0.02	600	27778		
			9:04:30	14.46	20.21	124.61	0.02	0.02	600	30303		
			9:04:31	15.08	20.21	124.63	0.02	0.02	600	28846		
			9:04:32	15.56	20.21	124.65	0.02	0.02	600	29412		
			9:04:33	15.88	20.21	124.61	0.02	0.02	600	26432		
			9:04:34	16.12	20.21	124.67	0.02	0.02	600	30000		
			9:04:35	16.09	20.21	124.61	0.02	0.02	600	31088		
			9:04:36	16.08	20.21	124.70	0.02	0.02	600	30457		
			9:04:37	16.04	20.21	124.72	0.02	0.02	600	29126		
			9:04:38	16.02	20.21	124.74	0.04	0.04	600	15789		
			9:04:39	15.94	20.21	124.70	0.02	0.02	600	29412		
			9:04:40	16.03	20.21	124.65	0.02	0.02	600	27778		
			9:04:41	15.99	20.21	124.68	0.02	0.02	600	28302		
			9:04:42	15.97	20.21	124.70	0.03	0.03	600	17647		

**TABLE D-1**

Profile BKGRD-01 on September 21, 2022 (0900-0907 hours PDT) located 240 feet south of outfall diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:04:43	16.01	20.21	124.68	0.02	0.02	600	29412		
			9:04:44	15.97	20.21	124.73	0.03	0.03	600	22472		
			9:04:45	16.06	20.21	124.68	0.04	0.04	600	16393		
			9:04:46	16.06	20.21	124.70	0.03	0.03	600	20408		
			9:04:47	16.05	20.21	124.74	0.02	0.02	600	28302		
			9:04:48	16.02	20.21	124.72	0.02	0.02	600	30303		
			9:04:49	16.06	20.21	124.68	0.02	0.02	600	30769		
			9:04:50	16.13	20.21	124.78	0.02	0.02	600	27907		
			9:04:51	16.04	20.21	124.78	0.02	0.02	600	30457		
			9:04:52	16.13	20.21	124.74	0.02	0.02	600	28302		
			9:04:53	16.08	20.21	124.75	0.02	0.02	600	29126		
			9:04:54	16.08	20.21	124.74	0.02	0.02	600	31414		
			9:04:55	16.12	20.21	124.74	0.02	0.02	600	30000		
			9:04:56	16.12	20.21	124.78	0.02	0.02	600	27778		
			9:04:57	16.09	20.21	124.74	0.02	0.02	600	30303		
			9:04:58	16.13	20.21	124.76	0.02	0.02	600	28846		
			9:04:59	16.14	20.21	124.74	0.02	0.02	600	29412		
			9:05:00	16.14	20.21	124.68	0.02	0.02	600	26432		
			9:05:01	16.09	20.22	124.63	0.02	0.02	600	30000		
			9:05:02	16.10	20.22	124.63	0.02	0.02	600	31088		
			9:05:03	16.14	20.22	124.58	0.02	0.02	600	30457		
			9:05:04	16.14	20.22	124.65	0.02	0.02	600	29126		
			9:05:05	16.14	20.23	124.65	0.04	0.04	600	15789		
			9:05:06	16.19	20.22	124.61	0.02	0.02	600	29412		
			9:05:07	16.13	20.22	124.61	0.02	0.02	600	27778		
			9:05:08	16.11	20.23	124.57	0.02	0.02	600	28302		
			9:05:09	16.15	20.22	124.72	0.03	0.03	600	17647		
			9:05:10	16.07	20.21	124.65	0.02	0.02	600	29412		
			9:05:11	16.10	20.23	124.53	0.03	0.03	600	22472		
			9:05:12	16.12	20.23	124.42	0.04	0.04	600	16393		
			9:05:13	16.03	20.24	124.42	0.03	0.03	600	20408		
			9:05:14	16.05	20.24	124.44	0.02	0.02	600	28302		
			9:05:15	16.03	20.24	124.42	0.02	0.02	600	30303		
			9:05:16	16.01	20.24	124.46	0.02	0.02	600	30769		
			9:05:17	15.98	20.24	124.46	0.02	0.02	600	27907		
			9:05:18	16.01	20.23	124.49	0.02	0.02	600	30457		



**TABLE D-1**

Profile BKGRD-01 on September 21, 2022 (0900-0907 hours PDT) located 240 feet south of outfall diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:05:19	15.98	20.23	124.46	0.02	0.02	600	28302		
			9:05:20	15.98	20.23	124.49	0.02	0.02	600	29126		
			9:05:21	15.96	20.23	124.49	0.02	0.02	600	31414		
			9:05:22	15.96	20.23	124.52	0.04	0.04	600	16393		
			9:05:23	16.01	20.24	124.40	0.03	0.03	600	20408		
			9:05:24	16.06	20.24	124.53	0.02	0.02	600	28302		
			9:05:25	16.07	20.23	124.57	0.02	0.02	600	30303		
			9:05:26	16.05	20.23	124.55	0.02	0.02	600	30769		
			9:05:27	15.99	20.23	124.49	0.02	0.02	600	27907		
			9:05:28	16.05	20.23	124.46	0.02	0.02	600	30457		
			9:05:29	16.00	20.23	124.46	0.02	0.02	600	28302		
			9:05:30	15.97	20.23	124.49	0.02	0.02	600	29126		
			9:05:31	16.08	20.23	124.61	0.02	0.02	600	31414		
			9:05:32	16.03	20.22	124.61	0.02	0.02	600	30000		
			9:05:33	16.00	20.23	124.53	0.02	0.02	600	27778		
			9:05:34	16.03	20.24	124.41	0.02	0.02	600	30303		
			9:05:35	16.01	20.26	124.25	0.02	0.02	600	28846		
			9:05:36	15.96	20.27	124.20	0.02	0.02	600	29412		
			9:05:37	15.99	20.26	124.22	0.02	0.02	600	26432		
			9:05:38	16.02	20.26	124.22	0.02	0.02	600	30000		
			9:05:39	15.95	20.26	124.25	0.02	0.02	600	31088		
			9:05:40	16.01	20.26	124.25	0.02	0.02	600	30457		
			9:05:41	15.98	20.26	124.26	0.02	0.02	600	29126		
			9:05:42	15.95	20.25	124.20	0.02	0.02	600	28571		
			9:05:43	16.47	20.26	124.22	0.04	0.04	600	15873		
			9:05:44	17.41	20.26	124.20	0.08	0.08	600	7947		
			9:05:45	18.46	20.26	124.27	0.02	0.02	600	31088		
			9:05:46	19.66	20.26	124.24	0.07	0.07	600	8785		
			9:05:47	20.72	20.26	124.25	0.10	0.10	600	5837		
			9:05:48	21.65	20.26	124.27	0.02	0.02	600	28037		
			9:05:49	22.70	20.26	124.24	0.07	0.07	600	8523		
			9:05:50	23.66	20.26	124.25	0.02	0.02	600	27778		
			9:05:51	23.72	20.26	124.26	0.02	0.02	600	30303		
			9:05:52	24.37	20.25	124.32	0.02	0.02	600	28846		
			9:05:53	25.60	20.25	124.34	0.02	0.02	600	29412		
			9:05:54	25.97	20.25	124.32	0.02	0.02	600	26432		

**TABLE D-1**

Profile BKGRD-01 on September 21, 2022 (0900-0907 hours PDT) located 240 feet south of outfall diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:05:55	25.98	20.25	124.27	0.02	0.02	600	30000		
			9:05:56	26.06	20.25	124.34	0.02	0.02	600	31088		
			9:05:57	26.05	20.25	124.30	0.02	0.02	600	30457		
			9:05:58	26.01	20.25	124.32	0.02	0.02	600	29126		
			9:05:59	25.87	20.25	124.34	0.04	0.04	600	15789		
			9:06:00	25.71	20.24	124.44	0.02	0.02	600	29412		
			9:06:01	25.73	20.24	124.42	0.02	0.02	600	27778		
			9:06:02	25.71	20.24	124.36	0.02	0.02	600	28302		
			9:06:03	25.72	20.24	124.36	0.03	0.03	600	17647		
			9:06:04	25.78	20.24	124.44	0.02	0.02	600	29412		
			9:06:05	25.79	20.23	124.46	0.03	0.03	600	22472		
			9:06:06	25.78	20.23	124.46	0.04	0.04	600	16393		
			9:06:07	25.74	20.23	124.51	0.03	0.03	600	20408		
			9:06:08	25.69	20.23	124.49	0.02	0.02	600	28302		
			9:06:09	25.55	20.23	124.44	0.02	0.02	600	30303		
			9:06:10	25.54	20.23	124.50	0.02	0.02	600	30769		
			9:06:11	25.59	20.23	124.46	0.02	0.02	600	27907		
			9:06:12	25.54	20.23	124.51	0.02	0.02	600	30457		
			9:06:13	25.54	20.23	124.49	0.02	0.02	600	28302		
			9:06:14	25.56	20.23	124.46	0.02	0.02	600	29126		
			9:06:15	25.66	20.23	124.49	0.02	0.02	600	31414		
			9:06:16	25.70	20.23	124.40	0.12	0.12	600	4890		
			9:06:17	25.81	20.23	124.49	0.06	0.06	600	9449		
			9:06:18	25.88	20.23	124.44	0.02	0.02	600	25316		
			9:06:19	25.84	20.23	124.42	0.02	0.02	600	29126		
			9:06:20	25.82	20.23	124.50	0.02	0.02	600	30769		
			9:06:21	25.79	20.23	124.51	0.02	0.02	600	28571		
			9:06:22	25.97	20.23	124.46	0.03	0.03	600	21978		
			9:06:23	26.75	20.23	124.49	0.04	0.04	600	13514		
			9:06:24	28.56	20.23	124.44	0.04	0.04	600	16667		
			9:06:25	30.74	20.23	124.46	0.02	0.02	600	29126		
			9:06:26	32.56	20.23	124.44	0.02	0.02	600	26201		
			9:06:27	33.06	20.23	124.44	0.02	0.02	600	30457		
			9:06:28	33.09	20.23	124.44	0.09	0.09	600	6410		
			9:06:29	33.06	20.23	124.40	0.02	0.02	600	28846		
			9:06:30	32.72	20.23	124.44	0.02	0.02	600	31915		

**TABLE D-1**

Profile BKGRD-01 on September 21, 2022 (0900-0907 hours PDT) located 240 feet south of outfall diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:06:31	32.53	20.23	124.42	0.02	0.02	600	30769		
			9:06:32	32.36	20.23	124.46	0.02	0.02	600	28571		
			9:06:33	32.24	20.23	124.44	0.02	0.02	600	29703		
			9:06:34	32.30	20.23	124.49	0.02	0.02	600	28571		
			9:06:35	32.48	20.23	124.42	0.02	0.02	600	27149		
			9:06:36	32.58	20.23	124.40	0.06	0.06	600	9983		
			9:06:37	32.56	20.23	124.42	0.02	0.02	600	28571		
			9:06:38	32.44	20.23	124.44	0.02	0.02	600	27397		
			9:06:39	32.37	20.23	124.49	0.02	0.02	600	28846		
			9:06:40	32.16	20.23	124.44	0.02	0.02	600	26201		
			9:06:41	32.03	20.23	124.49	0.02	0.02	600	28037		
			9:06:42	31.79	20.23	124.46	0.02	0.02	600	27650		
			9:06:43	31.61	20.23	124.44	0.02	0.02	600	30000		
			9:06:44	31.33	20.23	124.42	0.02	0.02	600	28302		
			9:06:45	30.99	20.23	124.44	0.02	0.02	600	30769		
			9:06:46	30.76	20.23	124.51	0.02	0.02	600	26432		
			9:06:47	30.63	20.23	124.44	0.02	0.02	600	30000		
			9:06:48	30.49	20.23	124.51	0.02	0.02	600	29703		
			9:06:49	30.29	20.23	124.42	0.02	0.02	600	26906		
			9:06:50	29.98	20.23	124.42	0.02	0.02	600	28571		
			9:06:51	29.61	20.23	124.46	0.02	0.02	600	30769		
			9:06:52	29.01	20.23	124.42	0.02	0.02	600	27778		
			9:06:53	28.46	20.23	124.46	0.02	0.02	600	28302		
			9:06:54	27.87	20.23	124.49	0.02	0.02	600	30612		
			9:06:55	27.22	20.23	124.49	0.02	0.02	600	28571		
			9:06:56	26.63	20.23	124.49	0.02	0.02	600	28302		
			9:06:57	25.99	20.23	124.51	0.02	0.02	600	29412		
			9:06:58	25.29	20.23	124.51	0.02	0.02	600	30151		
			9:06:59	24.86	20.23	124.49	0.02	0.02	600	28846		
			9:07:00	24.83	20.23	124.51	0.22	0.22	600	2769		
			9:07:01	25.41	20.23	124.46	0.02	0.02	600	24194		
			9:07:02	26.51	20.23	124.53	0.02	0.02	600	28846		
			9:07:03	27.76	20.22	124.49	0.02	0.02	600	30303		
			9:07:04	29.01	20.23	124.44	0.22	0.22	600	2769		
			9:07:05	30.31	20.23	124.46	0.22	0.22	600	2769		
			9:07:06	31.56	20.23	124.49	0.07	0.07	600	8915		

**TABLE D-1**

Profile BKGRD-01 on September 21, 2022 (0900-0907 hours PDT) located 240 feet south of outfall diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:07:07	32.65	20.23	124.46	0.02	0.02	600	29126		
			9:07:08	33.51	20.23	124.48	0.02	0.02	600	30928		
			9:07:09	34.18	20.23	124.51	0.02	0.02	600	27650		
			9:07:10	34.58	20.23	124.55	0.02	0.02	600	28571		
			9:07:11	34.84	20.23	124.53	0.02	0.02	600	31088		
			9:07:12	34.98	20.23	124.57	0.02	0.02	600	29412		
			9:07:13	35.14	20.22	124.59	0.02	0.02	600	29412		
			9:07:14	35.06	20.22	124.61	0.02	0.02	600	30000		
			9:07:15	35.19	20.22	124.61	0.02	0.02	600	27027		
			9:07:16	35.17	20.22	124.59	0.02	0.02	600	29126		
			9:07:17	35.13	20.22	124.56	0.02	0.02	600	25974		
			9:07:18	35.09	20.22	124.55	0.02	0.02	600	30457		
			9:07:19	35.08	20.22	124.53	0.02	0.02	600	28302		
			9:07:20	35.11	20.22	124.59	0.02	0.02	600	28571		
			9:07:21	35.25	20.22	124.65	0.02	0.02	600	28302		
			9:07:22	35.21	20.22	124.72	0.02	0.02	600	27778		
			9:07:23	35.28	20.21	124.65	0.02	0.02	600	29126		
			9:07:24	35.17	20.21	124.68	0.02	0.02	600	30457		
			9:07:25	35.08	20.21	124.63	0.02	0.02	600	29703		
			9:07:26	35.19	20.21	124.71	0.02	0.02	600	28037		

**TABLE D-2**

Profile BKGRD-02 on September 21, 2022 (0914-0922 hours PDT) located 700 feet south of outfall diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
BKGRD-02 (700 ft South)	49 ft	0.53 m/sec 351 deg. (mag.) Ebb tide	9:15:19	2.78	20.04	123.08	0.02	0.02	715	37435		No dye detected in background
			9:15:20	2.84	20.03	123.04	0.02	0.02	715	38235		
			9:15:21	2.77	20.03	123.04	0.02	0.02	715	36294		
			9:15:22	2.88	20.02	123.04	0.02	0.02	715	34375		
			9:15:23	2.81	20.02	123.02	0.02	0.02	715	37831		
			9:15:24	2.82	20.01	122.93	0.02	0.02	715	37435		
			9:15:25	2.81	20.01	122.98	0.02	0.02	715	36667		
			9:15:26	2.87	20.01	123.00	0.02	0.02	715	37047		
			9:15:27	2.80	20.01	123.06	0.02	0.02	715	35750		
			9:15:28	2.79	20.05	123.04	0.02	0.02	715	40625		
			9:15:29	2.78	20.10	123.15	0.02	0.02	715	37831		
			9:15:30	2.73	20.15	123.12	0.02	0.02	715	35750		
			9:15:31	2.77	20.18	123.23	0.02	0.02	715	36111		
			9:15:32	2.79	20.20	123.15	0.02	0.02	715	42059		
			9:15:33	2.79	20.20	123.04	0.02	0.02	715	39503		
			9:15:34	2.78	20.16	123.00	0.02	0.02	715	38649		
			9:15:35	2.77	20.05	123.02	0.02	0.02	715	36294		
			9:15:36	2.71	20.00	123.04	0.02	0.02	715	38649		
			9:15:37	2.82	19.99	123.00	0.02	0.02	715	38235		
			9:15:38	2.77	19.99	123.00	0.02	0.02	715	36667		
			9:15:39	2.79	20.00	123.17	0.02	0.02	715	40395		
			9:15:40	2.75	20.08	123.74	0.02	0.02	715	38649		
			9:15:41	2.77	20.25	123.96	0.02	0.02	715	41329		
			9:15:42	2.76	20.26	123.92	0.02	0.02	715	36667		
			9:15:43	2.76	20.27	123.94	0.02	0.02	715	37831		
			9:15:44	2.82	20.27	123.94	0.02	0.02	715	36111		
9:15:45	2.78	20.27	124.01	0.02	0.02	715	37047					
9:15:46	2.77	20.26	123.96	0.02	0.02	715	38649					
9:15:47	2.78	20.27	123.96	0.02	0.02	715	41329					
9:15:48	2.76	20.27	123.95	0.02	0.02	715	37435					
9:15:49	2.74	20.27	123.92	0.02	0.02	715	37435					
9:15:50	2.74	20.27	123.92	0.02	0.02	715	38235					
9:15:51	2.74	20.27	123.98	0.02	0.02	715	38235					
9:15:52	2.72	20.27	123.90	0.02	0.02	715	36667					
9:15:53	2.73	20.27	123.94	0.02	0.02	715	36294					
9:15:54	2.72	20.26	123.98	0.02	0.02	715	39071					

**TABLE D-2**

Profile BKGRD-02 on September 21, 2022 (0914-0922 hours PDT) located 700 feet south of outfall diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:15:55	2.72	20.26	123.90	0.02	0.02	715	37047		
			9:15:56	2.73	20.26	123.96	0.02	0.02	715	40395		
			9:15:57	2.76	20.26	123.94	0.02	0.02	715	37831		
			9:15:58	2.77	20.26	123.93	0.02	0.02	600	30928		
			9:15:59	2.74	20.27	123.96	0.02	0.02	600	32787		
			9:16:00	2.71	20.27	123.98	0.02	0.02	600	31746		
			9:16:01	2.74	20.27	123.98	0.02	0.02	600	31414		
			9:16:02	2.73	20.27	123.92	0.02	0.02	600	32432		
			9:16:03	2.70	20.27	123.96	0.02	0.02	600	31088		
			9:16:04	2.77	20.27	123.98	0.02	0.02	600	32787		
			9:16:05	2.76	20.27	123.92	0.02	0.02	600	34091		
			9:16:06	2.74	20.27	123.94	0.02	0.02	600	31414		
			9:16:07	2.77	20.26	123.96	0.02	0.02	600	32432		
			9:16:08	2.74	20.26	123.99	0.02	0.02	600	32787		
			9:16:09	2.73	20.26	124.01	0.02	0.02	600	32086		
			9:16:10	2.78	20.26	123.96	0.02	0.02	600	35714		
			9:16:11	2.73	20.26	123.98	0.02	0.02	600	33149		
			9:16:12	2.81	20.26	123.94	0.02	0.02	600	33520		
			9:16:13	2.74	20.26	124.03	0.02	0.02	600	33520		
			9:16:14	2.76	20.26	123.98	0.02	0.02	600	32787		
			9:16:15	2.75	20.26	123.98	0.02	0.02	600	33149		
			9:16:16	2.78	20.26	123.98	0.02	0.02	600	32086		
			9:16:17	2.75	20.26	123.94	0.02	0.02	600	33149		
			9:16:18	2.77	20.26	123.97	0.02	0.02	600	33898		
			9:16:19	2.77	20.26	123.98	0.02	0.02	600	29412		
			9:16:20	2.76	20.26	123.96	0.02	0.02	600	36145		
			9:16:21	2.75	20.26	123.98	0.02	0.02	600	31088		
			9:16:22	2.75	20.26	123.96	0.02	0.02	600	34091		
			9:16:23	2.76	20.26	123.98	0.02	0.02	600	30151		
			9:16:24	2.75	20.26	124.01	0.02	0.02	600	31414		
			9:16:25	2.74	20.26	123.98	0.02	0.02	600	31414		
			9:16:26	2.77	20.26	124.01	0.02	0.02	600	31414		
			9:16:27	2.75	20.26	124.01	0.02	0.02	600	30928		
			9:16:28	2.72	20.26	124.03	0.02	0.02	600	31088		
			9:16:29	2.76	20.26	124.05	0.02	0.02	600	30769		
			9:16:30	2.75	20.26	124.03	0.02	0.02	600	33520		

**TABLE D-2**

Profile BKGRD-02 on September 21, 2022 (0914-0922 hours PDT) located 700 feet south of outfall diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:16:31	2.75	20.26	124.03	0.02	0.02	600	33898		
			9:16:32	2.73	20.25	124.01	0.02	0.02	600	30303		
			9:16:33	2.68	20.25	124.09	0.02	0.02	600	33520		
			9:16:34	2.68	20.24	124.24	0.02	0.02	600	33149		
			9:16:35	2.67	20.24	124.24	0.02	0.02	600	32086		
			9:16:36	2.66	20.23	124.25	0.02	0.02	600	30769		
			9:16:37	2.71	20.23	124.26	0.02	0.02	600	34286		
			9:16:38	2.70	20.23	124.24	0.02	0.02	600	32086		
			9:16:39	2.71	20.23	124.22	0.02	0.02	600	31414		
			9:16:40	2.67	20.24	124.18	0.02	0.02	600	31088		
			9:16:41	2.64	20.24	124.24	0.02	0.02	600	31088		
			9:16:42	2.69	20.24	124.23	0.02	0.02	600	32086		
			9:16:43	2.64	20.24	124.24	0.02	0.02	600	30928		
			9:16:44	2.66	20.24	124.22	0.02	0.02	600	33520		
			9:16:45	2.61	20.23	124.26	0.02	0.02	600	33520		
			9:16:46	2.79	20.23	124.22	0.02	0.02	600	34286		
			9:16:47	3.43	20.23	124.26	0.02	0.02	600	33520		
			9:16:48	5.81	20.24	124.24	0.02	0.02	600	32787		
			9:16:49	7.77	20.24	124.20	0.02	0.02	600	34091		
			9:16:50	7.64	20.24	124.20	0.02	0.02	600	33898		
			9:16:51	7.28	20.24	124.20	0.02	0.02	600	32787		
			9:16:52	7.40	20.24	124.21	0.02	0.02	600	37037		
			9:16:53	7.42	20.23	124.26	0.02	0.02	600	33520		
			9:16:54	7.51	20.23	124.29	0.02	0.02	600	34884		
			9:16:55	7.52	20.23	124.26	0.02	0.02	600	31746		
			9:16:56	7.53	20.23	124.27	0.02	0.02	600	32432		
			9:16:57	7.59	20.23	124.26	0.02	0.02	600	33149		
			9:16:58	7.63	20.23	124.23	0.02	0.02	600	30928		
			9:16:59	7.52	20.23	124.25	0.02	0.02	600	32787		
			9:17:00	7.62	20.23	124.29	0.02	0.02	600	31414		
			9:17:01	7.51	20.23	124.24	0.02	0.02	600	34286		
			9:17:02	7.55	20.23	124.32	0.02	0.02	600	33520		
			9:17:03	7.53	20.23	124.25	0.02	0.02	600	32432		
			9:17:04	7.51	20.23	124.20	0.02	0.02	600	30769		
			9:17:05	7.52	20.23	124.26	0.02	0.02	600	34682		
			9:17:06	7.63	20.23	124.24	0.02	0.02	600	31414		

**TABLE D-2**

Profile BKGRD-02 on September 21, 2022 (0914-0922 hours PDT) located 700 feet south of outfall diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:17:07	7.62	20.23	124.27	0.02	0.02	600	30769		
			9:17:08	7.64	20.23	124.27	0.02	0.02	600	31088		
			9:17:09	7.64	20.23	124.27	0.02	0.02	600	35088		
			9:17:10	7.56	20.23	124.30	0.02	0.02	600	33149		
			9:17:11	7.53	20.23	124.26	0.02	0.02	600	36145		
			9:17:12	7.50	20.23	124.29	0.02	0.02	600	33149		
			9:17:13	7.53	20.23	124.30	0.02	0.02	600	32086		
			9:17:14	7.52	20.23	124.26	0.02	0.02	600	34286		
			9:17:15	7.48	20.23	124.27	0.02	0.02	600	32432		
			9:17:16	7.55	20.23	124.24	0.02	0.02	600	32787		
			9:17:17	7.51	20.23	124.26	0.02	0.02	600	34091		
			9:17:18	7.56	20.23	124.27	0.02	0.02	600	30457		
			9:17:19	7.61	20.23	124.26	0.02	0.02	600	32787		
			9:17:20	7.63	20.23	124.27	0.02	0.02	600	29703		
			9:17:21	7.58	20.23	124.25	0.02	0.02	600	34884		
			9:17:22	7.60	20.23	124.22	0.02	0.02	600	31414		
			9:17:23	7.67	20.24	124.25	0.02	0.02	600	32432		
			9:17:24	7.62	20.24	124.24	0.02	0.02	600	34286		
			9:17:25	7.63	20.24	124.24	0.02	0.02	600	32432		
			9:17:26	7.63	20.24	124.21	0.02	0.02	600	31414		
			9:17:27	7.62	20.24	124.22	0.02	0.02	600	32787		
			9:17:28	7.66	20.24	124.22	0.02	0.02	600	34091		
			9:17:29	7.62	20.24	124.24	0.02	0.02	600	33149		
			9:17:30	7.68	20.24	124.27	0.02	0.02	600	33149		
			9:17:31	7.61	20.24	124.22	0.02	0.02	600	32086		
			9:17:32	7.63	20.24	124.27	0.02	0.02	600	34682		
			9:17:33	7.62	20.24	124.24	0.02	0.02	600	32787		
			9:17:34	7.68	20.24	124.22	0.02	0.02	600	32432		
			9:17:35	7.67	20.24	124.25	0.02	0.02	600	34483		
			9:17:36	7.70	20.23	124.29	0.02	0.02	600	34286		
			9:17:37	7.69	20.23	124.29	0.02	0.02	600	31414		
			9:17:38	7.68	20.23	124.30	0.02	0.02	600	34091		
			9:17:39	7.67	20.23	124.27	0.02	0.02	600	33520		
			9:17:40	7.60	20.23	124.30	0.02	0.02	600	30928		
			9:17:41	7.60	20.23	124.27	0.02	0.02	600	33149		
			9:17:42	7.61	20.23	124.27	0.02	0.02	600	31746		



**TABLE D-2**

Profile BKGRD-02 on September 21, 2022 (0914-0922 hours PDT) located 700 feet south of outfall diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:17:43	7.65	20.23	124.29	0.02	0.02	600	35088		
			9:17:44	7.60	20.23	124.30	0.02	0.02	600	31414		
			9:17:45	7.64	20.23	124.38	0.02	0.02	600	30303		
			9:17:46	7.68	20.22	124.38	0.02	0.02	600	32432		
			9:17:47	7.57	20.22	124.34	0.09	0.09	600	7026		
			9:17:48	7.62	20.22	124.40	0.02	0.02	600	33520		
			9:17:49	7.68	20.22	124.42	0.02	0.02	600	34091		
			9:17:50	7.65	20.22	124.49	0.02	0.02	600	35294		
			9:17:51	7.66	20.21	124.46	0.02	0.02	600	33149		
			9:17:52	7.65	20.21	124.57	0.02	0.02	600	30303		
			9:17:53	7.62	20.21	124.55	0.02	0.02	600	31414		
			9:17:54	7.60	20.21	124.52	0.02	0.02	600	33520		
			9:17:55	7.58	20.21	124.51	0.02	0.02	600	34091		
			9:17:56	7.68	20.22	124.40	0.02	0.02	600	32086		
			9:17:57	7.65	20.22	124.38	0.07	0.07	600	8721		
			9:17:58	7.68	20.22	124.42	0.02	0.02	600	31746		
			9:17:59	7.62	20.22	124.42	0.02	0.02	600	32432		
			9:18:00	7.68	20.22	124.38	0.02	0.02	600	30303		
			9:18:01	7.69	20.22	124.40	0.02	0.02	600	35088		
			9:18:02	7.66	20.22	124.38	0.02	0.02	600	32432		
			9:18:03	7.71	20.22	124.36	0.02	0.02	600	33520		
			9:18:04	7.67	20.22	124.40	0.02	0.02	600	33149		
			9:18:05	7.66	20.22	124.40	0.02	0.02	600	34091		
			9:18:06	7.63	20.22	124.38	0.02	0.02	600	34483		
			9:18:07	7.59	20.22	124.40	0.02	0.02	600	29126		
			9:18:08	7.63	20.22	124.36	0.02	0.02	600	30151		
			9:18:09	7.69	20.22	124.34	0.02	0.02	600	31088		
			9:18:10	7.66	20.22	124.36	0.02	0.02	600	33149		
			9:18:11	7.72	20.22	124.40	0.02	0.02	600	32432		
			9:18:12	8.04	20.22	124.44	0.02	0.02	600	31746		
			9:18:13	8.57	20.22	124.42	0.02	0.02	600	32787		
			9:18:14	9.31	20.22	124.40	0.02	0.02	600	31746		
			9:18:15	11.06	20.22	124.42	0.02	0.02	600	32086		
			9:18:16	12.79	20.22	124.40	0.02	0.02	600	33708		
			9:18:17	14.09	20.22	124.40	0.02	0.02	600	34682		
			9:18:18	15.34	20.22	124.42	0.02	0.02	600	31088		

**TABLE D-2**

Profile BKGRD-02 on September 21, 2022 (0914-0922 hours PDT) located 700 feet south of outfall diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:18:19	16.17	20.22	124.42	0.02	0.02	600	34091		
			9:18:20	16.65	20.22	124.44	0.02	0.02	600	32086		
			9:18:21	17.17	20.21	124.44	0.02	0.02	600	31414		
			9:18:22	17.50	20.21	124.46	0.02	0.02	600	32432		
			9:18:23	17.65	20.21	124.52	0.02	0.02	600	31088		
			9:18:24	17.69	20.21	124.49	0.02	0.02	600	35714		
			9:18:25	17.73	20.21	124.51	0.02	0.02	600	32432		
			9:18:26	17.93	20.21	124.53	0.02	0.02	600	31746		
			9:18:27	17.98	20.21	124.49	0.02	0.02	600	31746		
			9:18:28	17.94	20.21	124.49	0.02	0.02	600	31746		
			9:18:29	17.88	20.21	124.49	0.02	0.02	600	31746		
			9:18:30	17.96	20.21	124.46	0.02	0.02	600	32432		
			9:18:31	17.83	20.21	124.53	0.02	0.02	600	35294		
			9:18:32	17.93	20.21	124.53	0.02	0.02	600	34091		
			9:18:33	17.83	20.21	124.49	0.02	0.02	600	32086		
			9:18:34	17.94	20.21	124.44	0.02	0.02	600	32787		
			9:18:35	17.89	20.21	124.42	0.02	0.02	600	32432		
			9:18:36	17.93	20.21	124.49	0.02	0.02	600	31746		
			9:18:37	17.87	20.21	124.49	0.02	0.02	600	31088		
			9:18:38	17.91	20.21	124.44	0.02	0.02	600	32787		
			9:18:39	17.92	20.21	124.49	0.02	0.02	600	33149		
			9:18:40	17.89	20.21	124.49	0.02	0.02	600	32787		
			9:18:41	17.92	20.21	124.46	0.02	0.02	600	34483		
			9:18:42	17.94	20.21	124.49	0.02	0.02	600	33149		
			9:18:43	17.93	20.21	124.51	0.02	0.02	600	31088		
			9:18:44	17.92	20.21	124.49	0.02	0.02	600	33333		
			9:18:45	17.92	20.21	124.49	0.02	0.02	600	31088		
			9:18:46	17.94	20.21	124.53	0.02	0.02	600	32787		
			9:18:47	17.90	20.21	124.51	0.02	0.02	600	32787		
			9:18:48	17.93	20.21	124.49	0.02	0.02	600	32086		
			9:18:49	17.89	20.21	124.46	0.02	0.02	600	32432		
			9:18:50	17.93	20.21	124.51	0.02	0.02	600	30303		
			9:18:51	17.90	20.21	124.46	0.02	0.02	600	36585		
			9:18:52	17.87	20.21	124.50	0.02	0.02	600	34884		
			9:18:53	17.87	20.21	124.46	0.02	0.02	600	32787		
			9:18:54	17.86	20.21	124.44	0.02	0.02	600	32787		

**TABLE D-2**

Profile BKGRD-02 on September 21, 2022 (0914-0922 hours PDT) located 700 feet south of outfall diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:18:55	17.85	20.22	124.32	0.02	0.02	600	35714		
			9:18:56	17.92	20.22	124.36	0.02	0.02	600	38462		
			9:18:57	17.89	20.23	124.32	0.02	0.02	600	29412		
			9:18:58	17.94	20.23	124.34	0.02	0.02	600	35714		
			9:18:59	17.91	20.22	124.38	0.02	0.02	600	33149		
			9:19:00	17.92	20.23	124.26	0.02	0.02	600	30769		
			9:19:01	17.91	20.24	124.22	0.02	0.02	600	32787		
			9:19:02	17.92	20.24	124.22	0.02	0.02	600	34483		
			9:19:03	17.89	20.24	124.22	0.02	0.02	600	33149		
			9:19:04	17.88	20.24	124.23	0.02	0.02	600	30151		
			9:19:05	17.86	20.24	124.25	0.02	0.02	600	31746		
			9:19:06	17.86	20.24	124.22	0.02	0.02	600	32432		
			9:19:07	17.79	20.24	124.20	0.02	0.02	600	33520		
			9:19:08	17.80	20.24	124.22	0.02	0.02	600	31746		
			9:19:09	17.80	20.24	124.27	0.02	0.02	600	33898		
			9:19:10	17.76	20.24	124.29	0.02	0.02	600	30000		
			9:19:11	17.80	20.24	124.22	0.02	0.02	600	33520		
			9:19:12	17.80	20.24	124.24	0.02	0.02	600	34286		
			9:19:13	17.82	20.24	124.29	0.02	0.02	600	29703		
			9:19:14	17.78	20.24	124.27	0.02	0.02	600	32086		
			9:19:15	17.77	20.24	124.20	0.02	0.02	600	31414		
			9:19:16	17.76	20.24	124.26	0.02	0.02	600	31414		
			9:19:17	17.76	20.24	124.23	0.02	0.02	600	32086		
			9:19:18	17.74	20.24	124.27	0.02	0.02	600	30457		
			9:19:19	17.73	20.24	124.27	0.02	0.02	600	28846		
			9:19:20	17.63	20.24	124.27	0.02	0.02	600	31746		
			9:19:21	17.62	20.24	124.22	0.02	0.02	600	31414		
			9:19:22	17.58	20.24	124.22	0.02	0.02	600	30769		
			9:19:23	17.51	20.24	124.26	0.02	0.02	600	31088		
			9:19:24	17.43	20.24	124.29	0.02	0.02	600	30000		
			9:19:25	17.37	20.24	124.22	0.02	0.02	600	34091		
			9:19:26	17.38	20.23	124.31	0.02	0.02	600	31746		
			9:19:27	17.30	20.23	124.27	0.02	0.02	600	30000		
			9:19:28	17.29	20.23	124.29	0.02	0.02	600	30303		
			9:19:29	17.27	20.23	124.30	0.02	0.02	600	35294		
			9:19:30	17.29	20.23	124.30	0.02	0.02	600	33149		

**TABLE D-2**

Profile BKGRD-02 on September 21, 2022 (0914-0922 hours PDT) located 700 feet south of outfall diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:19:31	17.24	20.23	124.29	0.02	0.02	600	32432		
			9:19:32	17.34	20.23	124.30	0.02	0.02	600	30457		
			9:19:33	17.33	20.23	124.34	0.02	0.02	600	32432		
			9:19:34	17.34	20.23	124.30	0.02	0.02	600	32086		
			9:19:35	17.40	20.23	124.34	0.02	0.02	600	30769		
			9:19:36	17.38	20.23	124.34	0.02	0.02	600	33898		
			9:19:37	17.36	20.23	124.34	0.02	0.02	600	32432		
			9:19:38	17.30	20.23	124.32	0.02	0.02	600	34682		
			9:19:39	17.34	20.23	124.32	0.02	0.02	600	30769		
			9:19:40	17.29	20.23	124.33	0.02	0.02	600	31746		
			9:19:41	17.28	20.23	124.32	0.02	0.02	600	30303		
			9:19:42	17.23	20.23	124.34	0.02	0.02	600	31088		
			9:19:43	17.09	20.23	124.32	0.02	0.02	600	32432		
			9:19:44	17.18	20.23	124.32	0.02	0.02	600	34682		
			9:19:45	17.17	20.23	124.31	0.02	0.02	600	31414		
			9:19:46	17.30	20.23	124.34	0.02	0.02	600	31414		
			9:19:47	17.65	20.23	124.34	0.02	0.02	600	32086		
			9:19:48	18.66	20.23	124.25	0.02	0.02	600	32086		
			9:19:49	20.72	20.24	124.20	0.02	0.02	600	30769		
			9:19:50	21.57	20.25	124.13	0.02	0.02	600	30457		
			9:19:51	23.37	20.25	124.22	0.02	0.02	600	32787		
			9:19:52	24.56	20.25	124.18	0.02	0.02	600	31088		
			9:19:53	26.01	20.25	124.18	0.02	0.02	600	33898		
			9:19:54	26.28	20.25	124.18	0.02	0.02	600	31746		
			9:19:55	26.13	20.25	124.18	0.02	0.02	600	30928		
			9:19:56	26.00	20.25	124.15	0.02	0.02	600	32787		
			9:19:57	26.02	20.25	124.18	0.02	0.02	600	31746		
			9:19:58	26.06	20.25	124.15	0.02	0.02	600	31414		
			9:19:59	26.20	20.25	124.22	0.02	0.02	600	32432		
			9:20:00	26.88	20.25	124.26	0.02	0.02	600	31088		
			9:20:01	27.35	20.24	124.24	0.02	0.02	600	32787		
			9:20:02	27.80	20.24	124.24	0.02	0.02	600	34091		
			9:20:03	27.76	20.24	124.22	0.02	0.02	600	31414		
			9:20:04	27.52	20.24	124.26	0.02	0.02	600	32432		
			9:20:05	27.31	20.24	124.20	0.02	0.02	600	32787		
			9:20:06	27.00	20.24	124.20	0.02	0.02	600	32086		

**TABLE D-2**

Profile BKGRD-02 on September 21, 2022 (0914-0922 hours PDT) located 700 feet south of outfall diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:20:07	26.53	20.24	124.27	0.02	0.02	600	35714		
			9:20:08	26.03	20.24	124.25	0.02	0.02	600	33149		
			9:20:09	25.52	20.24	124.25	0.02	0.02	600	33520		
			9:20:10	25.07	20.24	124.25	0.02	0.02	600	33520		
			9:20:11	24.62	20.24	124.27	0.02	0.02	600	32787		
			9:20:12	24.24	20.24	124.27	0.02	0.02	600	33149		
			9:20:13	23.90	20.24	124.27	0.02	0.02	600	32086		
			9:20:14	23.72	20.24	124.30	0.02	0.02	600	33149		
			9:20:15	23.85	20.24	124.27	0.02	0.02	600	33898		
			9:20:16	24.03	20.24	124.25	0.02	0.02	600	29412		
			9:20:17	24.23	20.24	124.24	0.02	0.02	600	36145		
			9:20:18	24.30	20.24	124.32	0.02	0.02	600	31088		
			9:20:19	24.20	20.24	124.29	0.02	0.02	600	34091		
			9:20:20	24.04	20.24	124.29	0.02	0.02	600	30151		
			9:20:21	24.11	20.23	124.34	0.02	0.02	600	31414		
			9:20:22	24.45	20.23	124.40	0.02	0.02	600	31414		
			9:20:23	24.61	20.22	124.36	0.02	0.02	600	31414		
			9:20:24	24.21	20.22	124.42	0.02	0.02	600	30928		
			9:20:25	23.49	20.23	124.38	0.02	0.02	600	31088		
			9:20:26	23.00	20.23	124.29	0.02	0.02	600	30769		
			9:20:27	23.06	20.23	124.32	0.02	0.02	600	33520		
			9:20:28	23.47	20.23	124.29	0.02	0.02	600	33898		
			9:20:29	24.07	20.23	124.32	0.02	0.02	600	30303		
			9:20:30	24.80	20.23	124.38	0.02	0.02	600	33520		
			9:20:31	25.38	20.23	124.34	0.02	0.02	600	33149		
			9:20:32	25.89	20.23	124.36	0.02	0.02	600	32086		
			9:20:33	26.37	20.23	124.32	0.02	0.02	600	30769		
			9:20:34	27.01	20.23	124.38	0.02	0.02	600	34286		
			9:20:35	27.58	20.22	124.36	0.02	0.02	600	32086		
			9:20:36	28.13	20.22	124.38	0.02	0.02	600	31414		
			9:20:37	28.68	20.22	124.36	0.02	0.02	600	31088		
			9:20:38	29.04	20.23	124.29	0.02	0.02	600	31088		
			9:20:39	29.31	20.23	124.30	0.02	0.02	600	32086		
			9:20:40	29.53	20.23	124.30	0.02	0.02	600	30928		
			9:20:41	29.83	20.23	124.30	0.02	0.02	600	33520		
			9:20:42	29.82	20.23	124.36	0.02	0.02	600	33520		

**TABLE D-2**

Profile BKGRD-02 on September 21, 2022 (0914-0922 hours PDT) located 700 feet south of outfall diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:20:43	30.03	20.23	124.34	0.02	0.02	600	34286		
			9:20:44	30.02	20.23	124.36	0.02	0.02	600	33520		
			9:20:45	30.15	20.23	124.40	0.02	0.02	600	32787		
			9:20:46	30.17	20.23	124.40	0.02	0.02	600	34091		
			9:20:47	30.26	20.23	124.30	0.02	0.02	600	33898		
			9:20:48	30.27	20.23	124.32	0.02	0.02	600	32787		
			9:20:49	30.31	20.23	124.36	0.02	0.02	600	37037		
			9:20:50	30.27	20.23	124.36	0.02	0.02	600	33520		
			9:20:51	30.32	20.23	124.34	0.02	0.02	600	34884		
			9:20:52	30.25	20.23	124.34	0.02	0.02	600	31746		
			9:20:53	30.28	20.23	124.36	0.02	0.02	600	32432		
			9:20:54	30.26	20.23	124.38	0.02	0.02	600	33149		
			9:20:55	30.28	20.23	124.32	0.02	0.02	600	30928		
			9:20:56	30.27	20.23	124.36	0.02	0.02	600	32787		
			9:20:57	30.26	20.23	124.32	0.02	0.02	600	31414		
			9:20:58	30.22	20.23	124.34	0.02	0.02	600	34286		
			9:20:59	30.27	20.23	124.36	0.02	0.02	600	33520		
			9:21:00	30.24	20.23	124.38	0.02	0.02	600	32432		
			9:21:01	30.29	20.23	124.32	0.02	0.02	600	30769		
			9:21:02	30.27	20.23	124.32	0.02	0.02	600	34682		
			9:21:03	30.28	20.23	124.36	0.02	0.02	600	31414		
			9:21:04	30.27	20.23	124.32	0.02	0.02	600	30769		
			9:21:05	30.25	20.23	124.36	0.02	0.02	600	31088		
			9:21:06	30.20	20.23	124.38	0.02	0.02	600	35088		
			9:21:07	30.22	20.23	124.36	0.02	0.02	600	33149		
			9:21:08	30.36	20.23	124.34	0.02	0.02	600	36145		
			9:21:09	30.85	20.23	124.40	0.02	0.02	600	33149		
			9:21:10	31.25	20.23	124.36	0.02	0.02	600	32086		
			9:21:11	33.34	20.23	124.36	0.02	0.02	600	34286		
			9:21:12	35.14	20.23	124.38	0.02	0.02	600	32432		
			9:21:13	36.66	20.23	124.40	0.02	0.02	600	32787		
			9:21:14	38.67	20.23	124.36	0.02	0.02	600	34091		
			9:21:15	39.45	20.23	124.32	0.02	0.02	600	30457		
			9:21:16	40.56	20.23	124.30	0.02	0.02	600	32787		
			9:21:17	40.65	20.23	124.34	0.02	0.02	600	29703		
			9:21:18	40.87	20.23	124.32	0.02	0.02	600	34884		

**TABLE D-2**

Profile BKGRD-02 on September 21, 2022 (0914-0922 hours PDT) located 700 feet south of outfall diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:21:19	40.82	20.23	124.29	0.02	0.02	600	31414		
			9:21:20	40.83	20.23	124.30	0.02	0.02	600	32432		
			9:21:21	40.86	20.23	124.29	0.02	0.02	600	34286		
			9:21:22	41.04	20.23	124.27	0.02	0.02	600	32432		
			9:21:23	40.83	20.23	124.27	0.02	0.02	600	31414		
			9:21:24	40.97	20.23	124.26	0.02	0.02	600	32787		
			9:21:25	40.90	20.23	124.29	0.02	0.02	600	34091		
			9:21:26	40.90	20.23	124.29	0.02	0.02	600	33149		
			9:21:27	40.92	20.23	124.30	0.02	0.02	600	33149		
			9:21:28	40.92	20.23	124.27	0.02	0.02	600	32086		
			9:21:29	40.90	20.24	124.32	0.02	0.02	600	34682		
			9:21:30	40.93	20.24	124.25	0.02	0.02	600	32787		
			9:21:31	40.82	20.24	124.29	0.02	0.02	600	32432		
			9:21:32	40.85	20.23	124.27	0.02	0.02	600	34483		
			9:21:33	40.90	20.23	124.27	0.02	0.02	600	34286		
			9:21:34	40.83	20.23	124.29	0.02	0.02	600	31414		
			9:21:35	40.90	20.23	124.27	0.02	0.02	600	34091		
			9:21:36	40.87	20.23	124.27	0.02	0.02	600	33520		
			9:21:37	40.79	20.23	124.29	0.02	0.02	600	30928		
			9:21:38	40.90	20.23	124.30	0.02	0.02	600	33149		
			9:21:39	40.83	20.23	124.27	0.02	0.02	600	31746		
			9:21:40	40.86	20.23	124.31	0.02	0.02	600	35088		
			9:21:41	40.89	20.23	124.34	0.02	0.02	600	31414		
			9:21:42	40.82	20.23	124.32	0.02	0.02	600	30303		
			9:21:43	40.90	20.23	124.32	0.02	0.02	600	32432		
			9:21:44	40.88	20.23	124.29	0.09	0.09	600	7026		
			9:21:45	40.91	20.23	124.34	0.02	0.02	600	33520		
			9:21:46	40.87	20.23	124.30	0.02	0.02	600	34091		
			9:21:47	40.90	20.23	124.34	0.02	0.02	600	35294		
			9:21:48	40.91	20.23	124.34	0.02	0.02	600	33149		
			9:21:49	40.88	20.23	124.36	0.02	0.02	600	30303		
			9:21:50	40.99	20.23	124.34	0.02	0.02	600	31414		
			9:21:51	40.86	20.23	124.34	0.02	0.02	600	33520		
			9:21:52	40.96	20.23	124.34	0.02	0.02	600	34091		
			9:21:53	40.94	20.23	124.32	0.02	0.02	600	32086		
			9:21:54	40.84	20.23	124.32	0.07	0.07	600	8721		

**TABLE D-2**

Profile BKGRD-02 on September 21, 2022 (0914-0922 hours PDT) located 700 feet south of outfall diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:21:55	41.00	20.23	124.34	0.02	0.02	600	31746		
			9:21:56	40.74	20.23	124.38	0.02	0.02	600	32432		
			9:21:57	40.88	20.23	124.38	0.02	0.02	600	30303		
			9:21:58	41.04	20.23	124.34	0.02	0.02	600	35088		
			9:21:59	40.52	20.23	124.34	0.02	0.02	600	32432		
			9:22:00	41.39	20.23	124.34	0.02	0.02	600	33520		
			9:22:01	40.46	20.23	124.36	0.02	0.02	600	33149		
			9:22:02	41.36	20.23	124.36	0.02	0.02	600	34091		
			9:22:03	40.89	20.23	124.34	0.02	0.02	600	34483		
			9:22:04	40.88	20.23	124.34	0.02	0.02	600	29126		
			9:22:05	41.10	20.23	124.32	0.02	0.02	600	30151		
			9:22:06	40.75	20.23	124.30	0.02	0.02	600	31088		
			9:22:07	41.03	20.23	124.36	0.02	0.02	600	33149		
			9:22:08	40.84	20.23	124.36	0.02	0.02	600	32432		
			9:22:09	40.97	20.23	124.36	0.02	0.02	600	31746		
			9:22:10	40.73	20.23	124.30	0.02	0.02	600	32787		
			9:22:11	40.95	20.23	124.29	0.02	0.02	600	31746		
			9:22:12	40.66	20.23	124.30	0.02	0.02	600	32086		
			9:22:13	40.83	20.24	124.27	0.02	0.02	600	33708		
			9:22:14	40.45	20.24	124.29	0.02	0.02	600	34682		
			9:22:15	40.73	20.24	124.27	0.02	0.02	600	31088		
			9:22:16	40.47	20.24	124.27	0.02	0.02	600	34091		
			9:22:17	40.61	20.24	124.26	0.02	0.02	600	32086		



**TABLE D-3**

Profile PRO-01 on September 21, 2022 (0928-0943 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

26	Instantaneous Minimum Dilution in Profile
48	Minimum Average Dilution in Profile
132	Detected Plume Average Dilution
215	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-1 (Acute Zone Boundary 24 ft North of Diffuser)	48 ft	0.48 m/sec 347 deg. (mag.) Ebb tide	9:28:15	1.93	20.11	122.15	2.34	1.72	623	362	524	Traces of plume near surface at AZB
			9:28:16	1.92	20.14	122.04	2.51	1.87	623	333		
			9:28:17	1.82	20.17	122.46	2.34	1.72	623	362		
			9:28:18	1.84	20.17	122.25	2.20	1.59	623	391		
			9:28:19	1.89	20.15	122.29	2.33	1.72	623	363		
			9:28:20	1.85	20.16	122.44	2.40	1.77	623	352		
			9:28:21	1.85	20.15	122.37	2.38	1.75	623	355		
			9:28:22	1.99	20.16	122.22	2.34	1.72	623	362		
			9:28:23	1.91	20.15	121.50	2.08	1.49	623	419		
			9:28:24	1.95	20.06	121.16	2.11	1.51	623	411		
			9:28:25	1.96	19.57	121.43	2.02	1.43	623	435		
			9:28:26	1.98	19.42	121.64	2.46	1.83	623	340		
			9:28:27	2.03	19.33	122.55	1.94	1.36	623	457		
			9:28:28	2.02	19.22	123.71	1.98	1.39	623	447		
			9:28:29	2.01	19.20	123.60	2.02	1.43	623	436		
			9:28:30	2.00	19.30	123.36	1.99	1.41	623	443		
			9:28:31	2.00	19.53	123.27	1.81	1.25	623	500		
			9:28:32	1.98	19.65	123.32	2.01	1.42	623	438		
			9:28:33	1.96	19.76	123.46	1.89	1.31	623	474		
			9:28:34	1.91	19.80	123.50	1.67	1.12	623	554		
			9:28:35	2.00	19.89	123.61	1.68	1.13	623	552		
			9:28:36	1.96	19.94	123.63	1.94	1.36	623	458		
			9:28:37	1.98	19.96	123.69	1.68	1.13	623	552		
			9:28:38	1.99	20.00	123.69	1.40	0.87	623	713		
			9:28:39	2.01	20.02	123.71	1.47	0.94	623	660		
			9:28:40	1.98	20.04	123.75	1.20	0.70	623	893		
			9:28:41	1.98	20.06	123.77	1.23	0.73	623	854		
			9:28:42	2.04	20.08	123.79	1.59	1.05	623	592		
			9:28:43	1.99	20.09	123.82	1.58	1.04	623	599		
			9:28:44	2.02	20.09	123.84	1.53	0.99	623	629		
9:28:45	1.99	20.11	123.86	1.44	0.91	623	684					
9:28:46	2.01	20.12	123.84	1.29	0.78	623	800					
9:28:47	1.98	20.13	123.83	1.30	0.79	623	787					
9:28:48	2.00	20.13	123.92	1.26	0.76	623	825					
9:28:49	2.00	20.14	123.88	1.08	0.59	623	1049					
9:28:50	2.02	20.15	124.03	0.88	0.41	623	1510					

**TABLE D-3**

Profile PRO-01 on September 21, 2022 (0928-0943 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

26	Instantaneous Minimum Dilution in Profile
48	Minimum Average Dilution in Profile
132	Detected Plume Average Dilution
215	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:28:51	2.06	20.23	124.15	1.18	0.68	623	921		
			9:28:52	2.05	20.24	124.13	1.01	0.53	623	1183		
			9:28:53	2.06	20.24	124.15	0.77	0.31	623	1995		
			9:28:54	2.05	20.25	124.15	1.05	0.56	623	1113		
			9:28:55	2.10	20.25	124.11	1.10	0.61	623	1026		
			9:28:56	2.09	20.25	124.15	1.30	0.79	623	789		
			9:28:57	2.10	20.25	124.18	1.16	0.66	623	939		
			9:28:58	2.13	20.25	124.18	1.15	0.66	623	950		
			9:28:59	2.11	20.25	124.11	0.91	0.44	623	1420		
			9:29:00	2.08	20.25	124.15	0.78	0.32	623	1951		
			9:29:01	2.10	20.25	124.09	1.06	0.57	623	1088		
			9:29:02	2.12	20.25	124.09	0.76	0.30	623	2066		
			9:29:03	2.13	20.25	124.07	0.56	0.13	623	4948		
			9:29:04	2.07	20.25	124.03	0.46	0.03	623	18495		
			9:29:05	2.10	20.26	124.01	0.73	0.27	623	2271		
			9:29:06	2.11	20.26	123.98	0.62	0.18	623	3435		
			9:29:07	2.07	20.27	124.01	0.86	0.39	623	1585		
			9:29:08	2.06	20.27	123.96	0.70	0.25	623	2465		
			9:29:09	2.07	20.27	123.96	0.70	0.25	623	2455		
			9:29:10	2.05	20.27	123.98	0.55	0.12	623	5271		
			9:29:11	2.06	20.27	124.01	0.50	0.07	623	8796		
			9:29:12	2.01	20.27	124.01	0.59	0.15	623	4190		
			9:29:13	2.03	20.27	123.98	0.29	0.29	623	2114		
			9:29:14	2.04	20.27	124.07	0.41	0.41	623	1533		
			9:29:15	2.06	20.27	124.03	0.65	0.20	623	3075		
			9:29:16	2.08	20.26	123.99	0.61	0.17	623	3753		
			9:29:17	2.07	20.26	124.03	0.52	0.09	623	6962		
			9:29:18	2.05	20.27	124.03	0.41	0.41	623	1535		
			9:29:19	1.95	20.26	124.01	0.37	0.37	623	1667		
			9:29:20	2.05	20.26	124.07	0.76	0.31	623	2030		
			9:29:21	2.04	20.25	124.07	0.52	0.09	623	7185		
			9:29:22	2.05	20.25	124.09	0.74	0.29	623	2183		
			9:29:23	2.06	20.26	124.07	0.77	0.32	623	1967		
			9:29:24	2.06	20.26	124.03	0.36	0.36	623	1714		
			9:29:25	2.10	20.25	124.09	0.51	0.08	623	7763		
			9:29:26	2.04	20.25	124.06	0.71	0.26	623	2412		

**TABLE D-3**

Profile PRO-01 on September 21, 2022 (0928-0943 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

26	Instantaneous Minimum Dilution in Profile
48	Minimum Average Dilution in Profile
132	Detected Plume Average Dilution
215	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:29:27	2.05	20.26	124.07	0.31	0.31	623	1984		Background values below 2 ft depth
			9:29:28	2.01	20.26	124.09	0.45	0.03	623	23190		
			9:29:29	2.25	20.25	124.13	0.52	0.09	623	7268		
			9:29:30	2.74	20.25	124.15	0.53	0.09	623	6623		
			9:29:31	3.49	20.25	124.15	0.67	0.22	623	2796		
			9:29:32	6.83	20.24	124.20	0.47	0.04	623	13959		
			9:29:33	7.93	20.24	124.22	0.64	0.19	623	3202		
			9:29:34	8.05	20.24	124.24	0.66	0.22	623	2866		
			9:29:35	8.14	20.24	124.22	0.19	0.19	623	3333		
			9:29:36	8.16	20.24	124.14	0.44	0.02	623	31644		
			9:29:37	8.20	20.25	124.15	0.23	0.23	623	2704		
			9:29:38	8.21	20.25	124.18	0.41	0.41	623	1533		
			9:29:39	8.27	20.25	124.13	0.47	0.05	623	13446		
			9:29:40	8.22	20.25	124.18	0.18	0.18	623	3546		
			9:29:41	8.22	20.24	124.22	0.32	0.32	623	1940		
			9:29:42	8.22	20.24	124.23	0.31	0.31	623	1980		
			9:29:43	8.19	20.24	124.24	0.61	0.17	623	3730		
			9:29:44	8.20	20.24	124.18	0.28	0.28	623	2257		
			9:29:45	8.21	20.24	124.22	0.42	0.42	623	1478		
			9:29:46	8.18	20.24	124.24	0.27	0.27	623	2305		
			9:29:47	8.21	20.24	124.24	0.39	0.39	623	1583		
			9:29:48	8.07	20.24	124.21	0.27	0.27	623	2345		
			9:29:49	8.20	20.24	124.18	0.28	0.28	623	2261		
			9:29:50	8.10	20.24	124.24	0.58	0.14	623	4490		
			9:29:51	8.12	20.24	124.26	0.59	0.15	623	4100		
			9:29:52	8.24	20.24	124.22	0.49	0.06	623	9985		
			9:29:53	8.08	20.24	124.22	0.49	0.06	623	10311		
			9:29:54	8.18	20.24	124.18	0.53	0.10	623	6265		
			9:29:55	7.98	20.24	124.22	0.39	0.39	623	1597		
			9:29:56	8.03	20.24	124.22	0.20	0.20	623	3101		
			9:29:57	8.08	20.24	124.20	0.35	0.35	623	1777		
			9:29:58	8.07	20.24	124.24	0.34	0.34	623	1837		
			9:29:59	8.18	20.24	124.25	0.56	0.13	623	4906		
			9:30:00	7.89	20.24	124.26	0.43	0.01	623	67788		
			9:30:01	8.08	20.24	124.20	0.23	0.23	623	2692		
			9:30:02	7.87	20.24	124.22	0.44	0.02	623	34133		

**TABLE D-3**

Profile PRO-01 on September 21, 2022 (0928-0943 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

26	Instantaneous Minimum Dilution in Profile
48	Minimum Average Dilution in Profile
132	Detected Plume Average Dilution
215	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:30:03	8.11	20.24	124.18	0.47	0.04	623	15519		
			9:30:04	8.02	20.24	124.22	0.32	0.32	623	1918		
			9:30:05	8.17	20.25	124.22	0.16	0.16	623	3889		
			9:30:06	8.13	20.25	124.20	0.39	0.39	623	1588		
			9:30:07	8.19	20.25	124.20	0.34	0.34	623	1830		
			9:30:08	8.01	20.25	124.18	0.53	0.10	623	6356		
			9:30:09	8.10	20.25	124.20	0.43	0.00	623	129951		
			9:30:10	7.97	20.24	124.24	0.39	0.39	623	1600		
			9:30:11	7.97	20.24	124.20	0.30	0.30	623	2055		
			9:30:12	7.96	20.24	124.24	0.43	0.01	623	114899		
			9:30:13	7.99	20.24	124.22	0.32	0.32	623	1920		
			9:30:14	7.80	20.24	124.24	0.32	0.32	623	1940		
			9:30:15	8.11	20.24	124.18	0.14	0.14	623	4456		
			9:30:16	7.82	20.25	124.15	0.35	0.35	623	1779		
			9:30:17	8.14	20.25	124.09	0.27	0.27	623	2301		
			9:30:18	7.81	20.26	124.09	0.35	0.35	623	1786		
			9:30:19	8.11	20.26	124.07	0.37	0.37	623	1705		
			9:30:20	7.79	20.27	123.96	0.13	0.13	623	4882		
			9:30:21	8.06	20.27	123.96	0.34	0.34	623	1844		
			9:30:22	7.84	20.28	123.98	0.43	0.01	623	120900		
			9:30:23	7.94	20.28	123.90	0.25	0.25	623	2520		
			9:30:24	8.00	20.28	123.97	0.17	0.17	623	3758		
			9:30:25	7.82	20.26	124.18	0.33	0.33	623	1906		
			9:30:26	8.06	20.25	124.18	0.49	0.06	623	10404		
			9:30:27	7.87	20.25	124.20	0.19	0.19	623	3240		
			9:30:28	8.16	20.25	124.18	0.50	0.07	623	8818		
			9:30:29	8.09	20.25	124.22	0.57	0.14	623	4603		
			9:30:30	8.62	20.25	124.24	0.35	0.35	623	1773		
			9:30:31	9.12	20.25	124.13	0.61	0.17	623	3642		
			9:30:32	9.24	20.25	124.18	0.43	0.00	623	171731		
			9:30:33	10.14	20.26	124.03	0.10	0.10	623	6218		
			9:30:34	12.91	20.27	123.91	0.02	0.02	623	32618		
			9:30:35	13.30	20.27	123.96	0.02	0.02	623	33316		Background values below 2 ft depth
			9:30:36	13.08	20.27	123.96	0.02	0.02	623	31624		
			9:30:37	13.22	20.27	124.03	0.02	0.02	623	29952		
			9:30:38	13.22	20.27	123.99	0.02	0.02	623	32963		

**TABLE D-3**

Profile PRO-01 on September 21, 2022 (0928-0943 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

26	Instantaneous Minimum Dilution in Profile
48	Minimum Average Dilution in Profile
132	Detected Plume Average Dilution
215	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:30:39	13.22	20.26	124.03	0.02	0.02	623	32618		
			9:30:40	13.37	20.27	123.99	0.02	0.02	623	31949		
			9:30:41	13.41	20.26	124.07	0.02	0.02	623	32280		
			9:30:42	13.68	20.26	124.05	0.02	0.02	623	31150		
			9:30:43	13.77	20.26	124.03	0.02	0.02	623	35398		
			9:30:44	13.99	20.26	124.10	0.02	0.02	623	32963		
			9:30:45	14.24	20.25	124.09	0.02	0.02	623	31150		
			9:30:46	14.32	20.25	124.09	0.02	0.02	623	31465		
			9:30:47	14.39	20.25	124.13	0.02	0.02	623	36647		
			9:30:48	14.39	20.25	124.18	0.02	0.02	623	34420		
			9:30:49	14.47	20.25	124.15	0.02	0.02	623	33676		
			9:30:50	14.38	20.25	124.15	0.02	0.02	623	31624		
			9:30:51	14.38	20.25	124.18	0.02	0.02	623	33676		
			9:30:52	14.46	20.25	124.11	0.02	0.02	623	33316		
			9:30:53	14.35	20.25	124.13	0.02	0.02	623	31949		
			9:30:54	14.36	20.25	124.10	0.02	0.02	623	35198		
			9:30:55	14.46	20.25	124.07	0.02	0.02	623	33676		
			9:30:56	14.39	20.26	124.09	0.02	0.02	623	36012		
			9:30:57	14.38	20.26	124.07	0.02	0.02	623	31949		
			9:30:58	14.54	20.26	124.09	0.02	0.02	623	32963		
			9:30:59	14.50	20.26	124.11	0.02	0.02	623	31465		
			9:31:00	14.36	20.26	124.07	0.02	0.02	623	32280		
			9:31:01	14.45	20.26	124.09	0.02	0.02	623	33676		
			9:31:02	14.44	20.26	124.11	0.02	0.02	623	36012		
			9:31:03	14.29	20.26	124.08	0.02	0.02	623	32618		
			9:31:04	14.35	20.26	124.09	0.02	0.02	623	32618		
			9:31:05	14.36	20.26	124.11	0.02	0.02	623	33316		
			9:31:06	14.15	20.26	124.15	0.02	0.02	623	33316		
			9:31:07	14.12	20.25	124.13	0.02	0.02	623	31949		
			9:31:08	14.05	20.25	124.11	0.02	0.02	623	31624		
			9:31:09	13.71	20.25	124.15	0.02	0.02	623	34044		
			9:31:10	13.52	20.25	124.13	0.02	0.02	623	32280		
			9:31:11	13.32	20.25	124.11	0.02	0.02	623	35198		
			9:31:12	13.03	20.26	124.11	0.02	0.02	623	32963		
			9:31:13	12.91	20.25	124.18	0.02	0.02	623	32113		
			9:31:14	12.71	20.25	124.24	0.02	0.02	623	34044		

**TABLE D-3**

Profile PRO-01 on September 21, 2022 (0928-0943 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

26	Instantaneous Minimum Dilution in Profile
48	Minimum Average Dilution in Profile
132	Detected Plume Average Dilution
215	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:31:15	12.55	20.25	124.20	0.02	0.02	623	32963		
			9:31:16	12.52	20.25	124.24	0.02	0.02	623	32618		
			9:31:17	12.41	20.25	124.23	0.02	0.02	623	33676		
			9:31:18	12.38	20.25	124.18	0.02	0.02	623	32280		
			9:31:19	12.42	20.25	124.18	0.02	0.02	623	34044		
			9:31:20	12.41	20.24	124.22	0.02	0.02	623	35398		
			9:31:21	12.47	20.24	124.20	0.02	0.02	623	32618		
			9:31:22	12.50	20.25	124.24	0.02	0.02	623	33676		
			9:31:23	12.50	20.25	124.24	0.02	0.02	623	34044		
			9:31:24	12.50	20.25	124.20	0.02	0.02	623	33316		
			9:31:25	12.54	20.25	124.24	0.02	0.02	623	37083		
			9:31:26	12.66	20.25	124.22	0.02	0.02	623	34420		
			9:31:27	12.98	20.24	124.24	0.02	0.02	623	34804		
			9:31:28	13.09	20.24	124.24	0.02	0.02	623	34804		
			9:31:29	13.41	20.24	124.22	0.02	0.02	623	34044		
			9:31:30	13.83	20.24	124.20	0.02	0.02	623	34420		
			9:31:31	14.99	20.25	124.20	0.02	0.02	623	33316		
			9:31:32	18.26	20.24	124.20	0.02	0.02	623	34420		
			9:31:33	19.09	20.24	124.24	0.02	0.02	623	35198		
			9:31:34	18.96	20.24	124.25	0.02	0.02	623	30539		
			9:31:35	18.89	20.24	124.27	0.02	0.02	623	37530		
			9:31:36	18.96	20.24	124.24	0.02	0.02	623	32280		
			9:31:37	18.94	20.24	124.20	0.02	0.02	623	35398		
			9:31:38	19.12	20.24	124.26	0.02	0.02	623	31307		
			9:31:39	19.19	20.24	124.22	0.02	0.02	623	32618		
			9:31:40	19.22	20.24	124.22	0.02	0.02	623	32618		
			9:31:41	19.23	20.25	124.20	0.02	0.02	623	32618		
			9:31:42	19.12	20.25	124.12	0.02	0.02	623	32113		
			9:31:43	18.98	20.25	124.15	0.02	0.02	623	32280		
			9:31:44	18.96	20.25	124.11	0.02	0.02	623	31949		
			9:31:45	18.89	20.26	124.09	0.02	0.02	623	34804		
			9:31:46	18.87	20.26	124.09	0.02	0.02	623	35198		
			9:31:47	19.03	20.26	124.05	0.02	0.02	623	31465		
			9:31:48	19.10	20.26	124.07	0.02	0.02	623	34804		
			9:31:49	19.18	20.26	124.09	0.02	0.02	623	34420		
			9:31:50	19.32	20.26	124.05	0.02	0.02	623	33316		

Background values below 2 ft depth

**TABLE D-3**

Profile PRO-01 on September 21, 2022 (0928-0943 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

26	Instantaneous Minimum Dilution in Profile
48	Minimum Average Dilution in Profile
132	Detected Plume Average Dilution
215	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:31:51	19.29	20.26	124.11	0.02	0.02	623	31949		
			9:31:52	19.20	20.26	124.12	0.02	0.02	623	35600		
			9:31:53	19.10	20.26	124.09	0.02	0.02	623	33316		
			9:31:54	18.88	20.25	124.13	0.02	0.02	623	32618		
			9:31:55	18.69	20.25	124.15	0.02	0.02	623	32280		
			9:31:56	18.68	20.26	124.11	0.02	0.02	623	32280		
			9:31:57	18.64	20.26	124.11	0.02	0.02	623	33316		
			9:31:58	18.71	20.26	124.05	0.02	0.02	623	32113		
			9:31:59	18.80	20.27	124.05	0.02	0.02	623	34804		
			9:32:00	18.86	20.27	124.03	0.02	0.02	623	34804		
			9:32:01	18.98	20.27	124.03	0.02	0.02	623	35600		
			9:32:02	19.07	20.27	123.94	0.02	0.02	623	34804		
			9:32:03	19.00	20.27	123.99	0.02	0.02	623	34044		
			9:32:04	18.99	20.27	124.01	0.02	0.02	623	35398		
			9:32:05	18.93	20.27	123.99	0.02	0.02	623	35198		
			9:32:06	18.82	20.27	124.03	0.02	0.02	623	34044		
			9:32:07	18.76	20.27	124.03	0.02	0.02	623	38457		
			9:32:08	18.76	20.27	124.05	0.02	0.02	623	34804		
			9:32:09	18.77	20.27	124.01	0.02	0.02	623	36221		
			9:32:10	18.86	20.27	124.11	0.02	0.02	623	32963		
			9:32:11	18.89	20.26	124.03	0.02	0.02	623	33676		
			9:32:12	18.80	20.26	124.09	0.02	0.02	623	34420		
			9:32:13	18.77	20.26	124.05	0.02	0.02	623	32113		
			9:32:14	18.60	20.27	124.07	0.02	0.02	623	34044		
			9:32:15	18.34	20.26	124.07	0.02	0.02	623	32618		
			9:32:16	18.23	20.27	124.03	0.02	0.02	623	35600		
			9:32:17	18.20	20.27	124.09	0.02	0.02	623	34804		
			9:32:18	18.41	20.27	124.03	0.02	0.02	623	33676		
			9:32:19	20.65	20.27	124.05	0.02	0.02	623	31949		
			9:32:20	23.64	20.26	124.11	0.02	0.02	623	36012		
			9:32:21	24.32	20.26	124.08	0.02	0.02	623	32618		
			9:32:22	24.53	20.27	124.05	0.02	0.02	623	31949		
			9:32:23	24.58	20.27	124.03	0.02	0.02	623	32280		
			9:32:24	24.67	20.26	124.11	0.02	0.02	623	36433		
			9:32:25	24.57	20.26	124.09	0.02	0.02	623	34420		
			9:32:26	24.37	20.26	124.07	0.02	0.02	623	37530		

**TABLE D-3**

Profile PRO-01 on September 21, 2022 (0928-0943 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

26	Instantaneous Minimum Dilution in Profile
48	Minimum Average Dilution in Profile
132	Detected Plume Average Dilution
215	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:32:27	24.18	20.26	124.11	0.02	0.02	623	34420		
			9:32:28	24.02	20.26	124.09	0.02	0.02	623	33316		
			9:32:29	23.71	20.26	124.09	0.02	0.02	623	35600		
			9:32:30	23.61	20.26	124.11	0.02	0.02	623	33676		
			9:32:31	23.62	20.26	124.08	0.02	0.02	623	34044		
			9:32:32	23.58	20.26	124.03	0.02	0.02	623	35398		
			9:32:33	23.59	20.27	124.07	0.02	0.02	623	31624		
			9:32:34	23.61	20.26	124.11	0.02	0.02	623	34044		
			9:32:35	23.45	20.26	124.09	0.02	0.02	623	30842		
			9:32:36	23.36	20.26	124.07	0.02	0.02	623	36221		
			9:32:37	23.21	20.26	124.09	0.02	0.02	623	32618		
			9:32:38	23.06	20.26	124.05	0.02	0.02	623	33676		
			9:32:39	23.15	20.26	124.05	0.02	0.02	623	35600		
			9:32:40	23.06	20.27	124.01	0.02	0.02	623	33676		
			9:32:41	22.92	20.27	124.03	0.02	0.02	623	32618		
			9:32:42	22.89	20.27	124.03	0.02	0.02	623	34044		
			9:32:43	22.85	20.27	124.05	0.02	0.02	623	35398		
			9:32:44	22.76	20.27	124.03	0.02	0.02	623	34420		
			9:32:45	22.75	20.27	124.07	0.02	0.02	623	34420		
			9:32:46	22.69	20.27	124.05	0.02	0.02	623	33316		
			9:32:47	22.59	20.27	123.96	0.02	0.02	623	36012		
			9:32:48	22.53	20.27	124.01	0.02	0.02	623	34044		
			9:32:49	22.47	20.27	123.99	0.02	0.02	623	33676		
			9:32:50	22.49	20.27	123.99	0.02	0.02	623	35805		
			9:32:51	22.50	20.27	123.99	0.02	0.02	623	35600		
			9:32:52	22.41	20.27	123.96	0.02	0.02	623	32618		
			9:32:53	22.46	20.27	123.99	0.02	0.02	623	35398		
			9:32:54	22.63	20.27	124.03	0.02	0.02	623	34804		
			9:32:55	22.88	20.27	124.03	0.02	0.02	623	32113		
			9:32:56	23.41	20.27	124.05	0.02	0.02	623	34420		
			9:32:57	23.94	20.27	124.05	0.02	0.02	623	32963		
			9:32:58	24.48	20.26	124.03	0.02	0.02	623	36433		
			9:32:59	25.01	20.26	124.03	0.02	0.02	623	32618		
			9:33:00	25.31	20.26	124.10	0.02	0.02	623	31465		
			9:33:01	25.54	20.26	124.09	0.02	0.02	623	33676		
			9:33:02	25.79	20.26	124.07	0.09	0.09	623	7295		



**TABLE D-3**

Profile PRO-01 on September 21, 2022 (0928-0943 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

26	Instantaneous Minimum Dilution in Profile
48	Minimum Average Dilution in Profile
132	Detected Plume Average Dilution
215	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:33:03	25.85	20.26	124.03	0.02	0.02	623	34804		
			9:33:04	25.88	20.26	124.09	0.02	0.02	623	35398		
			9:33:05	25.83	20.26	124.09	0.02	0.02	623	36647		
			9:33:06	25.84	20.26	124.07	0.02	0.02	623	34420		
			9:33:07	25.80	20.26	124.09	0.02	0.02	623	31465		
			9:33:08	25.76	20.26	124.07	0.02	0.02	623	32618		
			9:33:09	25.84	20.26	124.07	0.02	0.02	623	34804		
			9:33:10	25.78	20.26	124.08	0.02	0.02	623	35398		
			9:33:11	25.61	20.26	124.03	0.02	0.02	623	33316		
			9:33:12	25.53	20.26	124.05	0.07	0.07	623	9055		
			9:33:13	25.82	20.26	124.07	0.02	0.02	623	32963		
			9:33:14	27.51	20.26	124.11	0.02	0.02	623	33676		
			9:33:15	30.22	20.26	124.07	0.02	0.02	623	31465		
			9:33:16	30.44	20.26	124.05	0.02	0.02	623	36433		
			9:33:17	30.30	20.26	124.13	0.02	0.02	623	33676		
			9:33:18	30.18	20.26	124.09	0.02	0.02	623	34804		
			9:33:19	30.20	20.26	124.06	0.02	0.02	623	34420		
			9:33:20	30.10	20.26	124.13	0.02	0.02	623	35398		
			9:33:21	30.12	20.26	124.07	0.02	0.02	623	35805		
			9:33:22	30.12	20.26	124.11	0.02	0.02	623	30243		
			9:33:23	29.97	20.26	124.11	0.02	0.02	623	31307		
			9:33:24	29.86	20.26	124.11	0.02	0.02	623	32280		
			9:33:25	29.70	20.26	124.09	0.02	0.02	623	34420		
			9:33:26	29.43	20.26	124.13	0.02	0.02	623	33676		
			9:33:27	29.03	20.26	124.11	0.02	0.02	623	32963		
			9:33:28	28.73	20.26	124.11	0.02	0.02	623	34044		
			9:33:29	28.60	20.26	124.20	0.02	0.02	623	32963		
			9:33:30	28.62	20.26	124.13	0.02	0.02	623	33316		
			9:33:31	28.79	20.26	124.09	0.02	0.02	623	35000		
			9:33:32	28.92	20.26	124.13	0.02	0.02	623	36012		
			9:33:33	29.05	20.26	124.15	0.02	0.02	623	32280		
			9:33:34	29.06	20.25	124.13	0.02	0.02	623	35398		
			9:33:35	28.98	20.26	124.20	0.02	0.02	623	33316		
			9:33:36	28.86	20.25	124.20	0.02	0.02	623	32618		
			9:33:37	28.70	20.25	124.24	0.02	0.02	623	33676		
			9:33:38	28.34	20.25	124.22	0.02	0.02	623	32280		

**TABLE D-3**

Profile PRO-01 on September 21, 2022 (0928-0943 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

26	Instantaneous Minimum Dilution in Profile
48	Minimum Average Dilution in Profile
132	Detected Plume Average Dilution
215	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:33:39	28.18	20.25	124.24	0.02	0.02	623	37083		
			9:33:40	28.03	20.25	124.24	0.02	0.02	623	33676		
			9:33:41	27.96	20.25	124.20	0.02	0.02	623	32963		
			9:33:42	27.79	20.25	124.22	0.02	0.02	623	32963		
			9:33:43	27.76	20.25	124.22	0.02	0.02	623	32963		
			9:33:44	27.69	20.25	124.13	0.02	0.02	623	32963		
			9:33:45	27.64	20.25	124.15	0.02	0.02	623	33676		
			9:33:46	27.56	20.25	124.13	0.02	0.02	623	36647		
			9:33:47	27.54	20.26	124.11	0.02	0.02	623	35398		
			9:33:48	27.48	20.27	123.99	0.02	0.02	623	33316		
			9:33:49	27.43	20.27	124.09	0.02	0.02	623	34044		
			9:33:50	27.39	20.27	124.09	0.02	0.02	623	33676		
			9:33:51	27.26	20.27	124.07	0.02	0.02	623	32963		
			9:33:52	27.35	20.26	124.24	0.02	0.02	623	32280		
			9:33:53	27.25	20.25	124.20	0.02	0.02	623	34044		
			9:33:54	27.30	20.25	124.20	0.02	0.02	623	34420		
			9:33:55	27.35	20.25	124.18	0.02	0.02	623	34044		
			9:33:56	27.28	20.25	124.25	0.02	0.02	623	35805		
			9:33:57	27.29	20.25	124.23	0.02	0.02	623	34420		
			9:33:58	27.28	20.25	124.22	0.02	0.02	623	32280		
			9:33:59	27.16	20.25	124.15	0.02	0.02	623	34611		
			9:34:00	26.96	20.25	124.24	0.02	0.02	623	32280		
			9:34:01	27.01	20.25	124.22	0.02	0.02	623	34044		
			9:34:02	27.76	20.25	124.15	0.02	0.02	623	34044		
			9:34:03	30.39	20.25	124.20	0.02	0.02	623	33316		
			9:34:04	32.47	20.25	124.22	0.02	0.02	623	33676		
			9:34:05	32.56	20.25	124.23	0.02	0.02	623	31465		
			9:34:06	32.42	20.25	124.23	0.02	0.02	623	37988		
			9:34:07	32.20	20.25	124.20	0.02	0.02	623	36221		
			9:34:08	32.08	20.25	124.22	0.02	0.02	623	34044		
			9:34:09	31.97	20.25	124.19	0.02	0.02	623	34044		
			9:34:10	31.78	20.25	124.24	0.02	0.02	623	37083		
			9:34:11	31.59	20.25	124.22	0.02	0.02	623	39936		
			9:34:12	31.43	20.25	124.24	0.02	0.02	623	30539		
			9:34:13	31.24	20.25	124.13	0.02	0.02	623	37083		
			9:34:14	31.09	20.27	123.96	0.02	0.02	623	34420		

**TABLE D-3**

Profile PRO-01 on September 21, 2022 (0928-0943 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

26	Instantaneous Minimum Dilution in Profile
48	Minimum Average Dilution in Profile
132	Detected Plume Average Dilution
215	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:34:15	30.94	20.28	123.96	0.02	0.02	623	31949		
			9:34:16	30.80	20.28	123.99	0.02	0.02	623	34044		
			9:34:17	30.74	20.27	124.01	0.02	0.02	623	35805		
			9:34:18	30.46	20.27	124.03	0.02	0.02	623	34420		
			9:34:19	30.19	20.27	123.99	0.02	0.02	623	31307		
			9:34:20	30.05	20.27	124.03	0.02	0.02	623	32963		
			9:34:21	29.98	20.27	124.09	0.02	0.02	623	33676		
			9:34:22	30.12	20.26	124.05	0.02	0.02	623	34804		
			9:34:23	30.53	20.27	124.07	0.02	0.02	623	32963		
			9:34:24	31.07	20.27	124.05	0.02	0.02	623	35198		
			9:34:25	31.87	20.27	124.05	0.02	0.02	623	31150		
			9:34:26	32.61	20.28	123.96	0.02	0.02	623	34804		
			9:34:27	33.29	20.28	123.99	0.02	0.02	623	35600		
			9:34:28	34.07	20.28	123.99	0.02	0.02	623	30842		
			9:34:29	34.79	20.28	123.94	0.02	0.02	623	33316		
			9:34:30	35.35	20.28	124.01	0.02	0.02	623	32618		
			9:34:31	36.46	20.28	124.01	0.18	0.18	623	3552		
			9:34:32	38.93	20.28	123.96	0.02	0.02	623	31150		
			9:34:33	40.99	20.28	123.99	0.02	0.02	623	33316		
			9:34:34	41.75	20.28	125.97	3.14	2.43	623	256		
			9:34:35	42.18	20.29	127.88	8.36	7.12	623	87	579	Upper edge of plume detected
			9:34:36	42.48	20.29	126.30	2.82	2.15	623	290		
			9:34:37	42.67	20.28	125.44	0.83	0.37	623	1683		
			9:34:38	42.81	20.28	124.47	0.08	0.08	623	8296		
			9:34:39	42.84	20.28	124.13	0.02	0.02	623	34044		
			9:34:40	42.77	20.28	124.18	0.02	0.02	623	33676		
			9:34:41	42.79	20.28	124.68	0.13	0.13	623	4964		
			9:34:42	42.74	20.28	124.77	1.98	1.40	623	446		
			9:34:43	42.75	20.28	125.22	1.73	1.18	623	530		
			9:34:44	42.57	20.28	125.57	2.07	1.48	623	422	619	Upper edge of plume detected
			9:34:45	41.05	20.28	125.20	1.01	0.53	623	1180		
			9:34:46	39.26	20.28	125.65	1.89	1.31	623	474		
			9:34:47	38.83	20.28	125.60	2.33	1.71	623	365		
			9:34:48	38.95	20.28	125.63	1.18	0.68	623	916		
			9:34:49	38.90	20.28	124.80	0.02	0.02	623	36012		
			9:34:50	38.77	20.28	124.31	0.13	0.13	623	4734		

**TABLE D-3**

Profile PRO-01 on September 21, 2022 (0928-0943 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

26	Instantaneous Minimum Dilution in Profile
48	Minimum Average Dilution in Profile
132	Detected Plume Average Dilution
215	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:34:51	38.61	20.27	124.05	0.08	0.08	623	8070		
			9:34:52	38.35	20.27	124.03	0.02	0.02	623	34804		
			9:34:53	37.94	20.27	124.74	0.02	0.02	623	34804		
			9:34:54	37.56	20.28	126.33	1.73	1.17	623	530		
			9:34:55	36.96	20.28	126.02	1.35	0.83	623	750		
			9:34:56	36.37	20.27	124.23	0.02	0.02	623	32618		
			9:34:57	35.67	20.27	124.07	0.02	0.02	623	32963		
			9:34:58	35.13	20.27	124.18	0.02	0.02	623	35398		
			9:34:59	34.77	20.27	124.09	0.02	0.02	623	32280		
			9:35:00	34.48	20.27	124.07	0.02	0.02	623	33316		
			9:35:01	34.32	20.27	124.07	0.02	0.02	623	32963		
			9:35:02	34.20	20.26	124.07	0.02	0.02	623	35600		
			9:35:03	34.04	20.27	123.96	0.02	0.02	623	32963		
			9:35:04	33.75	20.29	123.96	0.02	0.02	623	37530		
			9:35:05	33.51	20.27	124.08	0.02	0.02	623	33676		
			9:35:06	33.00	20.27	124.03	0.02	0.02	623	36647		
			9:35:07	32.46	20.26	124.09	0.02	0.02	623	36012		
			9:35:08	31.92	20.26	124.11	0.02	0.02	623	32618		
			9:35:09	31.41	20.26	124.09	0.02	0.02	623	32113		
			9:35:10	31.09	20.26	124.05	0.02	0.02	623	39682		
			9:35:11	30.91	20.27	123.90	0.02	0.02	623	34044		
			9:35:12	30.81	20.28	123.92	0.02	0.02	623	34420		
			9:35:13	30.47	20.28	123.96	0.02	0.02	623	32618		
			9:35:14	30.12	20.27	124.07	0.02	0.02	623	32963		
			9:35:15	29.68	20.28	123.97	0.02	0.02	623	34044		
			9:35:16	29.30	20.28	123.99	0.02	0.02	623	33676		
			9:35:17	28.89	20.27	123.99	0.02	0.02	623	33316		
			9:35:18	28.44	20.27	124.05	0.02	0.02	623	32448		
			9:35:19	28.05	20.27	124.07	0.02	0.02	623	35805		
			9:35:20	27.75	20.27	124.05	0.02	0.02	623	32113		
			9:35:21	27.73	20.27	124.05	0.02	0.02	623	35398		
			9:35:22	28.17	20.27	124.03	0.02	0.02	623	31949		
			9:35:23	28.79	20.27	124.05	0.02	0.02	623	34420		
			9:35:24	29.56	20.27	124.07	0.02	0.02	623	33676		
			9:35:25	30.42	20.26	124.08	0.02	0.02	623	32963		
			9:35:26	31.22	20.26	124.11	0.02	0.02	623	36647		

**TABLE D-3**

Profile PRO-01 on September 21, 2022 (0928-0943 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

26	Instantaneous Minimum Dilution in Profile
48	Minimum Average Dilution in Profile
132	Detected Plume Average Dilution
215	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:35:27	32.01	20.26	124.11	0.02	0.02	623	34804		
			9:35:28	32.71	20.27	123.92	0.02	0.02	623	33316		
			9:35:29	33.37	20.29	123.88	0.02	0.02	623	36012		
			9:35:30	33.94	20.29	123.90	0.02	0.02	623	34611		
			9:35:31	34.66	20.29	123.88	0.02	0.02	623	33676		
			9:35:32	35.17	20.29	123.90	0.02	0.02	623	32963		
			9:35:33	35.84	20.29	123.94	0.02	0.02	623	36647		
			9:35:34	36.29	20.28	123.96	0.02	0.02	623	34044		
			9:35:35	36.80	20.27	124.08	0.07	0.07	623	9299		
			9:35:36	37.21	20.27	124.05	0.02	0.02	623	32113		
			9:35:37	37.59	20.26	124.11	0.02	0.02	623	37083		
			9:35:38	37.88	20.26	124.13	0.02	0.02	623	36433		
			9:35:39	38.03	20.26	124.07	0.02	0.02	623	35000		
			9:35:40	38.17	20.26	124.11	0.02	0.02	623	36221		
			9:35:41	38.21	20.26	124.13	0.02	0.02	623	34044		
			9:35:42	38.47	20.26	124.07	0.02	0.02	623	34044		
			9:35:43	38.56	20.26	124.09	0.02	0.02	623	32618		
			9:35:44	38.69	20.26	124.21	0.30	0.30	623	2081		
			9:35:45	38.84	20.26	124.32	0.55	0.11	623	5602		
			9:35:46	38.90	20.26	126.86	8.35	7.12	623	88		
			9:35:47	39.00	20.29	136.37	25.83	22.80	623	27		
			9:35:48	38.99	20.32	135.17	22.51	19.82	623	31		
			9:35:49	39.08	20.31	134.90	18.98	16.65	623	37	48	Port plume measurements at 38 ft
			9:35:50	38.99	20.31	132.09	18.97	16.64	623	37		
			9:35:51	38.91	20.30	133.18	16.83	14.72	623	42		
			9:35:52	38.74	20.31	134.92	16.89	14.78	623	42		
			9:35:53	38.72	20.30	130.37	8.92	7.62	623	82		
			9:35:54	38.37	20.28	125.63	3.10	2.41	623	259		
			9:35:55	37.88	20.27	124.57	1.09	0.60	623	1032		
			9:35:56	37.43	20.26	124.25	0.09	0.09	623	6801		
			9:35:57	36.81	20.26	124.15	0.02	0.02	623	31465		
			9:35:58	36.20	20.26	124.13	0.02	0.02	623	33316		
			9:35:59	35.65	20.26	124.18	0.02	0.02	623	34044		
			9:36:00	35.12	20.26	124.15	0.02	0.02	623	34044		
			9:36:01	34.62	20.26	124.15	0.02	0.02	623	32963		
			9:36:02	34.20	20.26	124.13	0.02	0.02	623	37083		

**TABLE D-3**

Profile PRO-01 on September 21, 2022 (0928-0943 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

26	Instantaneous Minimum Dilution in Profile
48	Minimum Average Dilution in Profile
132	Detected Plume Average Dilution
215	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:36:03	33.87	20.26	124.11	0.10	0.10	623	6084		
			9:36:04	33.73	20.26	124.05	0.02	0.02	623	34420		
			9:36:05	33.63	20.27	124.05	0.02	0.02	623	34420		
			9:36:06	33.52	20.26	124.11	0.02	0.02	623	33676		
			9:36:07	33.41	20.26	124.11	0.02	0.02	623	31307		
			9:36:08	33.29	20.26	124.11	0.02	0.02	623	37083		
			9:36:09	33.05	20.26	124.15	0.02	0.02	623	34420		
			9:36:10	32.69	20.26	124.11	0.02	0.02	623	33316		
			9:36:11	32.40	20.26	124.09	0.02	0.02	623	34804		
			9:36:12	32.22	20.27	124.08	0.02	0.02	623	33316		
			9:36:13	31.91	20.26	124.09	0.02	0.02	623	33676		
			9:36:14	31.46	20.26	124.15	0.02	0.02	623	35600		
			9:36:15	30.87	20.26	124.18	0.02	0.02	623	32113		
			9:36:16	30.33	20.26	124.09	0.02	0.02	623	34044		
			9:36:17	29.65	20.27	124.03	0.02	0.02	623	34804		
			9:36:18	28.97	20.26	124.11	0.02	0.02	623	32963		
			9:36:19	28.34	20.26	124.13	0.02	0.02	623	32280		
			9:36:20	27.76	20.26	124.09	0.02	0.02	623	34044		
			9:36:21	27.30	20.26	124.15	0.02	0.02	623	33676		
			9:36:22	26.81	20.26	124.18	0.02	0.02	623	34804		
			9:36:23	26.63	20.26	124.13	0.02	0.02	623	34044		
			9:36:24	26.77	20.26	124.07	0.02	0.02	623	35198		
			9:36:25	27.24	20.27	124.09	0.02	0.02	623	35198		
			9:36:26	27.94	20.26	124.11	0.02	0.02	623	32618		
			9:36:27	28.83	20.26	124.09	0.02	0.02	623	35198		
			9:36:28	29.55	20.26	124.11	0.02	0.02	623	35398		
			9:36:29	30.29	20.26	124.15	0.02	0.02	623	35000		
			9:36:30	30.79	20.26	124.15	0.02	0.02	623	31307		
			9:36:31	31.24	20.26	124.15	0.02	0.02	623	34420		
			9:36:32	31.41	20.26	124.10	0.02	0.02	623	32280		
			9:36:33	31.49	20.26	124.09	0.02	0.02	623	32280		
			9:36:34	31.29	20.26	124.11	0.02	0.02	623	35398		
			9:36:35	31.04	20.26	124.09	0.02	0.02	623	34420		
			9:36:36	30.87	20.26	124.18	0.02	0.02	623	31150		
			9:36:37	30.83	20.26	124.13	0.02	0.02	623	33676		
			9:36:38	30.98	20.26	124.11	0.02	0.02	623	36221		

**TABLE D-3**

Profile PRO-01 on September 21, 2022 (0928-0943 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

26	Instantaneous Minimum Dilution in Profile
48	Minimum Average Dilution in Profile
132	Detected Plume Average Dilution
215	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:36:39	31.28	20.25	124.13	0.02	0.02	623	34044		
			9:36:40	31.61	20.25	124.18	0.04	0.04	623	17022		
			9:36:41	31.86	20.26	124.15	0.02	0.02	623	36433		
			9:36:42	31.93	20.26	124.15	0.02	0.02	623	34044		
			9:36:43	31.95	20.25	124.18	0.02	0.02	623	35198		
			9:36:44	31.99	20.25	124.22	0.02	0.02	623	35398		
			9:36:45	32.24	20.25	124.18	0.06	0.06	623	11105		
			9:36:46	32.35	20.25	124.22	0.02	0.02	623	31624		
			9:36:47	32.84	20.25	124.18	0.02	0.02	623	35805		
			9:36:48	33.43	20.25	124.18	0.02	0.02	623	31786		
			9:36:49	34.20	20.25	124.23	0.02	0.02	623	34420		
			9:36:50	35.04	20.25	124.22	0.02	0.02	623	39430		
			9:36:51	35.81	20.25	124.24	0.02	0.02	623	37083		
			9:36:52	36.62	20.25	124.20	0.02	0.02	623	32963		
			9:36:53	37.29	20.25	124.18	0.02	0.02	623	34044		
			9:36:54	37.92	20.25	124.11	0.02	0.02	623	35198		
			9:36:55	38.43	20.26	124.13	0.02	0.02	623	33316		
			9:36:56	38.75	20.25	124.15	0.07	0.07	623	8738		
			9:36:57	38.98	20.25	124.26	0.02	0.02	623	32963		
			9:36:58	39.05	20.25	124.22	0.02	0.02	623	35398		
			9:36:59	39.08	20.25	124.20	0.02	0.02	623	36221		
			9:37:00	39.02	20.25	124.20	0.02	0.02	623	32280		
			9:37:01	38.97	20.25	124.18	0.02	0.02	623	31786		
			9:37:02	38.95	20.25	124.22	0.02	0.02	623	36221		
			9:37:03	38.94	20.25	124.20	0.02	0.02	623	35600		
			9:37:04	38.85	20.25	124.20	0.02	0.02	623	34804		
			9:37:05	38.78	20.25	124.24	0.02	0.02	623	32618		
			9:37:06	38.63	20.25	124.20	0.02	0.02	623	31949		
			9:37:07	38.40	20.25	124.18	0.02	0.02	623	31465		
			9:37:08	38.08	20.25	124.22	0.02	0.02	623	33138		
			9:37:09	37.85	20.25	124.20	0.02	0.02	623	34804		
			9:37:10	37.43	20.25	124.20	0.02	0.02	623	34420		
			9:37:11	37.10	20.25	124.24	0.02	0.02	623	32280		
			9:37:12	36.61	20.25	124.22	0.02	0.02	623	31949		
			9:37:13	36.22	20.25	124.22	0.02	0.02	623	31150		
			9:37:14	35.79	20.25	124.18	0.02	0.02	623	33316		

**TABLE D-3**

Profile PRO-01 on September 21, 2022 (0928-0943 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

26	Instantaneous Minimum Dilution in Profile
48	Minimum Average Dilution in Profile
132	Detected Plume Average Dilution
215	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:37:15	35.52	20.25	124.24	0.02	0.02	623	34420		
			9:37:16	35.19	20.25	124.18	0.02	0.02	623	35000		
			9:37:17	35.28	20.25	124.22	0.02	0.02	623	34420		
			9:37:18	36.10	20.25	124.22	0.02	0.02	623	34044		
			9:37:19	38.70	20.26	124.13	0.02	0.02	623	35398		
			9:37:20	39.48	20.26	124.12	0.02	0.02	623	34420		
			9:37:21	39.55	20.26	124.18	0.02	0.02	623	34804		
			9:37:22	39.46	20.26	124.11	0.02	0.02	623	32280		
			9:37:23	39.30	20.25	124.18	0.02	0.02	623	33138		
			9:37:24	39.05	20.25	124.20	0.02	0.02	623	33316		
			9:37:25	38.67	20.25	124.15	0.02	0.02	623	35198		
			9:37:26	38.09	20.26	125.77	1.83	1.27	623	492		
			9:37:27	37.61	20.28	125.65	4.45	3.61	623	172		
			9:37:28	37.05	20.28	124.39	0.02	0.02	623	35600		
			9:37:29	36.53	20.27	124.11	0.02	0.02	623	33676		
			9:37:30	36.09	20.28	124.06	0.02	0.02	623	37530		
			9:37:31	35.61	20.27	124.03	0.02	0.02	623	33316		
			9:37:32	35.17	20.27	124.07	0.02	0.02	623	34611		
			9:37:33	34.76	20.27	124.07	0.02	0.02	623	34420		
			9:37:34	34.42	20.27	124.03	0.02	0.02	623	34804		
			9:37:35	34.11	20.27	124.09	0.02	0.02	623	33316		
			9:37:36	33.88	20.26	124.11	0.02	0.02	623	31150		
			9:37:37	33.76	20.27	123.96	0.03	0.03	623	18879		
			9:37:38	33.66	20.27	124.05	0.02	0.02	623	34044		
			9:37:39	33.50	20.26	124.03	0.02	0.02	623	32618		
			9:37:40	33.36	20.27	124.01	0.02	0.02	623	36647		
			9:37:41	33.31	20.27	124.07	0.02	0.02	623	34420		
			9:37:42	33.02	20.27	124.07	0.02	0.02	623	34044		
			9:37:43	32.63	20.27	124.07	0.02	0.02	623	37083		
			9:37:44	32.34	20.27	124.07	0.02	0.02	623	32618		
			9:37:45	32.07	20.27	124.03	0.02	0.02	623	37988		
			9:37:46	31.85	20.27	124.03	0.02	0.02	623	33676		
			9:37:47	31.62	20.27	124.07	0.02	0.02	623	32618		
			9:37:48	31.26	20.27	124.07	0.02	0.02	623	32280		
			9:37:49	31.05	20.27	124.03	0.02	0.02	623	31786		
			9:37:50	30.85	20.27	124.03	0.02	0.02	623	31949		



**TABLE D-3**

Profile PRO-01 on September 21, 2022 (0928-0943 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

26	Instantaneous Minimum Dilution in Profile
48	Minimum Average Dilution in Profile
132	Detected Plume Average Dilution
215	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:37:51	30.67	20.27	124.01	0.02	0.02	623	37083		
			9:37:52	30.83	20.27	124.07	0.02	0.02	623	33316		
			9:37:53	31.33	20.27	124.09	0.02	0.02	623	35600		
			9:37:54	32.30	20.27	124.09	0.02	0.02	623	32618		
			9:37:55	33.49	20.27	124.09	0.02	0.02	623	32963		
			9:37:56	34.81	20.27	124.09	0.02	0.02	623	34420		
			9:37:57	36.08	20.27	124.01	0.02	0.02	623	34804		
			9:37:58	37.32	20.27	127.84	4.78	3.91	623	159		
			9:37:59	38.52	20.28	128.86	9.62	8.25	623	75		
			9:38:00	39.60	20.29	132.55	27.22	24.04	623	26		
			9:38:01	40.65	20.30	131.40	17.82	15.61	623	40	87	Port plume at 38-44 ft
			9:38:02	41.63	20.28	128.09	4.31	3.49	623	178		
			9:38:03	42.43	20.27	131.89	12.70	11.01	623	57		
			9:38:04	43.21	20.29	129.03	9.87	8.47	623	74		
			9:38:05	43.77	20.27	126.50	2.94	2.26	623	275		
			9:38:06	44.11	20.26	126.05	3.32	2.60	623	239		
			9:38:07	44.36	20.26	125.87	2.47	1.84	623	339		
			9:38:08	44.54	20.26	126.36	3.15	2.45	623	255		
			9:38:09	44.47	20.27	126.32	5.33	4.40	623	142		
			9:38:10	44.43	20.27	127.88	7.06	5.96	623	105	112	Port plume at 38-44 ft
			9:38:11	44.40	20.28	128.58	8.15	6.93	623	90		
			9:38:12	44.36	20.29	128.41	2.28	1.67	623	373		
			9:38:13	44.33	20.28	126.79	2.03	1.44	623	433		
			9:38:14	44.47	20.29	129.96	6.58	5.52	623	113		
			9:38:15	44.44	20.29	130.08	10.02	8.61	623	72		
			9:38:16	44.51	20.28	129.50	6.39	5.35	623	116		
			9:38:17	44.45	20.28	126.73	0.78	0.32	623	1952		
			9:38:18	44.52	20.26	124.71	0.02	0.02	623	30243		
			9:38:19	44.45	20.26	125.22	0.70	0.25	623	2503		
			9:38:20	44.42	20.27	126.50	4.42	3.59	623	174		
			9:38:21	44.45	20.27	127.40	5.22	4.30	623	145		
			9:38:22	44.31	20.28	126.78	3.90	3.12	623	200		
			9:38:23	44.27	20.28	127.58	2.58	1.93	623	322		
			9:38:24	44.19	20.28	127.45	2.62	1.97	623	316	247	Port plume at 42-44 ft
			9:38:25	44.11	20.27	127.28	2.29	1.68	623	372		
			9:38:26	44.03	20.27	126.59	4.40	3.57	623	175		

**TABLE D-3**

Profile PRO-01 on September 21, 2022 (0928-0943 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

26	Instantaneous Minimum Dilution in Profile
48	Minimum Average Dilution in Profile
132	Detected Plume Average Dilution
215	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:38:27	43.89	20.27	126.26	2.87	2.20	623	284		
			9:38:28	43.64	20.27	126.30	4.56	3.71	623	168		
			9:38:29	43.44	20.27	125.61	3.29	2.57	623	243		
			9:38:30	43.10	20.27	125.06	2.57	1.93	623	323		
			9:38:31	42.69	20.27	124.57	1.51	0.98	623	637		
			9:38:32	42.26	20.27	124.41	0.29	0.29	623	2163		
			9:38:33	41.85	20.27	124.13	0.02	0.02	623	34804		
			9:38:34	41.17	20.27	124.23	0.02	0.02	623	31624		
			9:38:35	40.65	20.27	124.26	0.02	0.02	623	34044		
			9:38:36	40.02	20.27	124.30	0.02	0.02	623	37083		
			9:38:37	39.49	20.27	124.92	0.17	0.17	623	3724		
			9:38:38	38.95	20.27	127.00	2.30	1.69	623	369		
			9:38:39	38.45	20.28	128.76	6.71	5.64	623	110		
			9:38:40	38.05	20.29	128.36	9.48	8.13	623	77	149	Port plume at 38 ft
			9:38:41	37.66	20.28	124.77	4.69	3.83	623	163		
			9:38:42	37.32	20.28	124.18	3.26	2.55	623	245		
			9:38:43	37.06	20.27	124.01	2.73	2.07	623	300		
			9:38:44	36.78	20.28	124.05	1.60	1.06	623	590		
			9:38:45	36.57	20.27	124.10	0.63	0.18	623	3387		
			9:38:46	36.38	20.27	124.07	0.18	0.18	623	3467		
			9:38:47	36.19	20.26	124.11	0.02	0.02	623	36012		
			9:38:48	36.03	20.26	124.07	0.02	0.02	623	33316		
			9:38:49	35.86	20.26	124.09	0.02	0.02	623	34804		
			9:38:50	35.69	20.26	124.07	0.02	0.02	623	34420		
			9:38:51	35.52	20.26	124.07	0.02	0.02	623	33316		
			9:38:52	35.14	20.26	124.11	0.02	0.02	623	34420		
			9:38:53	34.96	20.26	124.09	0.02	0.02	623	33676		
			9:38:54	34.91	20.26	124.06	0.02	0.02	623	31786		
			9:38:55	34.82	20.27	124.03	0.02	0.02	623	36221		
			9:38:56	34.66	20.27	124.07	0.02	0.02	623	31307		
			9:38:57	34.45	20.26	124.13	0.02	0.02	623	34420		
			9:38:58	34.18	20.26	124.11	0.02	0.02	623	34044		
			9:38:59	34.00	20.26	124.13	0.02	0.02	623	38457		
			9:39:00	33.81	20.26	124.13	0.02	0.02	623	35398		
			9:39:01	33.54	20.26	124.07	0.02	0.02	623	33316		
			9:39:02	33.32	20.26	124.05	0.02	0.02	623	36647		

**TABLE D-3**

Profile PRO-01 on September 21, 2022 (0928-0943 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

26	Instantaneous Minimum Dilution in Profile
48	Minimum Average Dilution in Profile
132	Detected Plume Average Dilution
215	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:39:03	33.17	20.26	124.03	0.02	0.02	623	32963		
			9:39:04	32.94	20.26	124.06	0.02	0.02	623	33316		
			9:39:05	32.76	20.27	124.05	0.02	0.02	623	34044		
			9:39:06	32.53	20.26	124.07	0.07	0.07	623	9095		
			9:39:07	32.43	20.26	124.03	0.02	0.02	623	32280		
			9:39:08	32.38	20.27	124.05	0.02	0.02	623	36647		
			9:39:09	32.24	20.27	124.07	0.02	0.02	623	31786		
			9:39:10	32.15	20.27	124.05	0.02	0.02	623	33676		
			9:39:11	32.05	20.27	124.03	0.02	0.02	623	35000		
			9:39:12	32.03	20.27	124.01	0.02	0.02	623	32963		
			9:39:13	31.94	20.26	124.07	0.02	0.02	623	35198		
			9:39:14	31.92	20.26	124.09	0.02	0.02	623	34044		
			9:39:15	31.90	20.26	124.09	0.02	0.02	623	34420		
			9:39:16	31.94	20.26	124.13	0.02	0.02	623	34804		
			9:39:17	32.31	20.25	124.11	0.02	0.02	623	32618		
			9:39:18	32.90	20.25	124.15	0.02	0.02	623	32963		
			9:39:19	33.86	20.25	124.56	0.49	0.06	623	10435		
			9:39:20	34.96	20.26	124.42	0.25	0.25	623	2473		
			9:39:21	36.28	20.26	124.13	0.02	0.02	623	33316		
			9:39:22	37.64	20.25	124.11	0.02	0.02	623	31150		
			9:39:23	39.09	20.25	124.11	0.02	0.02	623	36221		
			9:39:24	40.42	20.26	124.10	0.02	0.02	623	36012		
			9:39:25	41.62	20.26	124.25	0.02	0.02	623	35600		
			9:39:26	42.66	20.26	126.34	0.95	0.48	623	1311		
			9:39:27	43.54	20.27	126.73	3.52	2.78	623	224		
			9:39:28	44.07	20.27	125.69	3.06	2.37	623	263		
			9:39:29	44.45	20.26	125.05	1.38	0.86	623	722		
			9:39:30	44.48	20.26	124.90	1.18	0.68	623	917		
			9:39:31	44.42	20.26	124.84	0.10	0.10	623	6218		
			9:39:32	44.36	20.26	127.31	1.29	0.78	623	797		
			9:39:33	44.19	20.27	129.20	3.47	2.74	623	228		
			9:39:34	44.20	20.28	131.95	5.76	4.79	623	130		
			9:39:35	44.22	20.28	129.81	7.10	6.00	623	104		
			9:39:36	44.23	20.27	126.78	3.81	3.04	623	205	144	Port plume at 44 ft
			9:39:37	44.34	20.27	127.96	5.66	4.70	623	133		
			9:39:38	44.33	20.28	130.73	6.49	5.44	623	115		

**TABLE D-3**

Profile PRO-01 on September 21, 2022 (0928-0943 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

26	Instantaneous Minimum Dilution in Profile
48	Minimum Average Dilution in Profile
132	Detected Plume Average Dilution
215	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:39:39	44.35	20.29	133.07	7.90	6.71	623	93		
			9:39:40	44.34	20.29	128.84	2.10	1.50	623	414		
			9:39:41	44.30	20.27	126.30	0.02	0.02	623	34804		
			9:39:42	44.24	20.26	125.35	0.02	0.02	623	32963		
			9:39:43	44.20	20.26	125.11	0.02	0.02	623	33316		
			9:39:44	44.13	20.26	124.30	0.02	0.02	623	36433		
			9:39:45	44.04	20.26	124.18	0.02	0.02	623	34420		
			9:39:46	43.80	20.26	124.15	0.02	0.02	623	32618		
			9:39:47	43.64	20.26	124.18	0.02	0.02	623	34420		
			9:39:48	43.40	20.26	124.13	0.02	0.02	623	36433		
			9:39:49	43.18	20.26	124.15	0.02	0.02	623	34804		
			9:39:50	42.78	20.26	124.13	0.02	0.02	623	36433		
			9:39:51	42.40	20.26	124.16	0.02	0.02	623	36221		
			9:39:52	41.95	20.26	124.85	0.02	0.02	623	34804		
			9:39:53	41.50	20.26	125.76	3.54	2.79	623	223		
			9:39:54	41.00	20.27	128.03	7.45	6.30	623	99		
			9:39:55	40.58	20.28	131.64	14.25	12.40	623	50		
			9:39:56	40.05	20.29	132.71	15.24	13.30	623	47	60	Port plume at 40 ft
			9:39:57	39.60	20.29	135.22	19.28	16.92	623	37		
			9:39:58	39.07	20.29	132.14	10.66	9.19	623	68		
			9:39:59	38.59	20.28	128.72	4.59	3.74	623	167		
			9:40:00	38.14	20.27	126.25	2.36	1.74	623	358		
			9:40:01	37.73	20.26	124.65	0.02	0.02	623	29952		
			9:40:02	37.23	20.26	125.00	0.02	0.02	623	35600		
			9:40:03	36.68	20.26	124.61	0.02	0.02	623	33676		
			9:40:04	36.34	20.26	124.37	0.02	0.02	623	32280		
			9:40:05	36.17	20.26	125.38	0.09	0.09	623	7227		
			9:40:06	36.18	20.26	128.62	5.15	4.24	623	147		
			9:40:07	36.12	20.27	128.51	8.21	6.99	623	89		
			9:40:08	35.86	20.26	125.02	0.93	0.45	623	1372		
			9:40:09	35.68	20.26	124.59	0.02	0.02	623	32618		
			9:40:10	35.30	20.26	125.01	0.06	0.06	623	10686		
			9:40:11	34.89	20.26	126.61	1.75	1.19	623	524		
			9:40:12	34.44	20.26	125.71	1.66	1.11	623	563		
			9:40:13	33.99	20.26	124.49	2.16	1.56	623	400		
			9:40:14	33.54	20.25	124.26	1.89	1.32	623	472		

**TABLE D-3**

Profile PRO-01 on September 21, 2022 (0928-0943 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

26	Instantaneous Minimum Dilution in Profile
48	Minimum Average Dilution in Profile
132	Detected Plume Average Dilution
215	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:40:15	33.11	20.25	124.18	0.84	0.38	623	1659		
			9:40:16	32.67	20.25	124.18	0.02	0.02	623	35398		
			9:40:17	32.40	20.25	124.11	0.02	0.02	623	34611		
			9:40:18	32.16	20.25	124.11	0.02	0.02	623	34420		
			9:40:19	32.00	20.25	124.15	0.31	0.31	623	1999		
			9:40:20	31.86	20.25	124.09	0.02	0.02	623	34611		
			9:40:21	31.72	20.26	124.09	0.02	0.02	623	32963		
			9:40:22	31.51	20.26	124.09	0.02	0.02	623	31949		
			9:40:23	31.33	20.26	124.09	0.02	0.02	623	33676		
			9:40:24	31.17	20.26	124.11	0.02	0.02	623	34420		
			9:40:25	31.06	20.25	124.13	0.02	0.02	623	36647		
			9:40:26	30.88	20.25	124.15	0.02	0.02	623	31786		
			9:40:27	30.78	20.25	124.07	0.02	0.02	623	33676		
			9:40:28	30.66	20.25	124.13	0.02	0.02	623	35600		
			9:40:29	30.53	20.25	124.15	0.02	0.02	623	34420		
			9:40:30	30.34	20.25	124.13	0.02	0.02	623	36012		
			9:40:31	30.22	20.25	124.13	0.02	0.02	623	32618		
			9:40:32	30.01	20.25	124.13	0.02	0.02	623	33676		
			9:40:33	29.89	20.25	124.24	0.02	0.02	623	34804		
			9:40:34	29.78	20.25	124.20	0.02	0.02	623	34420		
			9:40:35	29.95	20.25	124.18	0.02	0.02	623	32618		
			9:40:36	30.43	20.25	124.15	0.02	0.02	623	36433		
			9:40:37	31.17	20.25	124.20	0.02	0.02	623	35805		
			9:40:38	32.22	20.25	124.13	0.02	0.02	623	34804		
			9:40:39	33.45	20.25	124.20	0.02	0.02	623	38457		
			9:40:40	34.66	20.25	124.23	0.02	0.02	623	33676		
			9:40:41	35.91	20.25	124.51	0.02	0.02	623	34044		
			9:40:42	37.06	20.25	124.29	0.02	0.02	623	32280		
			9:40:43	38.07	20.26	132.33	14.10	12.27	623	51		
			9:40:44	39.08	20.29	132.57	19.11	16.76	623	37		
			9:40:45	39.99	20.27	129.59	11.69	10.11	623	62		
			9:40:46	40.85	20.27	128.03	6.76	5.69	623	110	106	Port plume at 40 ft
			9:40:47	41.65	20.26	127.21	4.74	3.87	623	161		
			9:40:48	42.33	20.27	128.52	6.67	5.61	623	111		
			9:40:49	43.04	20.27	130.26	4.49	3.65	623	171		
			9:40:50	43.58	20.27	129.35	7.90	6.71	623	93		

**TABLE D-3**

Profile PRO-01 on September 21, 2022 (0928-0943 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

26	Instantaneous Minimum Dilution in Profile
48	Minimum Average Dilution in Profile
132	Detected Plume Average Dilution
215	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:40:51	44.02	20.26	126.22	4.67	3.81	623	163		
			9:40:52	44.31	20.26	125.10	0.94	0.46	623	1350		
			9:40:53	44.48	20.25	124.98	0.91	0.44	623	1418		
			9:40:54	44.55	20.26	126.34	3.05	2.36	623	264		
			9:40:55	44.60	20.26	125.71	5.92	4.94	623	126		
			9:40:56	44.47	20.26	126.60	6.35	5.32	623	117		
			9:40:57	44.44	20.26	127.11	5.33	4.40	623	142		
			9:40:58	44.39	20.26	127.45	5.79	4.81	623	129	177	Port plume at 44 ft
			9:40:59	44.38	20.26	126.75	4.57	3.72	623	167		
			9:41:00	44.43	20.26	126.83	4.49	3.65	623	171		
			9:41:01	44.36	20.26	125.50	3.52	2.78	623	224		
			9:41:02	44.35	20.26	127.92	3.15	2.45	623	255		
			9:41:03	44.42	20.27	129.57	1.23	0.72	623	859		
			9:41:04	44.41	20.27	129.80	6.54	5.49	623	113		
			9:41:05	44.48	20.27	130.10	8.47	7.22	623	86		
			9:41:06	44.48	20.27	128.17	6.92	5.83	623	107	106	Port plume at 44 ft
			9:41:07	44.52	20.26	126.40	6.21	5.19	623	120		
			9:41:08	44.51	20.26	126.82	8.54	7.28	623	86		
			9:41:09	44.47	20.26	125.71	6.03	5.03	623	124		
			9:41:10	44.37	20.25	124.94	1.68	1.13	623	551		
			9:41:11	44.37	20.25	125.37	3.52	2.78	623	224		
			9:41:12	44.24	20.26	126.66	6.40	5.37	623	116		
			9:41:13	44.09	20.26	127.33	6.81	5.73	623	109		
			9:41:14	43.90	20.26	127.52	7.06	5.96	623	105		
			9:41:15	43.65	20.26	127.29	5.35	4.42	623	141		
			9:41:16	43.40	20.26	126.76	11.42	9.87	623	63	121	Port plume at 43 ft
			9:41:17	43.03	20.26	127.38	8.99	7.69	623	81		
			9:41:18	42.72	20.26	127.14	5.64	4.68	623	133		
			9:41:19	42.26	20.26	125.81	2.17	1.57	623	397		
			9:41:20	41.74	20.26	126.11	2.04	1.45	623	429		
			9:41:21	41.16	20.25	125.10	1.15	0.65	623	951		
			9:41:22	40.58	20.25	125.44	0.16	0.16	623	3906		
			9:41:23	39.94	20.25	124.87	0.21	0.21	623	2958		
			9:41:24	39.39	20.25	125.77	2.01	1.42	623	437		
			9:41:25	38.74	20.26	125.73	1.53	0.99	623	628		
			9:41:26	38.22	20.26	125.11	1.89	1.32	623	473		

**TABLE D-3**

Profile PRO-01 on September 21, 2022 (0928-0943 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

26	Instantaneous Minimum Dilution in Profile
48	Minimum Average Dilution in Profile
132	Detected Plume Average Dilution
215	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:41:27	37.49	20.26	124.70	0.78	0.32	623	1949		
			9:41:28	36.93	20.26	124.13	0.30	0.30	623	2055		
			9:41:29	36.31	20.26	124.11	0.02	0.02	623	36647		
			9:41:30	35.66	20.26	124.11	0.02	0.02	623	39430		
			9:41:31	35.14	20.26	124.13	0.02	0.02	623	36433		
			9:41:32	34.61	20.26	124.05	0.02	0.02	623	33316		
			9:41:33	34.13	20.26	124.05	0.02	0.02	623	37083		
			9:41:34	33.62	20.27	123.95	0.02	0.02	623	35600		
			9:41:35	33.16	20.27	123.82	0.02	0.02	623	34804		
			9:41:36	32.74	20.28	123.88	0.02	0.02	623	36647		
			9:41:37	32.32	20.28	123.88	0.02	0.02	623	35600		
			9:41:38	32.04	20.28	123.92	0.02	0.02	623	34804		
			9:41:39	31.67	20.27	124.03	0.02	0.02	623	36647		
			9:41:40	31.36	20.26	124.05	0.02	0.02	623	34804		
			9:41:41	30.98	20.26	124.05	0.02	0.02	623	34044		
			9:41:42	30.65	20.26	124.05	0.02	0.02	623	34804		
			9:41:43	30.59	20.27	123.84	0.02	0.02	623	32963		
			9:41:44	30.91	20.28	123.96	0.02	0.02	623	33316		
			9:41:45	31.24	20.26	124.01	0.02	0.02	623	33676		
			9:41:46	31.63	20.27	124.03	0.02	0.02	623	34420		
			9:41:47	31.98	20.26	123.96	0.02	0.02	623	30243		
			9:41:48	32.49	20.27	124.03	0.02	0.02	623	32280		
			9:41:49	32.93	20.26	124.03	0.02	0.02	623	35398		
			9:41:50	33.13	20.26	124.03	0.02	0.02	623	34420		
			9:41:51	33.14	20.26	124.05	0.02	0.02	623	33316		
			9:41:52	32.89	20.26	124.07	0.02	0.02	623	35398		
			9:41:53	32.54	20.26	125.43	0.02	0.02	623	32113		
			9:41:54	32.07	20.26	125.91	0.02	0.02	623	28190		
			9:41:55	31.55	20.26	124.37	0.32	0.32	623	1968		
			9:41:56	30.98	20.26	124.15	0.83	0.37	623	1684		
			9:41:57	30.64	20.26	124.11	0.22	0.22	623	2875		
			9:41:58	30.75	20.25	124.11	0.02	0.02	623	32963		
			9:41:59	31.14	20.25	124.09	0.02	0.02	623	28447		
			9:42:00	31.59	20.26	124.05	0.02	0.02	623	34804		
			9:42:01	31.91	20.26	124.09	0.02	0.02	623	33316		
			9:42:02	32.21	20.26	124.09	0.03	0.03	623	18879		

**TABLE D-3**

Profile PRO-01 on September 21, 2022 (0928-0943 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

26	Instantaneous Minimum Dilution in Profile
48	Minimum Average Dilution in Profile
132	Detected Plume Average Dilution
215	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:42:03	32.40	20.26	124.10	0.06	0.06	623	10668		
			9:42:04	32.58	20.26	124.05	0.02	0.02	623	35198		
			9:42:05	32.68	20.26	124.01	0.02	0.02	623	37988		
			9:42:06	32.73	20.26	124.11	0.02	0.02	623	33316		
			9:42:07	32.82	20.26	124.11	0.02	0.02	623	36647		
			9:42:08	32.87	20.25	124.11	0.02	0.02	623	37530		
			9:42:09	32.86	20.25	124.11	0.19	0.19	623	3326		
			9:42:10	32.75	20.25	124.09	0.08	0.08	623	7654		
			9:42:11	32.73	20.25	124.09	0.02	0.02	623	30243		
			9:42:12	32.83	20.26	124.10	0.05	0.05	623	13662		
			9:42:13	33.25	20.25	124.09	0.02	0.02	623	35805		
			9:42:14	34.11	20.26	124.09	0.02	0.02	623	35398		
			9:42:15	35.12	20.26	124.09	0.02	0.02	623	32280		
			9:42:16	36.22	20.25	124.09	0.02	0.02	623	34804		
			9:42:17	37.37	20.25	124.11	0.02	0.02	623	32963		
			9:42:18	38.61	20.25	124.39	0.02	0.02	623	34420		
			9:42:19	39.92	20.26	125.18	2.11	1.51	623	411		
			9:42:20	41.15	20.26	125.26	1.12	0.63	623	988		
			9:42:21	42.21	20.26	125.87	1.67	1.12	623	557		
			9:42:22	43.12	20.26	124.55	0.27	0.27	623	2289		
			9:42:23	43.77	20.25	124.18	0.02	0.02	623	33676		
			9:42:24	44.27	20.25	124.13	0.02	0.02	623	32963		
			9:42:25	44.52	20.25	124.20	0.02	0.02	623	34044		
			9:42:26	44.63	20.25	124.15	0.02	0.02	623	34044		
			9:42:27	44.58	20.25	124.19	0.02	0.02	623	37083		
			9:42:28	44.44	20.25	124.75	0.02	0.02	623	37530		
			9:42:29	44.40	20.25	124.84	0.02	0.02	623	36647		
			9:42:30	44.28	20.25	124.32	0.06	0.06	623	9873		
			9:42:31	44.23	20.25	124.20	0.02	0.02	623	32280		
			9:42:32	44.08	20.25	124.12	0.02	0.02	623	36012		
			9:42:33	44.04	20.25	124.13	0.02	0.02	623	34420		
			9:42:34	44.00	20.25	124.27	0.02	0.02	623	35198		
			9:42:35	44.07	20.25	124.56	0.51	0.08	623	7923		
			9:42:36	44.10	20.25	124.87	1.21	0.71	623	883		
			9:42:37	44.27	20.25	124.92	0.70	0.25	623	2534		
			9:42:38	44.40	20.25	124.92	0.08	0.08	623	8101		



**TABLE D-3**

Profile PRO-01 on September 21, 2022 (0928-0943 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

26	Instantaneous Minimum Dilution in Profile
48	Minimum Average Dilution in Profile
132	Detected Plume Average Dilution
215	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:42:39	44.50	20.26	125.00	0.51	0.08	623	7950		
			9:42:40	44.55	20.26	125.53	0.49	0.06	623	9928		
			9:42:41	44.57	20.26	125.75	0.51	0.07	623	8322		
			9:42:42	44.61	20.26	126.11	0.98	0.50	623	1234		
			9:42:43	44.56	20.26	126.62	1.53	0.99	623	629		
			9:42:44	44.52	20.26	126.34	3.54	2.80	623	222		
			9:42:45	44.52	20.26	126.44	4.43	3.60	623	173		Port plume at 44 ft
			9:42:46	44.44	20.26	125.93	2.64	1.99	623	313		
			9:42:47	44.41	20.26	125.41	0.60	0.16	623	3870		
			9:42:48	44.33	20.26	125.18	0.97	0.49	623	1270		
			9:42:49	44.22	20.25	125.00	2.13	1.53	623	406		
			9:42:50	44.14	20.25	124.49	1.69	1.14	623	546		
			9:42:51	44.04	20.25	124.75	0.37	0.37	623	1674		
			9:42:52	43.88	20.25	124.80	0.10	0.10	623	6429		
			9:42:53	43.65	20.25	124.82	0.14	0.14	623	4581		
			9:42:54	43.37	20.25	124.98	0.57	0.13	623	4778		
			9:42:55	43.05	20.26	125.36	1.41	0.89	623	703		
			9:42:56	42.70	20.26	126.18	3.14	2.44	623	256		
			9:42:57	42.36	20.27	129.70	8.55	7.29	623	85		
			9:42:58	41.95	20.28	130.32	9.91	8.51	623	73		
			9:42:59	41.52	20.27	127.94	6.30	5.27	623	118	161	Port plume at 42 ft
			9:43:00	41.08	20.26	126.61	3.38	2.65	623	235		
			9:43:01	40.66	20.26	126.96	4.38	3.56	623	175		
			9:43:02	40.36	20.26	127.31	4.60	3.75	623	166		
			9:43:03	40.01	20.26	125.87	4.22	3.41	623	183		
			9:43:04	39.80	20.26	125.01	1.26	0.75	623	829		
			9:43:05	39.56	20.25	124.89	0.63	0.19	623	3365		
			9:43:06	39.33	20.25	124.76	0.70	0.25	623	2454		
			9:43:07	39.10	20.26	126.50	4.37	3.54	623	176		
			9:43:08	38.83	20.27	127.54	4.22	3.41	623	183		
			9:43:09	38.52	20.27	126.12	2.91	2.24	623	279		
			9:43:10	38.22	20.26	125.02	0.75	0.30	623	2108		
			9:43:11	37.96	20.26	127.00	3.61	2.86	623	218		
			9:43:12	37.72	20.26	125.78	3.64	2.89	623	216		
			9:43:13	37.61	20.26	126.62	4.60	3.75	623	166	196	Port plume at 38 ft
			9:43:14	37.51	20.27	127.98	7.22	6.10	623	102		

**TABLE D-3**

Profile PRO-01 on September 21, 2022 (0928-0943 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

26	Instantaneous Minimum Dilution in Profile
48	Minimum Average Dilution in Profile
132	Detected Plume Average Dilution
215	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:43:15	37.36	20.26	125.40	2.93	2.25	623	277		
			9:43:16	37.11	20.26	124.32	0.02	0.02	623	36647		
			9:43:17	36.98	20.26	124.61	0.05	0.05	623	12611		
			9:43:18	36.99	20.26	124.27	0.05	0.05	623	13722		
			9:43:19	36.89	20.26	124.24	0.02	0.02	623	34044		
			9:43:20	36.96	20.26	124.15	0.02	0.02	623	34044		
			9:43:21	36.96	20.26	124.09	0.02	0.02	623	32963		
			9:43:22	36.88	20.26	124.05	0.02	0.02	623	34420		
			9:43:23	36.67	20.26	124.05	0.02	0.02	623	35198		
			9:43:24	36.35	20.26	124.03	0.02	0.02	623	32280		
			9:43:25	36.05	20.26	124.03	0.02	0.02	623	34420		
			9:43:26	35.70	20.26	124.03	0.02	0.02	623	32963		
			9:43:27	35.29	20.26	124.07	0.02	0.02	623	32280		
			9:43:28	34.98	20.26	124.05	0.02	0.02	623	34420		
			9:43:29	34.63	20.26	123.99	0.02	0.02	623	32280		
			9:43:30	34.21	20.26	124.05	0.02	0.02	623	33316		
			9:43:31	33.91	20.26	124.05	0.02	0.02	623	34420		
			9:43:32	33.59	20.26	124.03	0.02	0.02	623	35198		
			9:43:33	33.30	20.26	124.09	0.02	0.02	623	32963		
			9:43:34	33.03	20.26	124.07	0.02	0.02	623	31150		
			9:43:35	32.80	20.26	124.09	0.02	0.02	623	36647		
			9:43:36	32.55	20.26	124.11	0.02	0.02	623	37083		

**TABLE D-4**

Profile PRO-02 on September 21, 2022 (0950-1005 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-2 (Mixing Zone Boundary 242 ft North of Diffuser)	45 ft	0.53 m/sec 354 deg. (mag.) Ebb tide	9:50:59	2.34	20.11	122.02	1.66	1.11	643	579	674	Plume traces near surface at MZB
			9:51:00	2.22	20.01	121.78	1.67	1.12	643	574		
			9:51:01	2.24	20.02	122.04	1.94	1.36	643	473		
			9:51:02	2.20	20.08	122.29	1.87	1.30	643	496		
			9:51:03	2.26	20.15	122.43	1.42	0.90	643	716		
			9:51:04	2.22	20.19	122.62	1.66	1.11	643	581		
			9:51:05	2.21	20.21	122.46	1.61	1.07	643	602		
			9:51:06	2.21	20.22	122.71	1.34	0.83	643	779		
			9:51:07	2.17	20.22	122.62	1.27	0.76	643	843		
			9:51:08	2.18	20.22	122.84	1.49	0.96	643	672		
			9:51:09	2.18	20.22	122.81	1.36	0.85	643	761		
			9:51:10	2.15	20.23	122.65	1.57	1.03	643	623		
			9:51:11	2.11	20.22	122.83	1.54	1.00	643	643		
			9:51:12	2.11	20.23	122.66	1.16	0.66	643	970		
			9:51:13	2.13	20.13	121.72	1.27	0.76	643	849		
			9:51:14	2.09	19.84	122.10	1.56	1.02	643	631		
			9:51:15	2.15	19.80	121.83	1.14	0.64	643	1003		
			9:51:16	2.09	19.62	121.33	1.28	0.77	643	839		
			9:51:17	2.14	19.43	121.35	0.92	0.44	643	1449		
			9:51:18	2.12	19.47	121.62	1.12	0.62	643	1034		
			9:51:19	2.06	19.56	122.00	1.05	0.57	643	1134		
			9:51:20	2.08	19.69	122.26	0.80	0.34	643	1907		
			9:51:21	2.08	19.79	122.43	0.80	0.34	643	1882		
			9:51:22	2.10	19.87	122.69	0.65	0.21	643	3132		
			9:51:23	2.13	19.93	122.81	0.49	0.06	643	9976		
			9:51:24	2.14	19.96	122.91	0.46	0.03	643	21366		
			9:51:25	2.18	20.01	122.96	0.22	0.22	643	2932		
			9:51:26	2.20	20.04	123.02	0.32	0.32	643	2018		
			9:51:27	2.20	20.07	123.10	0.39	0.39	643	1654		
			9:51:28	2.24	20.10	123.12	0.53	0.09	643	6908		
			9:51:29	2.24	20.11	123.15	0.35	0.35	643	1815		
			9:51:30	2.32	20.12	123.15	0.41	0.41	643	1569		
			9:51:31	2.25	20.13	123.19	0.15	0.15	643	4208		
			9:51:32	2.25	20.14	123.25	0.09	0.09	643	7556		
			9:51:33	2.22	20.15	123.29	0.10	0.10	643	6335		
			9:51:34	2.19	20.15	123.36	0.05	0.05	643	12583		
			9:51:35	2.24	20.16	123.40	0.02	0.02	643	35137		
9:51:36	2.20	20.16	123.42	0.04	0.04	643	15383					
9:51:37	2.19	20.16	123.48	0.02	0.02	643	34021					

**TABLE D-4**

Profile PRO-02 on September 21, 2022 (0950-1005 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

194	Instantaneous Minimum Dilution in Profile
228	Minimum Average Dilution in Profile
459	Detected Plume Average Dilution
691	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:51:38	2.21	20.16	123.53	0.16	0.16	643	3947		No detected plume
			9:51:39	2.23	20.17	123.52	0.27	0.27	643	2405		
			9:51:40	2.26	20.18	123.55	0.17	0.17	643	3778		
			9:51:41	2.24	20.18	123.60	0.30	0.30	643	2140		
			9:51:42	2.19	20.25	123.75	0.05	0.05	643	12809		
			9:51:43	2.25	20.29	123.73	0.06	0.06	643	10541		
			9:51:44	2.27	20.29	123.75	0.02	0.02	643	34202		
			9:51:45	2.24	20.28	123.79	0.02	0.02	643	36954		
			9:51:46	2.21	20.28	123.77	0.02	0.02	643	35525		
			9:51:47	2.19	20.28	123.82	0.02	0.02	643	33316		
			9:51:48	2.18	20.28	123.79	0.02	0.02	643	33665		
			9:51:49	2.17	20.28	123.84	0.02	0.02	643	34757		
			9:51:50	2.11	20.28	123.85	0.02	0.02	643	32475		
			9:51:51	2.14	20.28	123.82	0.03	0.03	643	19024		
			9:51:52	2.10	20.28	123.75	0.02	0.02	643	37824		
			9:51:53	2.07	20.27	123.79	0.02	0.02	643	35137		
			9:51:54	2.06	20.28	123.73	0.02	0.02	643	35922		
			9:51:55	2.06	20.28	123.82	0.02	0.02	643	33665		
			9:51:56	2.07	20.27	123.82	0.02	0.02	643	36328		
			9:51:57	2.02	20.27	123.82	0.02	0.02	643	34385		
			9:51:58	2.11	20.27	123.79	0.02	0.02	643	34021		
			9:51:59	2.14	20.26	123.88	0.02	0.02	643	35525		
			9:52:00	2.11	20.27	123.89	0.02	0.02	643	34385		
			9:52:01	2.14	20.28	123.82	0.02	0.02	643	34757		
			9:52:02	2.14	20.29	123.79	0.02	0.02	643	33316		
			9:52:03	2.18	20.28	123.84	0.02	0.02	643	36743		
			9:52:04	2.14	20.27	123.88	0.02	0.02	643	34385		
			9:52:05	2.17	20.27	123.86	0.02	0.02	643	33316		
			9:52:06	2.15	20.29	123.82	0.02	0.02	643	33316		
			9:52:07	2.13	20.29	123.79	0.02	0.02	643	35525		
			9:52:08	2.14	20.29	123.84	0.02	0.02	643	37384		
			9:52:09	2.16	20.29	123.79	0.02	0.02	643	34385		
			9:52:10	2.18	20.29	123.82	0.02	0.02	643	36534		
			9:52:11	2.18	20.29	123.86	0.02	0.02	643	26352		
			9:52:12	2.19	20.29	123.75	0.02	0.02	643	32475		
			9:52:13	2.19	20.29	123.75	0.02	0.02	643	34757		
			9:52:14	2.23	20.29	123.82	0.02	0.02	643	35137		
			9:52:15	2.20	20.29	123.79	0.02	0.02	643	33665		
			9:52:16	2.24	20.28	123.75	0.02	0.02	643	35922		

**TABLE D-4**

Profile PRO-02 on September 21, 2022 (0950-1005 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

194	Instantaneous Minimum Dilution in Profile
228	Minimum Average Dilution in Profile
459	Detected Plume Average Dilution
691	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:52:17	2.24	20.27	123.77	0.02	0.02	643	33144		
			9:52:18	2.24	20.28	123.82	0.02	0.02	643	32640		
			9:52:19	2.25	20.29	123.79	0.07	0.07	643	9568		
			9:52:20	2.19	20.29	123.82	0.02	0.02	643	36328		
			9:52:21	2.24	20.29	123.84	0.02	0.02	643	33316		
			9:52:22	2.32	20.29	123.86	0.02	0.02	643	35525		
			9:52:23	2.46	20.28	123.82	0.02	0.02	643	35525		
			9:52:24	4.34	20.28	123.88	0.83	0.37	643	1757		
			9:52:25	6.49	20.28	123.90	0.59	0.15	643	4200		
			9:52:26	6.84	20.28	123.88	0.02	0.02	643	34757		
			9:52:27	7.01	20.28	123.90	0.02	0.02	643	35525		
			9:52:28	6.98	20.28	123.84	0.02	0.02	643	36328		
			9:52:29	7.04	20.28	123.87	0.02	0.02	643	35922		
			9:52:30	7.06	20.28	123.82	0.02	0.02	643	37384		
			9:52:31	7.14	20.29	123.82	0.02	0.02	643	37602		
			9:52:32	7.13	20.29	123.73	0.02	0.02	643	33665		
			9:52:33	7.05	20.29	123.79	0.02	0.02	643	35137		
			9:52:34	7.17	20.29	123.82	0.02	0.02	643	37168		
			9:52:35	7.05	20.29	123.79	0.02	0.02	643	35722		
			9:52:36	7.05	20.28	123.88	0.10	0.10	643	6373		
			9:52:37	7.04	20.27	123.86	0.02	0.02	643	33316		
			9:52:38	7.16	20.27	123.88	0.02	0.02	643	33665		
			9:52:39	7.04	20.27	123.95	0.02	0.02	643	33316		
			9:52:40	7.08	20.27	123.90	0.02	0.02	643	33316		
			9:52:41	7.06	20.27	123.94	0.02	0.02	643	35525		
			9:52:42	7.08	20.26	123.94	0.02	0.02	643	33665		
			9:52:43	7.09	20.26	123.92	0.02	0.02	643	34021		
			9:52:44	7.11	20.27	123.94	0.02	0.02	643	35137		
			9:52:45	7.13	20.27	123.88	0.02	0.02	643	34021		
			9:52:46	7.12	20.26	123.94	0.02	0.02	643	34757		
			9:52:47	7.02	20.26	123.96	0.02	0.02	643	32974		
			9:52:48	6.99	20.26	123.94	0.02	0.02	643	34757		
			9:52:49	6.94	20.26	123.98	0.02	0.02	643	36954		
			9:52:50	6.93	20.26	123.92	0.02	0.02	643	35137		
			9:52:51	7.00	20.26	123.98	0.02	0.02	643	33665		
			9:52:52	7.05	20.26	123.98	0.02	0.02	643	32312		
			9:52:53	7.19	20.26	124.01	0.02	0.02	643	39207		
			9:52:54	7.26	20.26	124.03	0.02	0.02	643	34385		
			9:52:55	7.33	20.26	123.98	0.02	0.02	643	38274		

**TABLE D-4**

Profile PRO-02 on September 21, 2022 (0950-1005 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

194	Instantaneous Minimum Dilution in Profile
228	Minimum Average Dilution in Profile
459	Detected Plume Average Dilution
691	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:52:56	7.28	20.27	123.86	0.02	0.02	643	36328		
			9:52:57	7.17	20.28	123.77	0.02	0.02	643	34757		
			9:52:58	7.14	20.28	123.81	0.02	0.02	643	35922		
			9:52:59	7.05	20.28	123.84	0.02	0.02	643	34385		
			9:53:00	7.04	20.28	123.86	0.02	0.02	643	36954		
			9:53:01	6.99	20.28	123.84	0.02	0.02	643	34021		
			9:53:02	7.06	20.29	123.82	0.02	0.02	643	33316		
			9:53:03	7.04	20.29	123.82	0.02	0.02	643	35722		
			9:53:04	7.08	20.28	123.86	0.02	0.02	643	31520		
			9:53:05	7.05	20.28	123.90	0.02	0.02	643	39207		
			9:53:06	7.14	20.28	123.84	0.02	0.02	643	34021		
			9:53:07	7.11	20.28	123.86	0.02	0.02	643	34385		
			9:53:08	7.17	20.27	123.87	0.02	0.02	643	32974		
			9:53:09	7.18	20.27	123.88	0.02	0.02	643	31832		
			9:53:10	7.18	20.27	123.86	0.02	0.02	643	35525		
			9:53:11	7.20	20.27	123.98	0.02	0.02	643	35525		
			9:53:12	7.28	20.27	123.92	0.02	0.02	643	35525		
			9:53:13	7.29	20.27	123.94	0.02	0.02	643	34385		
			9:53:14	7.30	20.26	123.94	0.02	0.02	643	36124		
			9:53:15	7.33	20.26	123.94	0.02	0.02	643	32974		
			9:53:16	7.47	20.26	123.96	0.02	0.02	643	33665		
			9:53:17	8.04	20.27	123.92	0.02	0.02	643	31520		
			9:53:18	8.77	20.27	123.95	0.02	0.02	643	37824		
			9:53:19	11.49	20.27	123.94	0.02	0.02	643	35137		
			9:53:20	12.79	20.26	123.90	0.02	0.02	643	34385		
			9:53:21	12.89	20.26	123.96	0.02	0.02	643	36328		
			9:53:22	12.92	20.26	123.96	0.02	0.02	643	34021		
			9:53:23	12.94	20.26	123.99	0.02	0.02	643	37384		
			9:53:24	12.98	20.26	123.94	0.02	0.02	643	34385		
			9:53:25	13.02	20.26	124.01	0.02	0.02	643	36328		
			9:53:26	12.98	20.26	123.99	0.02	0.02	643	35137		
			9:53:27	12.99	20.26	123.99	0.02	0.02	643	34021		
			9:53:28	12.95	20.26	123.96	0.02	0.02	643	36954		
			9:53:29	12.94	20.27	123.88	0.02	0.02	643	35525		
			9:53:30	12.98	20.29	123.82	0.02	0.02	643	38735		
			9:53:31	12.94	20.29	123.79	0.02	0.02	643	33144		
			9:53:32	12.93	20.29	123.77	0.02	0.02	643	36328		
			9:53:33	12.96	20.29	123.79	0.02	0.02	643	33316		
			9:53:34	12.91	20.29	123.84	0.02	0.02	643	38274		

**TABLE D-4**

Profile PRO-02 on September 21, 2022 (0950-1005 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

194	Instantaneous Minimum Dilution in Profile
228	Minimum Average Dilution in Profile
459	Detected Plume Average Dilution
691	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:53:35	12.93	20.29	123.84	0.02	0.02	643	34385		
			9:53:36	12.94	20.28	123.88	0.02	0.02	643	35922		
			9:53:37	12.92	20.28	123.93	0.02	0.02	643	34021		
			9:53:38	12.90	20.27	123.96	0.02	0.02	643	37168		
			9:53:39	12.93	20.26	123.96	0.02	0.02	643	34757		
			9:53:40	12.91	20.26	124.01	0.02	0.02	643	37168		
			9:53:41	12.82	20.26	123.99	0.02	0.02	643	35525		
			9:53:42	12.81	20.26	123.92	0.02	0.02	643	33665		
			9:53:43	12.76	20.27	123.92	0.02	0.02	643	34385		
			9:53:44	12.70	20.27	123.94	0.02	0.02	643	35922		
			9:53:45	12.70	20.26	123.96	0.02	0.02	643	38274		
			9:53:46	12.66	20.26	123.99	0.02	0.02	643	35137		
			9:53:47	12.68	20.26	123.97	0.02	0.02	643	33665		
			9:53:48	12.68	20.26	124.01	0.02	0.02	643	35525		
			9:53:49	12.65	20.26	123.99	0.02	0.02	643	34757		
			9:53:50	12.62	20.26	123.96	0.02	0.02	643	37168		
			9:53:51	12.59	20.26	123.96	0.02	0.02	643	38274		
			9:53:52	12.60	20.27	124.01	0.02	0.02	643	34021		
			9:53:53	12.59	20.27	123.96	0.02	0.02	643	35137		
			9:53:54	12.59	20.27	124.01	0.02	0.02	643	35137		
			9:53:55	12.61	20.26	123.99	0.02	0.02	643	34021		
			9:53:56	12.58	20.26	123.99	0.02	0.02	643	35137		
			9:53:57	12.59	20.26	123.96	0.02	0.02	643	36328		
			9:53:58	12.58	20.26	123.96	0.02	0.02	643	34757		
			9:53:59	13.68	20.27	123.94	0.02	0.02	643	37384		
			9:54:00	16.73	20.27	123.92	0.02	0.02	643	34757		
			9:54:01	17.59	20.27	123.99	0.02	0.02	643	33316		
			9:54:02	17.61	20.27	123.96	0.02	0.02	643	35525		
			9:54:03	17.54	20.27	123.96	0.02	0.02	643	33665		
			9:54:04	17.57	20.26	123.99	0.02	0.02	643	34021		
			9:54:05	17.51	20.26	124.01	0.02	0.02	643	34021		
			9:54:06	17.69	20.26	123.97	0.02	0.02	643	35137		
			9:54:07	17.71	20.27	123.96	0.02	0.02	643	38274		
			9:54:08	17.81	20.26	124.01	0.02	0.02	643	34021		
			9:54:09	17.79	20.26	124.05	0.02	0.02	643	32806		
			9:54:10	17.78	20.26	124.01	0.02	0.02	643	36328		
			9:54:11	17.63	20.26	124.01	0.02	0.02	643	34021		
			9:54:12	17.46	20.26	123.99	0.02	0.02	643	33316		
			9:54:13	17.33	20.26	123.96	0.02	0.02	643	37168		

**TABLE D-4**

Profile PRO-02 on September 21, 2022 (0950-1005 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

194	Instantaneous Minimum Dilution in Profile
228	Minimum Average Dilution in Profile
459	Detected Plume Average Dilution
691	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:54:14	17.25	20.26	124.01	0.02	0.02	643	36328		
			9:54:15	17.23	20.26	124.03	0.02	0.02	643	37384		
			9:54:16	17.29	20.26	124.06	0.02	0.02	643	36124		
			9:54:17	17.24	20.26	124.09	0.02	0.02	643	39207		
			9:54:18	17.18	20.26	124.01	0.02	0.02	643	34757		
			9:54:19	17.02	20.26	123.99	0.02	0.02	643	34385		
			9:54:20	16.89	20.26	124.03	0.02	0.02	643	32312		
			9:54:21	16.70	20.26	123.92	0.02	0.02	643	34385		
			9:54:22	16.50	20.26	124.03	0.02	0.02	643	39207		
			9:54:23	16.34	20.26	124.03	0.02	0.02	643	35722		
			9:54:24	16.35	20.26	123.99	0.02	0.02	643	34021		
			9:54:25	16.36	20.26	124.01	0.02	0.02	643	35922		
			9:54:26	16.46	20.26	123.99	0.02	0.02	643	36743		
			9:54:27	16.45	20.26	124.01	0.02	0.02	643	35525		
			9:54:28	16.45	20.26	123.99	0.02	0.02	643	37824		
			9:54:29	16.56	20.26	124.03	0.02	0.02	643	35525		
			9:54:30	16.76	20.26	123.99	0.02	0.02	643	35722		
			9:54:31	16.83	20.26	124.05	0.02	0.02	643	37824		
			9:54:32	16.88	20.25	124.05	0.02	0.02	643	38274		
			9:54:33	16.89	20.25	124.07	0.02	0.02	643	33665		
			9:54:34	16.82	20.25	124.09	0.02	0.02	643	37824		
			9:54:35	16.71	20.25	124.07	0.02	0.02	643	36328		
			9:54:36	16.77	20.25	124.06	0.02	0.02	643	34385		
			9:54:37	16.73	20.25	124.11	0.02	0.02	643	36534		
			9:54:38	16.63	20.25	124.09	0.02	0.02	643	35922		
			9:54:39	16.53	20.25	124.11	0.02	0.02	643	37168		
			9:54:40	16.54	20.25	124.07	0.02	0.02	643	33665		
			9:54:41	16.50	20.25	124.09	0.02	0.02	643	37824		
			9:54:42	16.63	20.25	124.11	0.02	0.02	643	37824		
			9:54:43	18.77	20.25	124.11	0.02	0.02	643	35525		
			9:54:44	21.11	20.25	124.07	0.02	0.02	643	34021		
			9:54:45	21.13	20.25	124.17	0.02	0.02	643	35137		
			9:54:46	21.00	20.25	124.27	0.02	0.02	643	36328		
			9:54:47	20.86	20.25	124.07	0.02	0.02	643	36328		
			9:54:48	20.87	20.25	124.09	0.02	0.02	643	32150		
			9:54:49	20.89	20.25	124.11	0.02	0.02	643	34757		
			9:54:50	21.04	20.25	124.19	0.02	0.02	643	34021		
			9:54:51	21.35	20.25	124.30	0.02	0.02	643	34757		
			9:54:52	21.77	20.25	124.74	0.07	0.07	643	9442		



**TABLE D-4**

Profile PRO-02 on September 21, 2022 (0950-1005 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

194	Instantaneous Minimum Dilution in Profile
228	Minimum Average Dilution in Profile
459	Detected Plume Average Dilution
691	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:54:53	22.35	20.25	124.39	0.02	0.02	643	33665		
			9:54:54	22.85	20.25	124.11	0.02	0.02	643	37824		
			9:54:55	23.31	20.25	124.34	0.02	0.02	643	35137		
			9:54:56	23.68	20.25	124.72	0.14	0.14	643	4538		
			9:54:57	23.95	20.25	125.20	0.90	0.43	643	1509		
			9:54:58	24.06	20.25	125.04	0.68	0.23	643	2779		
			9:54:59	24.15	20.25	124.59	0.02	0.02	643	34021		
			9:55:00	24.12	20.25	124.34	0.02	0.02	643	34021		
			9:55:01	24.16	20.25	124.29	0.02	0.02	643	35922		
			9:55:02	24.16	20.25	124.32	0.10	0.10	643	6347		
			9:55:03	24.16	20.25	124.49	0.07	0.07	643	9346		
			9:55:04	24.27	20.25	124.70	0.02	0.02	643	34021		
			9:55:05	24.11	20.25	124.50	0.02	0.02	643	36954		
			9:55:06	24.24	20.25	124.49	0.02	0.02	643	35922		
			9:55:07	24.13	20.25	124.51	0.03	0.03	643	20809		
			9:55:08	24.14	20.25	124.55	0.12	0.12	643	5562		
			9:55:09	24.08	20.25	124.53	0.06	0.06	643	10338		
			9:55:10	24.08	20.25	124.51	0.02	0.02	643	34385		
			9:55:11	24.03	20.25	124.55	0.02	0.02	643	37168		
			9:55:12	23.94	20.25	124.70	0.06	0.06	643	10405		
			9:55:13	23.81	20.25	124.57	0.21	0.21	643	3106		
			9:55:14	23.67	20.25	124.58	0.12	0.12	643	5232		
			9:55:15	23.51	20.25	124.74	0.82	0.35	643	1819		
			9:55:16	23.31	20.25	124.88	0.54	0.11	643	6051		
			9:55:17	23.10	20.25	124.94	0.67	0.23	643	2832		
			9:55:18	22.99	20.25	124.94	0.85	0.39	643	1664		
			9:55:19	22.90	20.25	124.85	0.52	0.09	643	7185		
			9:55:20	22.69	20.25	124.80	0.50	0.07	643	9614		
			9:55:21	22.64	20.25	124.78	0.71	0.26	643	2493		
			9:55:22	22.56	20.25	124.94	0.58	0.15	643	4417		
			9:55:23	22.44	20.25	125.28	1.27	0.77	643	840		
			9:55:24	22.45	20.25	125.97	3.78	3.01	643	214		
			9:55:25	22.35	20.26	126.41	4.11	3.31	643	194	228	Plume at 22 ft
			9:55:26	22.26	20.26	126.16	3.02	2.33	643	276		
			9:55:27	22.17	20.25	125.06	1.01	0.53	643	1216		
			9:55:28	22.08	20.25	125.00	0.51	0.08	643	8358		
			9:55:29	22.09	20.25	125.78	2.41	1.78	643	361		
			9:55:30	22.08	20.25	125.47	1.95	1.37	643	469		
			9:55:31	21.92	20.25	125.18	2.56	1.92	643	335		

**TABLE D-4**

Profile PRO-02 on September 21, 2022 (0950-1005 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

194	Instantaneous Minimum Dilution in Profile
228	Minimum Average Dilution in Profile
459	Detected Plume Average Dilution
691	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:55:32	21.67	20.25	125.73	2.02	1.44	643	447	378	Plume at 20 ft
			9:55:33	21.31	20.25	126.17	2.97	2.28	643	282		
			9:55:34	20.92	20.25	125.53	2.33	1.71	643	376		
			9:55:35	20.51	20.25	125.20	1.32	0.81	643	795		
			9:55:36	20.17	20.25	124.49	1.16	0.67	643	966		
			9:55:37	20.01	20.25	124.55	0.64	0.20	643	3239		
			9:55:38	20.08	20.25	124.25	0.02	0.02	643	29361		
			9:55:39	20.22	20.25	124.22	0.02	0.02	643	36328		
			9:55:40	20.22	20.25	124.11	0.02	0.02	643	30619		
			9:55:41	20.28	20.25	124.13	0.02	0.02	643	37168		
			9:55:42	20.22	20.25	124.11	0.02	0.02	643	34757		
			9:55:43	20.16	20.25	124.10	0.02	0.02	643	35137		
			9:55:44	20.03	20.25	124.09	0.02	0.02	643	38274		
			9:55:45	19.95	20.25	124.09	0.02	0.02	643	36954		
			9:55:46	19.94	20.25	124.15	0.02	0.02	643	34757		
			9:55:47	19.90	20.25	124.05	0.02	0.02	643	34757		
			9:55:48	19.80	20.25	124.07	0.02	0.02	643	38274		
			9:55:49	19.74	20.25	124.11	0.02	0.02	643	34385		
			9:55:50	19.66	20.25	124.11	0.02	0.02	643	35525		
			9:55:51	19.60	20.25	124.13	0.02	0.02	643	35137		
			9:55:52	19.64	20.25	124.11	0.02	0.02	643	39207		
			9:55:53	19.60	20.24	124.11	0.02	0.02	643	36954		
			9:55:54	19.52	20.25	124.05	0.02	0.02	643	34385		
			9:55:55	19.50	20.25	124.13	0.02	0.02	643	34385		
			9:55:56	19.42	20.25	124.13	0.02	0.02	643	37824		
			9:55:57	19.41	20.24	124.15	0.02	0.02	643	34021		
			9:55:58	19.56	20.24	124.15	0.02	0.02	643	35922		
			9:55:59	20.01	20.24	124.20	0.02	0.02	643	32312		
			9:56:00	20.62	20.24	124.18	0.02	0.02	643	35137		
			9:56:01	21.29	20.24	124.13	0.02	0.02	643	35137		
			9:56:02	21.96	20.24	124.12	0.02	0.02	643	35137		
			9:56:03	22.60	20.24	124.11	0.02	0.02	643	32806		
			9:56:04	23.11	20.24	124.15	0.02	0.02	643	39207		
			9:56:05	23.46	20.24	124.15	0.02	0.02	643	37824		
			9:56:06	23.74	20.24	124.13	0.02	0.02	643	37824		
			9:56:07	23.91	20.24	124.09	0.02	0.02	643	35922		
			9:56:08	24.11	20.25	124.07	0.02	0.02	643	35525		
			9:56:09	24.14	20.25	124.07	0.02	0.02	643	33665		
			9:56:10	24.17	20.25	124.07	0.07	0.07	643	9239		

**TABLE D-4**

Profile PRO-02 on September 21, 2022 (0950-1005 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

194	Instantaneous Minimum Dilution in Profile
228	Minimum Average Dilution in Profile
459	Detected Plume Average Dilution
691	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:56:11	24.18	20.25	124.09	0.02	0.02	643	34757		
			9:56:12	24.19	20.25	124.01	0.02	0.02	643	28079		
			9:56:13	24.19	20.25	124.07	0.02	0.02	643	33144		
			9:56:14	24.15	20.25	124.07	0.02	0.02	643	34021		
			9:56:15	24.17	20.25	124.05	0.02	0.02	643	38274		
			9:56:16	24.11	20.25	124.11	0.02	0.02	643	35525		
			9:56:17	24.17	20.25	124.05	0.02	0.02	643	35137		
			9:56:18	24.15	20.25	124.09	0.02	0.02	643	34021		
			9:56:19	24.18	20.25	124.11	0.02	0.02	643	34021		
			9:56:20	24.19	20.25	124.09	0.02	0.02	643	35922		
			9:56:21	24.20	20.25	124.11	0.02	0.02	643	35137		
			9:56:22	24.17	20.25	124.08	0.02	0.02	643	38735		
			9:56:23	24.18	20.24	124.15	0.02	0.02	643	34385		
			9:56:24	24.21	20.24	124.11	0.02	0.02	643	36954		
			9:56:25	24.14	20.25	124.13	0.02	0.02	643	37168		
			9:56:26	24.19	20.25	124.15	0.02	0.02	643	35525		
			9:56:27	24.13	20.25	124.13	0.02	0.02	643	35922		
			9:56:28	24.15	20.24	124.09	0.02	0.02	643	34757		
			9:56:29	24.16	20.24	124.09	0.02	0.02	643	34385		
			9:56:30	24.17	20.25	124.11	0.02	0.02	643	37602		
			9:56:31	24.12	20.25	124.12	0.02	0.02	643	37824		
			9:56:32	24.09	20.25	124.11	0.02	0.02	643	36743		
			9:56:33	24.07	20.25	124.09	0.02	0.02	643	35137		
			9:56:34	24.07	20.25	124.09	0.02	0.02	643	36954		
			9:56:35	24.08	20.25	124.09	0.02	0.02	643	36954		
			9:56:36	24.07	20.25	124.09	0.02	0.02	643	34385		
			9:56:37	24.11	20.25	124.05	0.02	0.02	643	34757		
			9:56:38	24.05	20.25	124.05	0.02	0.02	643	37824		
			9:56:39	24.12	20.25	124.09	0.02	0.02	643	37602		
			9:56:40	24.12	20.25	124.07	0.02	0.02	643	40188		
			9:56:41	24.03	20.25	124.06	0.02	0.02	643	33316		
			9:56:42	24.06	20.25	124.07	0.02	0.02	643	36743		
			9:56:43	24.10	20.25	124.11	0.02	0.02	643	37168		
			9:56:44	24.06	20.25	124.07	0.02	0.02	643	32974		
			9:56:45	24.06	20.25	124.09	0.02	0.02	643	33665		
			9:56:46	24.07	20.25	124.11	0.02	0.02	643	38274		
			9:56:47	24.08	20.25	124.07	0.02	0.02	643	35922		
			9:56:48	24.09	20.25	124.11	0.02	0.02	643	36328		
			9:56:49	24.11	20.25	124.07	0.02	0.02	643	32974		

**TABLE D-4**

Profile PRO-02 on September 21, 2022 (0950-1005 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

194	Instantaneous Minimum Dilution in Profile
228	Minimum Average Dilution in Profile
459	Detected Plume Average Dilution
691	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:56:50	24.10	20.25	124.05	0.02	0.02	643	36534		
			9:56:51	24.09	20.25	124.06	0.02	0.02	643	32974		
			9:56:52	24.09	20.25	124.07	0.02	0.02	643	35137		
			9:56:53	24.06	20.25	124.05	0.02	0.02	643	33665		
			9:56:54	24.07	20.25	124.03	0.02	0.02	643	29769		
			9:56:55	24.05	20.25	124.07	0.02	0.02	643	35525		
			9:56:56	23.96	20.26	124.45	0.02	0.02	643	34757		
			9:56:57	23.90	20.26	124.46	0.04	0.04	643	18011		
			9:56:58	23.86	20.26	124.39	0.02	0.02	643	38274		
			9:56:59	23.77	20.26	124.46	0.15	0.15	643	4389		
			9:57:00	23.71	20.26	124.44	0.26	0.26	643	2430		
			9:57:01	23.56	20.26	124.27	0.02	0.02	643	38274		
			9:57:02	23.51	20.26	124.18	0.02	0.02	643	35525		
			9:57:03	23.33	20.26	124.27	0.02	0.02	643	35922		
			9:57:04	23.22	20.26	124.27	0.02	0.02	643	38735		
			9:57:05	23.14	20.26	124.34	0.07	0.07	643	9018		
			9:57:06	23.08	20.26	124.57	0.56	0.12	643	5331		
			9:57:07	22.94	20.26	124.74	0.86	0.39	643	1628	3035	Plume traces at 22 ft
			9:57:08	22.99	20.25	124.89	1.00	0.52	643	1229		
			9:57:09	22.88	20.25	124.49	0.16	0.16	643	3952		
			9:57:10	22.81	20.26	124.33	0.02	0.02	643	36328		
			9:57:11	22.84	20.26	124.44	0.02	0.02	643	35525		
			9:57:12	22.76	20.26	124.63	0.24	0.24	643	2658		
			9:57:13	22.71	20.26	124.78	0.62	0.18	643	3565		
			9:57:14	22.58	20.25	124.78	0.63	0.19	643	3370		
			9:57:15	22.48	20.25	124.86	0.50	0.07	643	9055		
			9:57:16	22.23	20.26	125.24	1.61	1.07	643	601		
			9:57:17	22.00	20.26	125.09	1.26	0.76	643	851	771	Plume traces at 20 ft
			9:57:18	21.75	20.26	125.35	1.11	0.62	643	1035		
			9:57:19	21.50	20.26	125.21	1.62	1.07	643	598		
			9:57:20	21.17	20.26	124.37	0.37	0.37	643	1736		
			9:57:21	20.89	20.26	123.99	0.07	0.07	643	8796		
			9:57:22	20.54	20.26	123.99	0.40	0.40	643	1590		
			9:57:23	20.32	20.26	124.03	0.07	0.07	643	9069		
			9:57:24	20.12	20.26	124.07	0.02	0.02	643	35722		
			9:57:25	19.91	20.26	124.03	0.02	0.02	643	34385		
			9:57:26	19.84	20.26	124.01	0.02	0.02	643	36743		
			9:57:27	19.87	20.26	124.07	0.02	0.02	643	35525		
			9:57:28	19.84	20.26	124.09	0.02	0.02	643	34757		

**TABLE D-4**

Profile PRO-02 on September 21, 2022 (0950-1005 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

194	Instantaneous Minimum Dilution in Profile
228	Minimum Average Dilution in Profile
459	Detected Plume Average Dilution
691	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:57:29	19.78	20.26	124.37	0.02	0.02	643	36328		
			9:57:30	19.71	20.26	124.53	0.13	0.13	643	4766		
			9:57:31	19.74	20.26	124.28	0.04	0.04	643	17762		
			9:57:32	19.74	20.26	124.13	0.02	0.02	643	40188		
			9:57:33	19.75	20.26	124.01	0.02	0.02	643	34757		
			9:57:34	19.83	20.26	124.05	0.02	0.02	643	34385		
			9:57:35	19.87	20.26	124.01	0.02	0.02	643	32640		
			9:57:36	19.87	20.26	124.03	0.02	0.02	643	34757		
			9:57:37	19.94	20.26	123.99	0.02	0.02	643	34021		
			9:57:38	19.91	20.26	124.01	0.02	0.02	643	37602		
			9:57:39	19.88	20.25	124.10	0.02	0.02	643	37824		
			9:57:40	19.93	20.25	124.07	0.02	0.02	643	40188		
			9:57:41	19.86	20.25	124.03	0.02	0.02	643	35137		
			9:57:42	19.93	20.26	124.01	0.02	0.02	643	34021		
			9:57:43	19.95	20.25	124.07	0.02	0.02	643	39691		
			9:57:44	19.93	20.25	124.03	0.02	0.02	643	39207		
			9:57:45	19.96	20.25	124.01	0.02	0.02	643	35922		
			9:57:46	20.00	20.25	124.03	0.02	0.02	643	34757		
			9:57:47	20.01	20.26	124.05	0.02	0.02	643	35137		
			9:57:48	20.02	20.26	123.96	0.02	0.02	643	36954		
			9:57:49	20.02	20.26	123.97	0.02	0.02	643	35922		
			9:57:50	19.96	20.26	124.01	0.02	0.02	643	38274		
			9:57:51	19.94	20.26	123.99	0.02	0.02	643	37168		
			9:57:52	19.99	20.26	124.03	0.02	0.02	643	34757		
			9:57:53	19.93	20.26	123.99	0.02	0.02	643	34385		
			9:57:54	19.85	20.27	123.99	0.02	0.02	643	32312		
			9:57:55	19.77	20.27	123.94	0.02	0.02	643	36124		
			9:57:56	19.72	20.27	123.99	0.02	0.02	643	35525		
			9:57:57	19.63	20.27	123.99	0.02	0.02	643	37168		
			9:57:58	19.59	20.27	123.95	0.02	0.02	643	31520		
			9:57:59	19.60	20.27	123.96	0.02	0.02	643	34385		
			9:58:00	19.51	20.27	124.13	0.02	0.02	643	36534		
			9:58:01	19.44	20.26	124.13	0.02	0.02	643	34021		
			9:58:02	19.40	20.26	124.25	0.07	0.07	643	9655		
			9:58:03	19.51	20.26	124.03	0.02	0.02	643	36743		
			9:58:04	19.65	20.26	124.01	0.02	0.02	643	35922		
			9:58:05	20.02	20.26	124.03	0.02	0.02	643	33316		
			9:58:06	20.56	20.26	124.03	0.02	0.02	643	36534		
			9:58:07	21.09	20.26	124.18	0.02	0.02	643	34385		

**TABLE D-4**

Profile PRO-02 on September 21, 2022 (0950-1005 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

194	Instantaneous Minimum Dilution in Profile
228	Minimum Average Dilution in Profile
459	Detected Plume Average Dilution
691	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:58:08	21.88	20.26	124.08	0.02	0.02	643	36534		
			9:58:09	23.42	20.26	124.19	0.02	0.02	643	37824		
			9:58:10	27.13	20.26	125.16	0.57	0.14	643	4751		
			9:58:11	28.87	20.25	125.72	2.02	1.44	643	448		
			9:58:12	29.25	20.26	125.83	1.37	0.86	643	752		
			9:58:13	29.62	20.26	125.76	2.50	1.87	643	344		
			9:58:14	29.84	20.26	125.54	1.56	1.02	643	629		
			9:58:15	29.98	20.26	125.35	1.36	0.84	643	767		
			9:58:16	29.99	20.26	125.26	2.20	1.60	643	403	573	Plume at 30 ft
			9:58:17	30.06	20.26	125.37	1.41	0.88	643	729		
			9:58:18	30.02	20.26	125.46	1.59	1.05	643	612		
			9:58:19	30.10	20.26	125.59	1.74	1.18	643	545		
			9:58:20	30.01	20.26	125.76	1.43	0.90	643	712		
			9:58:21	30.03	20.26	125.91	1.96	1.38	643	466		
			9:58:22	29.98	20.26	126.10	1.70	1.15	643	559		
			9:58:23	29.98	20.26	125.69	1.88	1.31	643	492		
			9:58:24	29.99	20.26	125.55	0.88	0.41	643	1578		
			9:58:25	29.96	20.26	125.71	1.47	0.94	643	683		
			9:58:26	29.97	20.26	126.02	2.29	1.68	643	383		
			9:58:27	29.97	20.26	126.15	2.79	2.13	643	302		
			9:58:28	29.97	20.26	126.21	2.79	2.13	643	302		
			9:58:29	30.01	20.26	126.18	2.54	1.90	643	338		
			9:58:30	29.98	20.26	126.18	2.49	1.86	643	346		
			9:58:31	29.99	20.26	126.18	2.63	1.98	643	324		
			9:58:32	29.97	20.26	126.14	2.12	1.52	643	423	418	Plume at 30 ft
			9:58:33	30.01	20.26	126.06	2.57	1.93	643	333		
			9:58:34	29.95	20.26	125.97	2.19	1.58	643	406		
			9:58:35	29.93	20.26	125.66	2.15	1.55	643	415		
			9:58:36	29.94	20.26	125.56	1.76	1.20	643	535		
			9:58:37	29.93	20.26	125.55	2.14	1.54	643	418		
			9:58:38	29.90	20.26	125.45	1.94	1.36	643	472		
			9:58:39	29.80	20.25	124.97	1.63	1.09	643	591		
			9:58:40	29.77	20.25	125.22	0.89	0.42	643	1545		
			9:58:41	29.61	20.25	125.41	1.50	0.97	643	663		
			9:58:42	29.55	20.26	125.76	2.48	1.85	643	348		
			9:58:43	29.42	20.26	125.55	1.76	1.20	643	535		
			9:58:44	29.25	20.26	125.45	1.29	0.78	643	828		
			9:58:45	29.08	20.26	125.37	1.01	0.52	643	1228		
			9:58:46	28.93	20.25	125.10	0.76	0.31	643	2096		

**TABLE D-4**

Profile PRO-02 on September 21, 2022 (0950-1005 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

194	Instantaneous Minimum Dilution in Profile
228	Minimum Average Dilution in Profile
459	Detected Plume Average Dilution
691	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:58:47	28.73	20.25	124.70	0.22	0.22	643	2967		
			9:58:48	28.53	20.25	124.68	0.11	0.11	643	5793		
			9:58:49	28.39	20.25	124.90	0.95	0.47	643	1358		
			9:58:50	28.23	20.25	125.01	0.84	0.37	643	1731		
			9:58:51	28.04	20.25	125.11	2.86	2.19	643	293		
			9:58:52	27.84	20.25	125.71	2.67	2.01	643	319		
			9:58:53	27.70	20.25	125.74	2.52	1.88	643	342		
			9:58:54	27.60	20.25	125.52	1.58	1.04	643	619		
			9:58:55	27.48	20.25	125.28	0.55	0.12	643	5554		
			9:58:56	27.32	20.25	124.98	0.55	0.11	643	5650		
			9:58:57	27.16	20.25	124.97	0.79	0.33	643	1958		
			9:58:58	26.95	20.25	125.18	1.02	0.54	643	1191		
			9:58:59	26.70	20.25	125.37	1.40	0.88	643	731		
			9:59:00	26.59	20.25	125.45	1.91	1.33	643	482		
			9:59:01	26.36	20.25	125.37	1.61	1.07	643	601		
			9:59:02	26.26	20.25	125.16	1.42	0.90	643	714	677	Plume at 25 ft
			9:59:03	26.05	20.25	125.03	1.50	0.97	643	666		
			9:59:04	25.86	20.25	125.22	1.28	0.77	643	840		
			9:59:05	25.72	20.25	125.31	1.46	0.93	643	692		
			9:59:06	25.58	20.25	125.09	1.46	0.93	643	691		
			9:59:07	25.49	20.25	125.49	1.95	1.37	643	468		
			9:59:08	25.42	20.25	125.70	2.43	1.81	643	356		
			9:59:09	25.36	20.25	125.57	2.10	1.50	643	428		
			9:59:10	25.30	20.26	125.76	2.36	1.74	643	370		
			9:59:11	25.25	20.26	125.68	2.38	1.76	643	366		
			9:59:12	25.18	20.26	125.70	2.03	1.45	643	444	437	Plume at 25 ft
			9:59:13	25.15	20.26	125.66	2.01	1.43	643	451		
			9:59:14	25.00	20.25	125.64	2.10	1.51	643	426		
			9:59:15	24.94	20.25	125.62	2.06	1.47	643	436		
			9:59:16	24.86	20.25	125.54	2.14	1.54	643	417		
			9:59:17	24.90	20.25	125.43	1.85	1.28	643	502		
			9:59:18	24.90	20.25	125.35	1.64	1.09	643	590		
			9:59:19	24.84	20.25	125.41	2.09	1.49	643	431		
			9:59:20	24.82	20.25	125.41	1.64	1.09	643	589		
			9:59:21	24.82	20.25	125.28	1.22	0.72	643	892		
			9:59:22	24.83	20.25	125.41	1.55	1.02	643	633		
			9:59:23	24.76	20.25	125.83	2.42	1.79	643	359		
			9:59:24	24.78	20.25	125.88	2.04	1.45	643	443		
			9:59:25	24.96	20.25	125.74	2.00	1.42	643	453		

**TABLE D-4**

Profile PRO-02 on September 21, 2022 (0950-1005 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

194	Instantaneous Minimum Dilution in Profile
228	Minimum Average Dilution in Profile
459	Detected Plume Average Dilution
691	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:59:26	25.28	20.25	125.89	2.47	1.84	643	350	342	Plume at 25 ft
			9:59:27	25.55	20.25	126.14	2.92	2.24	643	287		
			9:59:28	25.75	20.26	126.14	3.23	2.52	643	255		
			9:59:29	25.79	20.25	126.26	2.95	2.27	643	283		
			9:59:30	25.77	20.26	126.39	3.55	2.81	643	229		
			9:59:31	25.75	20.25	126.04	3.01	2.32	643	277		
			9:59:32	25.48	20.25	125.73	2.62	1.97	643	326		
			9:59:33	25.29	20.25	125.42	2.34	1.72	643	373		
			9:59:34	25.14	20.25	125.29	1.96	1.38	643	465		
			9:59:35	25.05	20.25	124.76	0.59	0.15	643	4329		
			9:59:36	24.93	20.25	124.18	0.15	0.15	643	4371		
			9:59:37	24.87	20.25	124.13	0.95	0.47	643	1368		
			9:59:38	24.85	20.25	124.13	0.21	0.21	643	3005		
			9:59:39	24.82	20.25	124.11	0.04	0.04	643	17568		
			9:59:40	24.76	20.24	124.05	0.02	0.02	643	35922		
			9:59:41	24.83	20.25	124.09	0.02	0.02	643	37384		
			9:59:42	24.84	20.25	124.07	0.02	0.02	643	38735		
			9:59:43	24.89	20.25	124.03	0.02	0.02	643	36124		
			9:59:44	25.00	20.25	124.09	0.02	0.02	643	35525		
			9:59:45	25.11	20.25	124.05	0.02	0.02	643	36328		
			9:59:46	25.18	20.25	124.07	0.02	0.02	643	35525		
			9:59:47	25.24	20.25	124.07	0.02	0.02	643	36534		
			9:59:48	25.34	20.25	124.25	0.02	0.02	643	35137		
			9:59:49	25.36	20.25	124.51	0.02	0.02	643	37824		
			9:59:50	25.38	20.25	124.44	0.07	0.07	643	8943		
			9:59:51	25.33	20.25	124.61	0.02	0.02	643	32640		
			9:59:52	25.15	20.26	124.11	0.02	0.02	643	34385		
			9:59:53	24.90	20.26	124.03	0.02	0.02	643	38735		
			9:59:54	24.57	20.26	124.11	0.02	0.02	643	33144		
			9:59:55	24.13	20.26	124.05	0.02	0.02	643	34757		
			9:59:56	23.79	20.26	124.05	0.02	0.02	643	37824		
			9:59:57	23.46	20.26	124.09	0.02	0.02	643	37824		
			9:59:58	23.38	20.25	124.07	0.02	0.02	643	37384		
			9:59:59	23.61	20.25	124.09	0.02	0.02	643	35137		
			10:00:00	23.92	20.25	124.09	0.02	0.02	643	34385		
			10:00:01	24.05	20.25	124.07	0.02	0.02	643	34021		
			10:00:02	24.01	20.26	124.01	0.02	0.02	643	32640		
			10:00:03	23.96	20.26	124.03	0.02	0.02	643	34385		
			10:00:04	23.83	20.26	124.05	0.02	0.02	643	34757		



**TABLE D-4**

Profile PRO-02 on September 21, 2022 (0950-1005 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

194	Instantaneous Minimum Dilution in Profile
228	Minimum Average Dilution in Profile
459	Detected Plume Average Dilution
691	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:00:05	23.69	20.26	124.07	0.02	0.02	643	33665		Plume at 25-30 ft
			10:00:06	23.62	20.26	124.21	0.02	0.02	643	36743		
			10:00:07	23.83	20.26	124.42	0.02	0.02	643	35137		
			10:00:08	24.31	20.26	124.92	0.71	0.26	643	2484		
			10:00:09	24.96	20.25	125.53	2.15	1.55	643	415		
			10:00:10	25.69	20.25	125.75	2.37	1.75	643	367		
			10:00:11	26.37	20.25	125.83	2.68	2.03	643	317		
			10:00:12	27.08	20.25	125.83	2.36	1.74	643	369		
			10:00:13	27.77	20.25	125.80	2.46	1.83	643	351	414	
			10:00:14	28.24	20.25	125.70	2.01	1.42	643	452		
			10:00:15	28.82	20.25	125.39	1.92	1.35	643	478		
			10:00:16	29.03	20.25	125.30	1.70	1.15	643	560		
			10:00:17	29.40	20.25	125.20	1.64	1.09	643	591		
			10:00:18	29.58	20.25	125.24	1.58	1.04	643	617		
			10:00:19	29.77	20.25	125.28	1.17	0.67	643	955		
			10:00:20	29.89	20.25	125.30	1.49	0.96	643	669		
			10:00:21	29.98	20.25	125.04	0.84	0.38	643	1699		
			10:00:22	30.04	20.26	124.82	0.09	0.09	643	6907		
			10:00:23	30.05	20.26	124.65	0.04	0.04	643	15129		
			10:00:24	29.98	20.26	124.72	0.02	0.02	643	34757		
			10:00:25	30.02	20.26	124.99	0.84	0.38	643	1710		
			10:00:26	30.04	20.26	124.99	0.96	0.48	643	1331		
			10:00:27	30.02	20.26	125.05	0.56	0.12	643	5184		
			10:00:28	30.06	20.26	125.09	0.82	0.36	643	1786		
			10:00:29	29.95	20.26	124.89	0.30	0.30	643	2177		
			10:00:30	30.02	20.26	124.74	0.65	0.20	643	3206		
			10:00:31	30.04	20.26	124.66	0.48	0.06	643	11422		
			10:00:32	29.97	20.26	124.57	0.54	0.10	643	6192		
			10:00:33	29.92	20.26	124.55	0.02	0.02	643	33316		
			10:00:34	29.86	20.26	124.55	0.04	0.04	643	14850		
			10:00:35	29.69	20.26	124.98	0.37	0.37	643	1755		
			10:00:36	29.47	20.25	125.37	0.88	0.41	643	1577		
			10:00:37	29.24	20.25	125.20	1.55	1.02	643	633		
			10:00:38	29.03	20.26	124.44	0.62	0.18	643	3621		
			10:00:39	28.76	20.26	124.29	0.54	0.10	643	6235		
			10:00:40	28.43	20.26	124.42	0.02	0.02	643	34385		
			10:00:41	28.04	20.25	125.08	0.58	0.14	643	4616		
			10:00:42	27.69	20.25	125.35	1.72	1.17	643	551		
			10:00:43	27.32	20.25	125.32	1.35	0.84	643	770		

**TABLE D-4**

Profile PRO-02 on September 21, 2022 (0950-1005 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

194	Instantaneous Minimum Dilution in Profile
228	Minimum Average Dilution in Profile
459	Detected Plume Average Dilution
691	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:00:44	26.89	20.25	124.37	0.06	0.06	643	11340		
			10:00:45	26.60	20.26	124.09	0.02	0.02	643	37602		
			10:00:46	26.42	20.26	124.01	0.02	0.02	643	37824		
			10:00:47	26.40	20.26	124.03	0.02	0.02	643	35137		
			10:00:48	26.36	20.26	124.03	0.02	0.02	643	33665		
			10:00:49	26.45	20.26	124.05	0.02	0.02	643	35525		
			10:00:50	26.64	20.26	124.06	0.02	0.02	643	37168		
			10:00:51	26.75	20.26	124.23	0.02	0.02	643	37824		
			10:00:52	26.74	20.26	124.42	0.03	0.03	643	19251		
			10:00:53	26.74	20.26	124.27	0.02	0.02	643	30474		
			10:00:54	26.56	20.26	124.07	0.02	0.02	643	36743		
			10:00:55	26.48	20.26	124.87	0.10	0.10	643	6385		
			10:00:56	26.20	20.26	125.43	0.06	0.06	643	9938		
			10:00:57	25.94	20.26	124.33	0.02	0.02	643	32475		
			10:00:58	25.68	20.26	124.07	0.02	0.02	643	33665		
			10:00:59	25.37	20.26	124.05	0.02	0.02	643	34021		
			10:01:00	25.19	20.26	124.01	0.02	0.02	643	32974		
			10:01:01	24.98	20.26	124.11	0.02	0.02	643	37824		
			10:01:02	24.79	20.26	124.23	0.02	0.02	643	36328		
			10:01:03	24.58	20.26	124.41	0.02	0.02	643	29769		
			10:01:04	24.45	20.26	124.07	0.02	0.02	643	32640		
			10:01:05	24.40	20.26	124.07	0.02	0.02	643	35525		
			10:01:06	24.34	20.26	124.19	0.02	0.02	643	34385		
			10:01:07	24.34	20.26	124.70	0.07	0.07	643	8760		
			10:01:08	24.35	20.26	124.65	0.04	0.04	643	16278		
			10:01:09	24.36	20.26	124.98	0.59	0.15	643	4275		
			10:01:10	24.35	20.25	125.20	1.52	0.99	643	650		
			10:01:11	24.28	20.25	124.23	0.33	0.33	643	1951		
			10:01:12	24.29	20.25	124.07	0.02	0.02	643	41484		
			10:01:13	24.28	20.25	124.05	0.02	0.02	643	32974		
			10:01:14	24.39	20.26	124.01	0.02	0.02	643	35137		
			10:01:15	24.41	20.27	124.01	0.02	0.02	643	40188		
			10:01:16	24.31	20.27	123.96	0.02	0.02	643	35525		
			10:01:17	24.33	20.27	124.01	0.02	0.02	643	34021		
			10:01:18	24.53	20.27	124.03	0.02	0.02	643	35922		
			10:01:19	24.79	20.26	123.99	0.02	0.02	643	36534		
			10:01:20	26.67	20.26	123.96	0.02	0.02	643	36534		
			10:01:21	29.17	20.27	123.96	0.02	0.02	643	35922		
			10:01:22	29.57	20.27	124.05	0.02	0.02	643	34385		

**TABLE D-4**

Profile PRO-02 on September 21, 2022 (0950-1005 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

194	Instantaneous Minimum Dilution in Profile
228	Minimum Average Dilution in Profile
459	Detected Plume Average Dilution
691	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:01:23	29.43	20.27	124.03	0.02	0.02	643	36743		
			10:01:24	29.38	20.27	123.99	0.02	0.02	643	35525		
			10:01:25	29.25	20.27	124.01	0.02	0.02	643	34021		
			10:01:26	29.16	20.27	124.03	0.02	0.02	643	35525		
			10:01:27	28.93	20.27	123.99	0.02	0.02	643	32640		
			10:01:28	28.84	20.27	124.05	0.02	0.02	643	38274		
			10:01:29	28.80	20.27	124.03	0.02	0.02	643	35922		
			10:01:30	28.74	20.27	124.03	0.02	0.02	643	33316		
			10:01:31	28.76	20.27	124.07	0.02	0.02	643	36534		
			10:01:32	28.74	20.27	124.53	0.13	0.13	643	5140		
			10:01:33	29.16	20.27	124.59	0.39	0.39	643	1641		
			10:01:34	29.70	20.26	124.38	0.11	0.11	643	5751		
			10:01:35	30.53	20.26	124.74	1.57	1.03	643	626		Plume at 30-32 ft
			10:01:36	31.35	20.26	124.80	0.83	0.37	643	1736		
			10:01:37	32.27	20.26	125.01	0.34	0.34	643	1915		
			10:01:38	33.18	20.26	125.04	0.32	0.32	643	1996		
			10:01:39	34.02	20.26	125.05	0.96	0.48	643	1339		
			10:01:40	34.77	20.26	124.96	1.01	0.52	643	1229		
			10:01:41	35.29	20.25	124.82	0.57	0.13	643	4989		
			10:01:42	35.63	20.25	124.85	0.62	0.18	643	3624		
			10:01:43	35.80	20.26	125.02	0.93	0.45	643	1416		
			10:01:44	35.88	20.26	125.05	1.51	0.98	643	659		
			10:01:45	35.84	20.26	124.95	1.10	0.61	643	1053		
			10:01:46	35.78	20.26	125.01	0.99	0.51	643	1255	1303	Plume at 35 ft
			10:01:47	35.74	20.26	124.92	0.81	0.35	643	1829		
			10:01:48	35.68	20.26	124.99	0.96	0.48	643	1326		
			10:01:49	35.72	20.26	124.91	0.78	0.33	643	1978		
			10:01:50	35.69	20.26	124.85	1.03	0.54	643	1187		
			10:01:51	35.79	20.26	124.78	1.12	0.63	643	1026		
			10:01:52	35.80	20.26	124.76	0.44	0.01	643	50672		
			10:01:53	35.81	20.26	124.85	0.63	0.19	643	3451		
			10:01:54	35.63	20.26	125.03	0.88	0.41	643	1566		
			10:01:55	35.42	20.25	125.20	0.81	0.35	643	1839		
			10:01:56	35.16	20.25	124.92	0.54	0.11	643	5911		
			10:01:57	34.94	20.24	124.80	0.40	0.40	643	1615		
			10:01:58	34.74	20.24	124.66	0.08	0.08	643	7785		
			10:01:59	34.67	20.24	124.57	0.03	0.03	643	18424		
			10:02:00	34.67	20.25	124.51	0.05	0.05	643	13285		
			10:02:01	34.62	20.25	124.76	0.83	0.37	643	1762		

**TABLE D-4**

Profile PRO-02 on September 21, 2022 (0950-1005 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

194	Instantaneous Minimum Dilution in Profile
228	Minimum Average Dilution in Profile
459	Detected Plume Average Dilution
691	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:02:02	34.55	20.26	125.07	1.00	0.52	643	1241		
			10:02:03	34.48	20.26	125.16	0.91	0.43	643	1480		
			10:02:04	34.24	20.26	125.01	0.64	0.20	643	3223		
			10:02:05	33.95	20.26	124.87	0.47	0.04	643	14466		
			10:02:06	33.62	20.25	124.89	0.80	0.34	643	1910		
			10:02:07	33.30	20.25	124.79	0.65	0.20	643	3150		
			10:02:08	32.94	20.25	124.68	0.49	0.06	643	10188		
			10:02:09	32.52	20.24	124.55	0.17	0.17	643	3762		
			10:02:10	32.06	20.24	124.75	0.51	0.08	643	8013		
			10:02:11	31.65	20.25	124.80	0.65	0.20	643	3179		
			10:02:12	31.26	20.26	124.77	0.64	0.19	643	3331		
			10:02:13	30.96	20.26	124.87	0.85	0.39	643	1658		
			10:02:14	30.80	20.26	124.25	0.16	0.16	643	4127		
			10:02:15	30.73	20.26	124.18	0.02	0.02	643	35922		
			10:02:16	30.69	20.26	124.15	0.02	0.02	643	35525		
			10:02:17	30.64	20.26	124.29	0.02	0.02	643	37824		
			10:02:18	30.60	20.26	124.36	0.04	0.04	643	16320		
			10:02:19	30.52	20.26	124.21	0.02	0.02	643	38274		
			10:02:20	30.45	20.26	124.18	0.02	0.02	643	35525		
			10:02:21	30.34	20.26	124.23	0.02	0.02	643	33665		
			10:02:22	30.06	20.26	124.34	0.02	0.02	643	37168		
			10:02:23	29.68	20.26	124.53	0.02	0.02	643	34021		
			10:02:24	29.18	20.26	124.13	0.03	0.03	643	19907		
			10:02:25	28.57	20.26	124.07	0.02	0.02	643	38735		
			10:02:26	28.22	20.26	124.23	0.02	0.02	643	37824		
			10:02:27	28.08	20.26	124.47	0.02	0.02	643	33316		
			10:02:28	28.11	20.26	125.16	0.25	0.25	643	2529		
			10:02:29	27.98	20.26	125.23	0.52	0.09	643	7023		
			10:02:30	27.93	20.26	125.76	0.93	0.45	643	1423		
			10:02:31	27.86	20.26	125.35	0.89	0.42	643	1519		
			10:02:32	27.73	20.26	125.52	1.14	0.64	643	1003		
			10:02:33	27.64	20.26	125.73	1.51	0.98	643	658		
			10:02:34	27.57	20.26	125.41	1.62	1.07	643	601		
			10:02:35	27.56	20.26	124.87	1.45	0.92	643	697		
			10:02:36	27.55	20.26	124.58	1.05	0.57	643	1137		
			10:02:37	27.49	20.26	125.32	1.78	1.21	643	529		
			10:02:38	27.38	20.26	125.76	1.71	1.15	643	558		
			10:02:39	27.43	20.26	125.91	1.93	1.35	643	475	443	Plume at 27 ft
			10:02:40	27.48	20.26	125.83	2.78	2.12	643	304		

**TABLE D-4**

Profile PRO-02 on September 21, 2022 (0950-1005 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

194	Instantaneous Minimum Dilution in Profile
228	Minimum Average Dilution in Profile
459	Detected Plume Average Dilution
691	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:02:41	27.44	20.26	125.71	2.69	2.03	643	316		
			10:02:42	27.46	20.26	125.04	1.93	1.36	643	474		
			10:02:43	27.49	20.26	124.70	1.23	0.72	643	889		
			10:02:44	27.54	20.26	124.94	1.66	1.11	643	581		
			10:02:45	27.54	20.26	124.15	1.00	0.52	643	1243		
			10:02:46	27.56	20.26	124.05	0.12	0.12	643	5310		
			10:02:47	27.56	20.26	124.01	0.02	0.02	643	36328		
			10:02:48	27.55	20.26	124.25	0.02	0.02	643	35137		
			10:02:49	27.50	20.26	124.05	0.02	0.02	643	38735		
			10:02:50	27.43	20.26	124.37	0.02	0.02	643	33316		
			10:02:51	27.39	20.26	124.80	0.10	0.10	643	6608		
			10:02:52	27.30	20.26	125.00	0.09	0.09	643	7290		
			10:02:53	27.40	20.26	125.01	0.40	0.40	643	1610		
			10:02:54	27.82	20.26	125.26	1.03	0.54	643	1180		
			10:02:55	28.52	20.26	125.19	2.11	1.51	643	425		
			10:02:56	29.43	20.26	124.53	0.79	0.33	643	1923		
			10:02:57	30.33	20.26	124.82	0.96	0.49	643	1322		
			10:02:58	31.25	20.26	124.17	0.13	0.13	643	4864		
			10:02:59	32.07	20.26	124.15	0.02	0.02	643	33316		
			10:03:00	32.78	20.26	124.31	0.02	0.02	643	34385		
			10:03:01	33.41	20.26	124.78	0.44	0.01	643	49619		
			10:03:02	34.00	20.26	124.68	0.53	0.09	643	6862		
			10:03:03	34.43	20.26	125.00	1.03	0.55	643	1175		
			10:03:04	34.94	20.26	125.37	2.08	1.49	643	431		
			10:03:05	35.29	20.26	125.20	1.61	1.06	643	605		
			10:03:06	35.57	20.26	125.35	1.90	1.33	643	485	574	Plume at 35 ft
			10:03:07	35.75	20.26	125.47	1.93	1.35	643	477		
			10:03:08	35.85	20.26	125.49	1.44	0.91	643	703		
			10:03:09	35.90	20.26	125.39	1.54	1.01	643	638		
			10:03:10	35.82	20.26	125.35	1.47	0.94	643	681		
			10:03:11	35.84	20.26	125.16	1.19	0.69	643	927		
			10:03:12	35.77	20.26	125.24	1.66	1.11	643	580		
			10:03:13	35.78	20.26	125.35	1.92	1.35	643	478		
			10:03:14	35.76	20.26	125.34	1.97	1.39	643	462		
			10:03:15	35.78	20.26	125.35	1.76	1.20	643	537		
			10:03:16	35.81	20.26	125.41	2.18	1.58	643	407	535	Plume at 35 ft
			10:03:17	35.77	20.26	125.45	1.88	1.31	643	491		
			10:03:18	35.82	20.26	125.52	2.11	1.52	643	424		
			10:03:19	35.81	20.26	125.32	1.71	1.15	643	558		

**TABLE D-4**

Profile PRO-02 on September 21, 2022 (0950-1005 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

194	Instantaneous Minimum Dilution in Profile
228	Minimum Average Dilution in Profile
459	Detected Plume Average Dilution
691	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:03:20	35.82	20.26	125.28	1.43	0.90	643	713		Plume at 35 ft
			10:03:21	35.71	20.26	125.20	1.44	0.91	643	707		
			10:03:22	35.62	20.26	125.13	1.67	1.12	643	574		
			10:03:23	35.60	20.26	125.22	2.07	1.48	643	434		
			10:03:24	35.46	20.26	125.37	1.63	1.09	643	591		
			10:03:25	35.36	20.26	125.37	0.97	0.49	643	1305		
			10:03:26	35.17	20.26	125.35	1.75	1.20	643	538		
			10:03:27	34.99	20.26	125.37	1.56	1.02	643	629		
			10:03:28	34.79	20.26	125.45	2.07	1.48	643	435		
			10:03:29	34.49	20.26	125.35	2.01	1.43	643	451	537	
			10:03:30	34.27	20.26	125.30	2.01	1.42	643	452		
			10:03:31	34.04	20.26	125.11	1.43	0.90	643	714		
			10:03:32	33.79	20.26	124.89	1.14	0.64	643	1000		
			10:03:33	33.70	20.26	124.56	0.42	0.00	643	759652		
			10:03:34	33.60	20.27	124.22	0.02	0.02	643	34757		
			10:03:35	33.47	20.27	124.22	0.02	0.02	643	28578		
			10:03:36	33.27	20.27	124.20	0.02	0.02	643	38735		
			10:03:37	33.00	20.27	124.13	0.02	0.02	643	35137		
			10:03:38	32.81	20.27	124.01	0.02	0.02	643	34757		
			10:03:39	32.58	20.26	124.03	0.02	0.02	643	36328		
			10:03:40	32.46	20.26	124.01	0.02	0.02	643	36124		
			10:03:41	32.42	20.27	124.03	0.02	0.02	643	35525		
			10:03:42	32.33	20.27	124.01	0.11	0.11	643	5782		
			10:03:43	32.19	20.27	124.01	0.02	0.02	643	36743		
			10:03:44	32.03	20.27	123.99	0.02	0.02	643	36743		
			10:03:45	31.82	20.26	124.03	0.02	0.02	643	34385		
			10:03:46	31.47	20.26	124.01	0.02	0.02	643	37602		
			10:03:47	31.14	20.27	124.05	0.02	0.02	643	35525		
			10:03:48	30.85	20.27	123.99	0.02	0.02	643	34757		
			10:03:49	30.41	20.27	123.92	0.02	0.02	643	35137		
			10:03:50	30.02	20.27	123.96	0.02	0.02	643	33316		
			10:03:51	29.68	20.27	123.99	0.02	0.02	643	33316		
			10:03:52	29.39	20.28	123.99	0.02	0.02	643	33316		
			10:03:53	29.11	20.28	123.97	0.02	0.02	643	37602		
			10:03:54	29.04	20.27	123.99	0.02	0.02	643	33144		
			10:03:55	29.05	20.27	124.27	0.03	0.03	643	19604		
			10:03:56	29.13	20.28	124.70	0.04	0.04	643	18011		
			10:03:57	29.10	20.28	124.77	0.23	0.23	643	2851		
			10:03:58	29.15	20.28	124.97	0.92	0.45	643	1445		

**TABLE D-4**

Profile PRO-02 on September 21, 2022 (0950-1005 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

194	Instantaneous Minimum Dilution in Profile
228	Minimum Average Dilution in Profile
459	Detected Plume Average Dilution
691	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:03:59	29.10	20.27	124.31	0.13	0.13	643	4871		
			10:04:00	29.03	20.27	124.01	0.03	0.03	643	19846		
			10:04:01	28.86	20.26	124.03	0.07	0.07	643	8596		
			10:04:02	28.81	20.26	124.06	0.02	0.02	643	34757		
			10:04:03	28.65	20.26	124.07	0.02	0.02	643	36328		
			10:04:04	28.42	20.26	124.05	0.02	0.02	643	33665		
			10:04:05	28.00	20.26	124.07	0.02	0.02	643	36328		
			10:04:06	27.64	20.25	124.09	0.02	0.02	643	35525		
			10:04:07	27.24	20.25	124.15	0.02	0.02	643	34757		
			10:04:08	26.96	20.25	124.11	0.02	0.02	643	36124		
			10:04:09	26.69	20.25	124.11	0.02	0.02	643	35722		
			10:04:10	26.33	20.25	124.07	0.02	0.02	643	37168		
			10:04:11	26.20	20.25	124.25	0.02	0.02	643	38274		
			10:04:12	26.07	20.25	124.25	0.02	0.02	643	34385		
			10:04:13	27.19	20.25	124.51	0.16	0.16	643	3957		
			10:04:14	28.23	20.25	124.46	0.02	0.02	643	32312		
			10:04:15	28.85	20.25	124.84	0.35	0.35	643	1840		
			10:04:16	28.86	20.25	125.30	0.80	0.34	643	1910		
			10:04:17	28.79	20.25	124.32	0.10	0.10	643	6733		
			10:04:18	28.80	20.25	124.11	0.06	0.06	643	11010		
			10:04:19	28.88	20.24	124.13	0.02	0.02	643	34385		
			10:04:20	29.10	20.25	124.21	0.02	0.02	643	36534		
			10:04:21	29.31	20.25	124.45	0.02	0.02	643	36743		
			10:04:22	29.54	20.25	124.43	0.02	0.02	643	31832		
			10:04:23	29.67	20.25	124.94	0.68	0.23	643	2770		
			10:04:24	29.98	20.25	125.75	1.67	1.12	643	574		
			10:04:25	30.52	20.26	125.93	2.59	1.95	643	331		
			10:04:26	31.19	20.26	126.23	3.93	3.15	643	204		
			10:04:27	31.99	20.26	125.87	2.26	1.65	643	391		
			10:04:28	32.90	20.25	125.01	1.12	0.63	643	1028		
			10:04:29	33.80	20.25	125.32	1.24	0.73	643	875		
			10:04:30	34.76	20.25	125.24	1.55	1.01	643	635		
			10:04:31	35.64	20.25	125.22	1.65	1.11	643	582		
			10:04:32	36.68	20.25	125.32	1.72	1.17	643	551		
			10:04:33	37.49	20.26	125.43	1.79	1.23	643	524		
			10:04:34	38.37	20.26	125.49	2.08	1.49	643	432		
			10:04:35	39.06	20.26	125.56	2.05	1.47	643	439		
			10:04:36	39.72	20.26	125.57	2.26	1.65	643	391		
			10:04:37	40.29	20.26	125.57	2.29	1.68	643	384		

**TABLE D-4**

Profile PRO-02 on September 21, 2022 (0950-1005 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

194	Instantaneous Minimum Dilution in Profile
228	Minimum Average Dilution in Profile
459	Detected Plume Average Dilution
691	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:04:38	40.64	20.26	125.56	2.33	1.71	643	375		
			10:04:39	41.02	20.26	125.54	2.18	1.58	643	408		
			10:04:40	41.12	20.26	125.52	1.90	1.33	643	484		
			10:04:41	41.17	20.26	125.63	1.92	1.35	643	477		
			10:04:42	41.20	20.26	125.62	1.99	1.41	643	457		
			10:04:43	41.13	20.26	125.56	2.00	1.41	643	455		
			10:04:44	41.14	20.26	125.61	2.15	1.55	643	415		
			10:04:45	41.11	20.26	125.68	2.24	1.63	643	394		
			10:04:46	41.05	20.26	125.64	2.24	1.63	643	395		
			10:04:47	41.09	20.26	125.61	2.23	1.63	643	395		
			10:04:48	41.05	20.26	125.74	2.11	1.51	643	425		
			10:04:49	41.11	20.26	125.78	2.22	1.62	643	398		
			10:04:50	41.10	20.26	125.80	2.42	1.79	643	360		
			10:04:51	41.08	20.26	125.78	2.50	1.87	643	344		
			10:04:52	40.99	20.26	125.76	2.11	1.52	643	423		
			10:04:53	40.92	20.26	125.78	2.19	1.58	643	406		
			10:04:54	40.71	20.26	125.76	2.45	1.82	643	354		
			10:04:55	40.58	20.26	125.76	2.66	2.01	643	320		
			10:04:56	40.39	20.26	125.72	2.29	1.68	643	384	411	Plume at 38-40 ft
			10:04:57	40.17	20.26	125.74	2.33	1.72	643	375		
			10:04:58	39.97	20.26	125.74	2.56	1.92	643	335		
			10:04:59	39.74	20.26	125.66	2.22	1.61	643	399		
			10:05:00	39.51	20.26	125.61	2.51	1.88	643	342		
			10:05:01	39.26	20.26	125.61	2.20	1.60	643	402		
			10:05:02	38.98	20.26	125.45	2.16	1.56	643	413		
			10:05:03	38.76	20.26	125.55	1.91	1.34	643	481		
			10:05:04	38.51	20.26	125.60	2.24	1.63	643	394		
			10:05:05	38.39	20.25	125.53	1.89	1.31	643	489		
			10:05:06	38.12	20.25	125.47	2.02	1.44	643	448		
			10:05:07	38.02	20.25	125.45	2.00	1.42	643	454		
			10:05:08	37.82	20.26	125.38	2.21	1.60	643	402		
			10:05:09	37.72	20.26	125.30	2.04	1.45	643	442		
			10:05:10	37.70	20.26	125.47	1.87	1.30	643	496		
			10:05:11	37.57	20.26	125.28	1.50	0.97	643	665		
			10:05:12	37.49	20.26	125.09	1.36	0.84	643	765		
			10:05:13	37.45	20.25	124.88	0.36	0.36	643	1795		
			10:05:14	37.32	20.25	124.39	0.02	0.02	643	36328		
			10:05:15	37.24	20.25	124.11	0.02	0.02	643	32974		
			10:05:16	37.18	20.26	124.07	0.02	0.02	643	37824		



**TABLE D-4**

Profile PRO-02 on September 21, 2022 (0950-1005 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

194	Instantaneous Minimum Dilution in Profile
228	Minimum Average Dilution in Profile
459	Detected Plume Average Dilution
691	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:05:17	37.17	20.25	124.21	0.08	0.08	643	7701		
			10:05:18	37.07	20.25	124.42	0.02	0.02	643	37824		
			10:05:19	36.91	20.25	124.46	0.08	0.08	643	7948		
			10:05:20	36.72	20.26	124.09	0.02	0.02	643	33665		
			10:05:21	36.46	20.26	124.09	0.02	0.02	643	35137		
			10:05:22	36.20	20.25	124.13	0.02	0.02	643	34385		
			10:05:23	36.05	20.24	124.27	0.05	0.05	643	11996		
			10:05:24	36.08	20.24	124.15	0.02	0.02	643	34757		
			10:05:25	36.03	20.24	124.15	0.02	0.02	643	33665		
			10:05:26	36.05	20.25	124.15	0.02	0.02	643	33665		
			10:05:27	36.01	20.25	124.21	0.02	0.02	643	36954		
			10:05:28	35.91	20.24	124.65	0.04	0.04	643	17193		
			10:05:29	35.68	20.24	124.33	0.15	0.15	643	4255		
			10:05:30	35.40	20.24	124.20	0.09	0.09	643	7249		
			10:05:31	35.13	20.24	124.21	0.02	0.02	643	34385		
			10:05:32	34.80	20.24	124.26	0.02	0.02	643	37824		
			10:05:33	34.45	20.24	124.29	0.02	0.02	643	36328		
			10:05:34	34.18	20.24	124.32	0.02	0.02	643	37168		
			10:05:35	33.87	20.24	124.25	0.02	0.02	643	34385		
			10:05:36	33.58	20.24	124.18	0.02	0.02	643	36534		
			10:05:37	33.32	20.24	124.24	0.02	0.02	643	35137		
			10:05:38	33.03	20.24	124.13	0.02	0.02	643	36534		
			10:05:39	32.81	20.24	124.15	0.02	0.02	643	36954		
			10:05:40	32.61	20.24	124.13	0.02	0.02	643	36534		
			10:05:41	32.39	20.24	124.18	0.02	0.02	643	34757		
			10:05:42	32.22	20.24	124.18	0.02	0.02	643	36328		
			10:05:43	32.08	20.24	124.15	0.02	0.02	643	34385		
			10:05:44	32.16	20.24	124.26	0.02	0.02	643	33665		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-3 (Mixing Zone Boundary 242 ft North of Diffuser) mid-point of diffuser	48 ft	0.51 m/sec 349 deg. (mag.) Ebb tide	10:12:59	2.26	19.93	121.83	1.04	0.55	760	1371	2446	Plume traces near surface at MZB
			10:13:00	2.35	19.87	121.95	0.97	0.49	760	1552		
			10:13:01	2.31	20.01	121.95	0.63	0.19	760	3987		
			10:13:02	2.37	20.09	122.39	0.73	0.28	760	2747		
			10:13:03	2.40	20.13	122.45	0.35	0.35	760	2147		
			10:13:04	2.36	20.14	122.48	0.60	0.16	760	4661		
			10:13:05	2.48	20.14	121.77	1.93	1.35	760	562		
			10:13:06	2.40	20.15	122.62	0.97	0.49	760	1545		
			10:13:07	2.34	20.14	122.36	1.08	0.59	760	1293		
			10:13:08	2.43	20.15	121.92	0.67	0.22	760	3414		
			10:13:09	2.41	20.06	122.34	0.82	0.35	760	2146		
			10:13:10	2.39	20.11	121.93	0.73	0.27	760	2781		
			10:13:11	2.39	20.15	122.34	0.73	0.28	760	2762		
			10:13:12	2.37	20.16	122.53	0.26	0.26	760	2911		
			10:13:13	2.48	20.15	121.89	0.31	0.31	760	2423		
			10:13:14	2.46	19.87	121.20	0.74	0.28	760	2679		
			10:13:15	2.46	19.55	121.51	0.42	0.42	760	1831		
			10:13:16	2.44	19.51	121.45	0.24	0.24	760	3218		
			10:13:17	2.45	19.49	121.31	0.57	0.13	760	5769		
			10:13:18	2.49	19.42	121.12	0.37	0.37	760	2066		
			10:13:19	2.49	19.28	120.99	0.27	0.27	760	2810		
			10:13:20	2.48	19.19	120.86	0.37	0.37	760	2062		
			10:13:21	2.45	19.16	120.81	0.46	0.03	760	23244		
			10:13:22	2.46	19.11	120.78	0.27	0.27	760	2788		
			10:13:23	2.49	19.08	120.88	0.45	0.02	760	31093		
			10:13:24	2.46	19.12	120.96	0.27	0.27	760	2832		
			10:13:25	2.48	19.19	121.07	0.05	0.05	760	16486		
			10:13:26	2.46	19.25	121.22	0.06	0.06	760	13451		
			10:13:27	2.51	19.30	121.37	0.03	0.03	760	24918		
			10:13:28	2.47	19.36	121.48	0.02	0.02	760	41081		
			10:13:29	2.49	19.42	121.62	0.02	0.02	760	38000		
			10:13:30	2.47	19.48	121.79	0.02	0.02	760	41989		
			10:13:31	2.48	19.53	121.81	0.02	0.02	760	45238		
			10:13:32	2.53	19.56	121.91	0.02	0.02	760	34389		
			10:13:33	2.61	19.58	122.12	0.12	0.12	760	6435		
			10:13:34	2.57	19.64	122.19	0.28	0.28	760	2723		
10:13:35	2.53	19.70	122.31	0.08	0.08	760	9961					
10:13:36	2.59	19.73	122.39	0.05	0.05	760	15933					

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

102	Instantaneous Minimum Dilution in Profile
200	Minimum Average Dilution in Profile
380	Detected Plume Average Dilution
599	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:13:37	2.61	19.78	122.50	0.10	0.10	760	7631		
			10:13:38	2.54	19.80	122.54	0.05	0.05	760	16740		
			10:13:39	2.54	19.82	122.65	0.02	0.02	760	40212		
			10:13:40	2.57	19.84	122.69	0.02	0.02	760	41989		
			10:13:41	2.55	19.96	123.56	0.02	0.02	760	42222		
			10:13:42	2.53	20.22	123.94	0.02	0.02	760	41081		
			10:13:43	2.56	20.25	123.96	0.02	0.02	760	39378		
			10:13:44	2.56	20.25	124.03	0.02	0.02	760	38776		
			10:13:45	2.55	20.25	124.05	0.06	0.06	760	13499		
			10:13:46	2.52	20.25	123.98	0.08	0.08	760	8952		
			10:13:47	2.52	20.25	124.03	0.02	0.02	760	41081		
			10:13:48	2.58	20.25	124.01	0.02	0.02	760	41530		
			10:13:49	2.51	20.25	124.03	0.02	0.02	760	39378		
			10:13:50	2.50	20.25	124.03	0.03	0.03	760	25083		
			10:13:51	2.39	20.25	124.01	0.02	0.02	760	41530		
			10:13:52	2.47	20.25	123.96	0.06	0.06	760	12102		
			10:13:53	2.43	20.26	123.98	0.03	0.03	760	23030		
			10:13:54	2.43	20.26	124.01	0.02	0.02	760	39791		
			10:13:55	2.41	20.26	123.98	0.03	0.03	760	25503		
			10:13:56	2.39	20.26	124.03	0.02	0.02	760	40212		
			10:13:57	2.37	20.26	123.96	0.02	0.02	760	41989		
			10:13:58	2.40	20.26	123.98	0.02	0.02	760	41989		
			10:13:59	2.45	20.26	123.98	0.02	0.02	760	38000		
			10:14:00	2.46	20.26	124.03	0.02	0.02	760	41989		
			10:14:01	2.45	20.26	123.96	0.02	0.02	760	40642		
			10:14:02	2.41	20.26	123.98	0.02	0.02	760	44444		
			10:14:03	2.40	20.26	123.95	0.02	0.02	760	38000		
			10:14:04	2.45	20.26	123.98	0.02	0.02	760	40642		
			10:14:05	2.43	20.26	124.01	0.02	0.02	760	40212		
			10:14:06	2.41	20.26	124.05	0.02	0.02	760	40212		
			10:14:07	2.44	20.26	124.03	0.03	0.03	760	22485		
			10:14:08	2.42	20.26	124.03	0.29	0.29	760	2666		
			10:14:09	2.44	20.26	123.98	0.02	0.02	760	38974		
			10:14:10	2.42	20.26	124.01	0.02	0.02	760	39378		
			10:14:11	2.46	20.26	124.01	0.02	0.02	760	44706		
			10:14:12	2.46	20.26	123.94	0.02	0.02	760	41989		
			10:14:13	2.43	20.26	124.03	0.02	0.02	760	43182		
			10:14:14	2.43	20.26	124.01	0.02	0.02	760	41989		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

102	Instantaneous Minimum Dilution in Profile
200	Minimum Average Dilution in Profile
380	Detected Plume Average Dilution
599	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:14:15	2.44	20.26	123.98	0.02	0.02	760	39791		
			10:14:16	2.40	20.26	124.01	0.02	0.02	760	42938		
			10:14:17	2.40	20.26	123.96	0.02	0.02	760	39378		
			10:14:18	2.34	20.27	123.94	0.02	0.02	760	41081		
			10:14:19	2.39	20.27	123.92	0.02	0.02	760	43931		
			10:14:20	2.31	20.26	123.92	0.02	0.02	760	38000		
			10:14:21	2.38	20.27	123.98	0.02	0.02	760	39378		
			10:14:22	2.39	20.27	123.98	0.02	0.02	760	44444		
			10:14:23	2.42	20.27	123.95	0.02	0.02	760	42938		
			10:14:24	2.44	20.27	123.96	0.02	0.02	760	41530		
			10:14:25	2.42	20.27	124.01	0.02	0.02	760	41081		
			10:14:26	2.42	20.27	123.96	0.02	0.02	760	39378		
			10:14:27	2.39	20.27	123.98	0.02	0.02	760	38000		
			10:14:28	2.41	20.27	124.01	0.02	0.02	760	37255		
			10:14:29	2.36	20.27	123.96	0.02	0.02	760	40642		
			10:14:30	2.39	20.27	124.01	0.02	0.02	760	42458		
			10:14:31	2.40	20.26	123.96	0.02	0.02	760	41530		
			10:14:32	2.44	20.26	124.01	0.02	0.02	760	42458		
			10:14:33	3.01	20.26	124.01	0.02	0.02	760	43182		
			10:14:34	3.54	20.26	123.98	0.02	0.02	760	42458		
			10:14:35	3.53	20.26	124.03	0.02	0.02	760	41530		
			10:14:36	3.46	20.26	124.03	0.02	0.02	760	42938		
			10:14:37	3.46	20.26	123.98	0.02	0.02	760	41081		
			10:14:38	4.01	20.26	123.96	0.02	0.02	760	41081		
			10:14:39	6.59	20.26	124.05	0.02	0.02	760	39378		
			10:14:40	7.66	20.25	124.03	0.02	0.02	760	41989		
			10:14:41	7.81	20.25	124.07	0.02	0.02	760	42458		
			10:14:42	7.86	20.25	124.06	0.02	0.02	760	39791		
			10:14:43	7.88	20.26	124.03	0.02	0.02	760	40212		
			10:14:44	7.93	20.25	124.05	0.02	0.02	760	40212		
			10:14:45	7.89	20.25	124.01	0.02	0.02	760	41530		
			10:14:46	7.87	20.25	124.05	0.02	0.02	760	41081		
			10:14:47	7.96	20.25	124.07	0.02	0.02	760	43182		
			10:14:48	7.90	20.25	124.05	0.02	0.02	760	36538		
			10:14:49	7.97	20.25	124.05	0.02	0.02	760	42458		
			10:14:50	7.96	20.25	124.03	0.02	0.02	760	40642		
			10:14:51	7.97	20.25	124.03	0.02	0.02	760	41530		
			10:14:52	8.00	20.25	124.03	0.02	0.02	760	43429		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

102	Instantaneous Minimum Dilution in Profile
200	Minimum Average Dilution in Profile
380	Detected Plume Average Dilution
599	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:14:53	7.96	20.25	124.03	0.02	0.02	760	41530		
			10:14:54	7.99	20.25	124.03	0.02	0.02	760	39175		
			10:14:55	7.99	20.25	124.03	0.02	0.02	760	40642		
			10:14:56	7.97	20.25	124.05	0.02	0.02	760	40212		
			10:14:57	8.05	20.25	124.09	0.02	0.02	760	39175		
			10:14:58	8.07	20.25	124.05	0.02	0.02	760	45238		
			10:14:59	8.05	20.25	124.05	0.02	0.02	760	40642		
			10:15:00	8.05	20.25	124.05	0.02	0.02	760	43931		
			10:15:01	8.06	20.25	124.07	0.02	0.02	760	43678		
			10:15:02	7.97	20.25	124.01	0.02	0.02	760	40212		
			10:15:03	7.97	20.26	124.03	0.02	0.02	760	45238		
			10:15:04	7.98	20.26	123.98	0.02	0.02	760	43429		
			10:15:05	7.98	20.26	124.01	0.02	0.02	760	43429		
			10:15:06	7.95	20.26	124.01	0.02	0.02	760	38384		
			10:15:07	7.98	20.26	124.01	0.02	0.02	760	43182		
			10:15:08	7.95	20.26	124.01	0.02	0.02	760	41989		
			10:15:09	7.97	20.26	124.01	0.02	0.02	760	39791		
			10:15:10	7.91	20.26	124.03	0.02	0.02	760	41989		
			10:15:11	7.94	20.26	124.01	0.02	0.02	760	42458		
			10:15:12	7.94	20.26	124.01	0.02	0.02	760	39378		
			10:15:13	7.85	20.26	124.05	0.02	0.02	760	39378		
			10:15:14	7.96	20.26	124.01	0.02	0.02	760	44706		
			10:15:15	8.00	20.26	123.98	0.02	0.02	760	41530		
			10:15:16	9.41	20.26	124.01	0.02	0.02	760	39378		
			10:15:17	12.24	20.26	123.99	0.02	0.02	760	41081		
			10:15:18	12.81	20.26	123.99	0.02	0.02	760	44444		
			10:15:19	12.84	20.26	124.05	0.02	0.02	760	40642		
			10:15:20	12.86	20.26	124.05	0.02	0.02	760	41989		
			10:15:21	12.90	20.26	124.03	0.02	0.02	760	41530		
			10:15:22	12.89	20.26	124.01	0.02	0.02	760	41081		
			10:15:23	12.97	20.26	124.01	0.02	0.02	760	38974		
			10:15:24	12.96	20.26	124.01	0.02	0.02	760	43182		
			10:15:25	13.02	20.26	123.96	0.02	0.02	760	41081		
			10:15:26	12.93	20.26	123.99	0.02	0.02	760	40642		
			10:15:27	12.97	20.26	124.01	0.02	0.02	760	46341		
			10:15:28	12.99	20.26	124.01	0.02	0.02	760	41530		
			10:15:29	12.98	20.26	124.07	0.02	0.02	760	44706		
			10:15:30	12.99	20.26	124.05	0.02	0.02	760	43678		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments	
										Instant. Minimum Dilution	Minimum Plume Avg. Dilution		
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	102	200	380	599
			10:15:31	13.03	20.26	124.01	0.02	0.02	760	42458			
			10:15:32	13.05	20.26	124.03	0.02	0.02	760	41081			
			10:15:33	13.04	20.26	124.05	0.02	0.02	760	41989			
			10:15:34	13.05	20.26	124.13	0.02	0.02	760	44706			
			10:15:35	12.96	20.25	124.11	0.02	0.02	760	39378			
			10:15:36	13.00	20.25	124.18	0.02	0.02	760	43182			
			10:15:37	12.92	20.25	124.27	0.02	0.02	760	45783			
			10:15:38	12.95	20.26	124.31	0.02	0.02	760	38776			
			10:15:39	12.93	20.26	124.22	0.05	0.05	760	14022			
			10:15:40	12.98	20.26	124.37	0.04	0.04	760	21408			
			10:15:41	12.96	20.26	124.14	0.02	0.02	760	40642			
			10:15:42	12.99	20.26	124.07	0.02	0.02	760	38974			
			10:15:43	12.93	20.26	124.05	0.02	0.02	760	40642			
			10:15:44	12.92	20.26	124.03	0.02	0.02	760	44706			
			10:15:45	12.89	20.26	123.99	0.02	0.02	760	44706			
			10:15:46	12.83	20.26	124.01	0.02	0.02	760	39791			
			10:15:47	12.88	20.26	124.01	0.02	0.02	760	36538			
			10:15:48	12.81	20.26	124.11	0.02	0.02	760	42458			
			10:15:49	12.83	20.26	124.21	0.02	0.02	760	42938			
			10:15:50	12.87	20.26	124.06	0.02	0.02	760	42458			
			10:15:51	12.86	20.26	123.99	0.02	0.02	760	39378			
			10:15:52	12.87	20.26	123.96	0.02	0.02	760	43678			
			10:15:53	12.86	20.26	124.07	0.02	0.02	760	42938			
			10:15:54	12.94	20.25	124.07	0.02	0.02	760	44706			
			10:15:55	12.92	20.25	124.05	0.02	0.02	760	40212			
			10:15:56	12.92	20.25	124.03	0.02	0.02	760	45783			
			10:15:57	12.88	20.25	124.27	0.05	0.05	760	16136			
			10:15:58	12.85	20.25	124.51	0.11	0.11	760	6859			
			10:15:59	12.97	20.25	124.94	0.87	0.40	760	1897			
			10:16:00	12.98	20.26	124.77	0.02	0.02	760	40642			
			10:16:01	12.99	20.26	124.46	0.02	0.02	760	40212			
			10:16:02	12.99	20.26	124.49	0.74	0.28	760	2687			
			10:16:03	12.98	20.25	124.25	0.10	0.10	760	7436			
			10:16:04	12.99	20.25	124.37	0.02	0.02	760	41081			
			10:16:05	12.97	20.25	124.68	0.05	0.05	760	14286			
			10:16:06	13.02	20.25	124.33	0.03	0.03	760	30159			
			10:16:07	13.01	20.24	124.09	0.02	0.02	760	39378			
			10:16:08	13.53	20.25	124.09	0.02	0.02	760	41989			

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
										Instant. Minimum Dilution	Minimum Plume Avg. Dilution	
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	102	200	
			10:16:09	13.96	20.25	124.07	0.02	0.02	760	40642		Plume traces at 17 ft
			10:16:10	15.34	20.25	124.06	0.02	0.02	760	42697		
			10:16:11	17.91	20.25	124.07	0.02	0.02	760	42458		
			10:16:12	17.73	20.25	124.33	0.02	0.02	760	37255		
			10:16:13	17.74	20.25	125.11	1.38	0.86	760	880		
			10:16:14	17.73	20.25	125.98	3.00	2.31	760	329		
			10:16:15	17.77	20.25	125.60	3.03	2.34	760	325	672	
			10:16:16	17.69	20.26	124.88	2.73	2.07	760	367		
			10:16:17	17.71	20.26	124.59	1.00	0.52	760	1458		
			10:16:18	17.74	20.26	124.51	0.19	0.19	760	4021		
			10:16:19	17.66	20.26	124.40	0.11	0.11	760	7011		
			10:16:20	17.67	20.26	124.53	0.02	0.02	760	32900		
			10:16:21	17.60	20.27	124.05	0.02	0.02	760	41989		
			10:16:22	17.77	20.27	124.15	0.02	0.02	760	41530		
			10:16:23	17.73	20.26	124.55	0.24	0.24	760	3188		
			10:16:24	17.73	20.26	124.47	0.03	0.03	760	30159		
			10:16:25	17.76	20.26	124.41	0.05	0.05	760	15933		
			10:16:26	17.76	20.26	125.08	1.33	0.81	760	935		
			10:16:27	17.76	20.25	125.20	1.94	1.36	760	557	629	
			10:16:28	17.75	20.25	125.08	2.57	1.93	760	394		
			10:16:29	17.74	20.25	124.34	0.59	0.15	760	4964		
			10:16:30	17.65	20.25	124.09	0.02	0.02	760	43931		
			10:16:31	17.64	20.25	124.13	0.02	0.02	760	38974		
			10:16:32	17.53	20.25	124.43	0.15	0.15	760	5195		
			10:16:33	17.54	20.25	124.92	1.73	1.18	760	646		
			10:16:34	17.55	20.25	125.00	2.74	2.08	760	366	1104	
			10:16:35	17.54	20.26	124.61	0.33	0.33	760	2302		
			10:16:36	17.55	20.26	124.21	0.02	0.02	760	41989		
			10:16:37	17.53	20.27	123.96	0.02	0.02	760	43429		
			10:16:38	17.54	20.27	123.99	0.02	0.02	760	41530		
			10:16:39	17.54	20.27	124.03	0.02	0.02	760	42458		
			10:16:40	17.55	20.27	124.11	0.02	0.02	760	40212		
			10:16:41	17.56	20.27	124.07	0.02	0.02	760	39175		
			10:16:42	17.53	20.27	124.09	0.02	0.02	760	42938		
			10:16:43	17.52	20.27	124.40	0.02	0.02	760	36893		
			10:16:44	17.50	20.27	124.13	0.16	0.16	760	4648		
			10:16:45	17.54	20.27	124.17	0.02	0.02	760	38776		
			10:16:46	17.51	20.27	124.59	0.04	0.04	760	20430		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
										Instant. Minimum Dilution	Minimum Plume Avg. Dilution	
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	102	200	
			10:16:47	17.51	20.27	124.63	0.07	0.07	760	10541		
			10:16:48	17.53	20.27	124.15	0.02	0.02	760	42938		
			10:16:49	17.52	20.27	124.34	0.16	0.16	760	4838		
			10:16:50	17.50	20.27	124.13	0.11	0.11	760	6847		
			10:16:51	17.46	20.27	124.22	0.02	0.02	760	42458		
			10:16:52	17.53	20.26	124.29	0.04	0.04	760	21289		
			10:16:53	17.55	20.26	124.75	0.65	0.20	760	3708		
			10:16:54	17.56	20.27	124.94	1.38	0.86	760	882		
			10:16:55	17.51	20.27	124.43	0.07	0.07	760	11127		
			10:16:56	17.53	20.26	124.22	0.02	0.02	760	40642		
			10:16:57	17.52	20.26	124.27	0.02	0.02	760	41989		
			10:16:58	17.45	20.27	124.30	0.02	0.02	760	43429		
			10:16:59	17.48	20.27	124.29	0.02	0.02	760	44444		
			10:17:00	17.46	20.27	124.46	0.02	0.02	760	44186		
			10:17:01	17.45	20.27	124.27	0.29	0.29	760	2630		
			10:17:02	17.43	20.27	124.30	0.02	0.02	760	43678		
			10:17:03	17.45	20.27	124.70	0.69	0.24	760	3177		
			10:17:04	17.47	20.27	124.17	0.02	0.02	760	41989		
			10:17:05	17.45	20.27	124.05	0.02	0.02	760	38191		
			10:17:06	17.48	20.27	124.56	0.21	0.21	760	3573		
			10:17:07	17.48	20.27	124.87	0.28	0.28	760	2698		
			10:17:08	17.54	20.27	124.56	0.24	0.24	760	3203		
			10:17:09	17.52	20.27	124.27	0.02	0.02	760	43429		
			10:17:10	17.56	20.27	124.09	0.02	0.02	760	42222		
			10:17:11	17.56	20.27	124.07	0.02	0.02	760	39791		
			10:17:12	17.63	20.27	124.37	0.06	0.06	760	12947		
			10:17:13	17.63	20.27	125.58	2.17	1.57	760	486		
			10:17:14	17.63	20.27	125.24	2.02	1.43	760	530		Plume traces at 17 ft
			10:17:15	17.58	20.27	124.25	0.02	0.02	760	40642		
			10:17:16	17.56	20.27	124.53	0.02	0.02	760	42938		
			10:17:17	17.58	20.27	124.51	0.24	0.24	760	3224		
			10:17:18	17.60	20.27	124.05	0.02	0.02	760	46341		
			10:17:19	17.65	20.27	123.99	0.02	0.02	760	37438		
			10:17:20	17.67	20.27	124.01	0.02	0.02	760	39378		
			10:17:21	17.68	20.27	124.01	0.02	0.02	760	40642		
			10:17:22	17.69	20.26	124.01	0.02	0.02	760	40642		
			10:17:23	17.69	20.26	124.01	0.02	0.02	760	42222		
			10:17:24	17.68	20.27	124.05	0.02	0.02	760	41530		



**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
										Instant. Minimum Dilution	Minimum Plume Avg. Dilution	
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	102	200	
			10:17:25	17.70	20.27	124.03	0.02	0.02	760	38384		
			10:17:26	17.72	20.27	124.03	0.02	0.02	760	40642		
			10:17:27	17.71	20.27	123.97	0.02	0.02	760	39378		
			10:17:28	17.71	20.27	124.01	0.02	0.02	760	42697		
			10:17:29	17.75	20.27	124.01	0.02	0.02	760	46341		
			10:17:30	17.74	20.27	124.01	0.02	0.02	760	41530		
			10:17:31	17.78	20.27	123.94	0.02	0.02	760	41081		
			10:17:32	17.83	20.27	124.03	0.02	0.02	760	44706		
			10:17:33	17.82	20.27	124.01	0.02	0.02	760	40426		
			10:17:34	17.83	20.26	124.05	0.02	0.02	760	41530		
			10:17:35	17.87	20.27	124.01	0.02	0.02	760	41081		
			10:17:36	17.86	20.27	124.01	0.02	0.02	760	43429		
			10:17:37	17.89	20.27	124.03	0.02	0.02	760	42938		
			10:17:38	17.91	20.27	123.99	0.02	0.02	760	42458		
			10:17:39	17.91	20.28	123.94	0.02	0.02	760	41989		
			10:17:40	17.92	20.28	123.96	0.02	0.02	760	40212		
			10:17:41	17.96	20.28	123.92	0.02	0.02	760	44706		
			10:17:42	17.91	20.29	123.92	0.02	0.02	760	40642		
			10:17:43	17.96	20.28	124.01	0.02	0.02	760	41530		
			10:17:44	17.94	20.27	124.30	0.17	0.17	760	4350		
			10:17:45	17.95	20.27	124.31	0.10	0.10	760	7458		
			10:17:46	17.94	20.27	124.49	0.06	0.06	760	13451		
			10:17:47	17.97	20.27	124.25	0.08	0.08	760	9394		
			10:17:48	17.94	20.27	124.07	0.02	0.02	760	42938		
			10:17:49	17.93	20.27	124.03	0.02	0.02	760	44706		
			10:17:50	18.00	20.27	124.03	0.02	0.02	760	39378		
			10:17:51	17.96	20.27	124.01	0.02	0.02	760	39791		
			10:17:52	17.98	20.27	124.01	0.02	0.02	760	46341		
			10:17:53	18.04	20.27	124.01	0.02	0.02	760	38776		
			10:17:54	18.07	20.27	123.99	0.02	0.02	760	43429		
			10:17:55	18.08	20.27	124.03	0.02	0.02	760	42938		
			10:17:56	18.06	20.27	124.01	0.02	0.02	760	42938		
			10:17:57	18.08	20.27	123.99	0.02	0.02	760	41081		
			10:17:58	18.19	20.27	123.99	0.02	0.02	760	41989		
			10:17:59	18.19	20.27	124.03	0.02	0.02	760	41989		
			10:18:00	18.47	20.27	124.03	0.02	0.02	760	43678		
			10:18:01	18.59	20.27	123.99	0.02	0.02	760	45238		
			10:18:02	19.38	20.27	123.99	0.02	0.02	760	41530		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc.	Measured Initial Dye Conc.	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			10:18:03	21.70	20.27	124.03	0.02	0.02	760	46341		
			10:18:04	21.93	20.27	124.01	0.02	0.02	760	40642		
			10:18:05	21.84	20.27	124.03	0.02	0.02	760	39791		
			10:18:06	21.95	20.27	124.01	0.02	0.02	760	40642		
			10:18:07	21.85	20.27	124.13	0.02	0.02	760	40642		
			10:18:08	21.96	20.27	124.42	0.11	0.11	760	6620		
			10:18:09	22.04	20.27	124.46	0.02	0.02	760	42938		
			10:18:10	22.14	20.27	124.65	0.02	0.02	760	35185		
			10:18:11	22.31	20.27	124.33	0.21	0.21	760	3563		
			10:18:12	22.41	20.27	124.49	0.02	0.02	760	45238		
			10:18:13	23.15	20.26	125.14	1.18	0.68	760	1123		
			10:18:14	23.39	20.26	124.96	1.25	0.74	760	1025	1430	Plume traces at 23 ft
			10:18:15	23.45	20.26	124.94	0.82	0.35	760	2142		
			10:18:16	23.42	20.26	124.45	0.02	0.02	760	41081		
			10:18:17	23.43	20.26	124.84	0.29	0.29	760	2609		
			10:18:18	23.35	20.26	124.65	0.02	0.02	760	38384		
			10:18:19	23.36	20.26	124.18	0.02	0.02	760	41530		
			10:18:20	23.41	20.27	124.09	0.02	0.02	760	41530		
			10:18:21	23.52	20.27	124.03	0.02	0.02	760	39378		
			10:18:22	23.49	20.27	124.01	0.02	0.02	760	39378		
			10:18:23	23.50	20.27	124.03	0.02	0.02	760	43429		
			10:18:24	23.49	20.27	124.05	0.02	0.02	760	41081		
			10:18:25	23.49	20.26	124.01	0.02	0.02	760	39791		
			10:18:26	23.45	20.26	124.03	0.02	0.02	760	45238		
			10:18:27	23.36	20.26	124.05	0.02	0.02	760	40212		
			10:18:28	23.41	20.26	124.03	0.02	0.02	760	43678		
			10:18:29	23.32	20.26	124.05	0.02	0.02	760	44444		
			10:18:30	23.38	20.26	124.05	0.02	0.02	760	43678		
			10:18:31	23.38	20.26	124.05	0.02	0.02	760	43429		
			10:18:32	23.36	20.26	124.05	0.02	0.02	760	39378		
			10:18:33	23.43	20.26	124.01	0.02	0.02	760	41530		
			10:18:34	23.37	20.26	124.05	0.02	0.02	760	43182		
			10:18:35	23.36	20.26	124.01	0.02	0.02	760	41989		
			10:18:36	23.33	20.26	124.01	0.02	0.02	760	41530		
			10:18:37	23.34	20.26	124.03	0.02	0.02	760	46341		
			10:18:38	23.29	20.26	124.03	0.02	0.02	760	40642		
			10:18:39	23.36	20.26	124.03	0.02	0.02	760	42938		
			10:18:40	23.33	20.26	124.05	0.02	0.02	760	43678		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

102	Instantaneous Minimum Dilution in Profile
200	Minimum Average Dilution in Profile
380	Detected Plume Average Dilution
599	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:18:41	23.37	20.26	124.03	0.02	0.02	760	42938		
			10:18:42	23.35	20.26	124.03	0.02	0.02	760	43931		
			10:18:43	23.31	20.26	124.05	0.02	0.02	760	41081		
			10:18:44	23.33	20.26	124.05	0.02	0.02	760	43678		
			10:18:45	23.32	20.26	124.08	0.02	0.02	760	43678		
			10:18:46	23.28	20.26	124.09	0.02	0.02	760	36190		
			10:18:47	23.29	20.26	124.11	0.02	0.02	760	38974		
			10:18:48	23.27	20.26	124.11	0.02	0.02	760	40212		
			10:18:49	23.27	20.26	124.03	0.02	0.02	760	43429		
			10:18:50	23.25	20.26	124.09	0.02	0.02	760	44444		
			10:18:51	23.25	20.26	124.13	0.02	0.02	760	42938		
			10:18:52	23.31	20.26	124.11	0.02	0.02	760	44706		
			10:18:53	23.24	20.26	124.05	0.02	0.02	760	43182		
			10:18:54	23.26	20.26	124.10	0.02	0.02	760	44186		
			10:18:55	23.25	20.26	124.07	0.02	0.02	760	40212		
			10:18:56	23.27	20.26	124.03	0.02	0.02	760	41989		
			10:18:57	23.29	20.27	124.01	0.02	0.02	760	40642		
			10:18:58	23.25	20.27	123.99	0.02	0.02	760	42458		
			10:18:59	23.23	20.27	124.07	0.02	0.02	760	42938		
			10:19:00	23.19	20.26	124.15	0.02	0.02	760	41530		
			10:19:01	23.13	20.26	124.24	0.02	0.02	760	42458		
			10:19:02	23.10	20.26	124.11	0.02	0.02	760	39791		
			10:19:03	23.12	20.26	124.05	0.02	0.02	760	39791		
			10:19:04	23.12	20.26	124.06	0.02	0.02	760	39791		
			10:19:05	23.10	20.26	124.05	0.02	0.02	760	41530		
			10:19:06	23.12	20.26	124.05	0.02	0.02	760	40212		
			10:19:07	23.10	20.26	124.11	0.08	0.08	760	9870		
			10:19:08	23.10	20.26	124.13	0.02	0.02	760	38579		
			10:19:09	23.07	20.27	123.99	0.02	0.02	760	40212		
			10:19:10	23.03	20.27	124.03	0.02	0.02	760	42458		
			10:19:11	23.03	20.27	123.99	0.02	0.02	760	40212		
			10:19:12	22.98	20.27	124.03	0.02	0.02	760	40212		
			10:19:13	22.95	20.27	124.01	0.02	0.02	760	43931		
			10:19:14	22.90	20.27	124.01	0.02	0.02	760	38974		
			10:19:15	22.89	20.27	124.07	0.02	0.02	760	40642		
			10:19:16	22.85	20.27	124.15	0.02	0.02	760	40642		
			10:19:17	22.84	20.26	124.22	0.02	0.02	760	40212		
			10:19:18	22.85	20.26	124.15	0.02	0.02	760	41530		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

102	Instantaneous Minimum Dilution in Profile
200	Minimum Average Dilution in Profile
380	Detected Plume Average Dilution
599	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:19:19	22.90	20.26	124.09	0.48	0.05	760	14772		
			10:19:20	22.87	20.26	124.07	0.38	0.38	760	1983		
			10:19:21	22.85	20.26	124.03	0.09	0.09	760	8706		
			10:19:22	22.91	20.26	124.03	0.02	0.02	760	44706		
			10:19:23	22.89	20.26	124.03	0.04	0.04	760	19338		
			10:19:24	22.88	20.26	124.05	0.02	0.02	760	42458		
			10:19:25	22.88	20.26	124.01	0.02	0.02	760	39378		
			10:19:26	22.91	20.27	124.07	0.02	0.02	760	41081		
			10:19:27	22.91	20.27	124.05	0.02	0.02	760	41989		
			10:19:28	22.94	20.27	124.13	0.02	0.02	760	39791		
			10:19:29	22.89	20.27	124.11	0.02	0.02	760	40642		
			10:19:30	22.96	20.27	124.07	0.02	0.02	760	41081		
			10:19:31	23.01	20.26	124.03	0.02	0.02	760	42938		
			10:19:32	23.02	20.26	124.01	0.02	0.02	760	41530		
			10:19:33	23.02	20.26	124.18	0.02	0.02	760	44186		
			10:19:34	23.04	20.26	124.24	0.02	0.02	760	43678		
			10:19:35	22.95	20.26	124.18	0.02	0.02	760	41081		
			10:19:36	23.02	20.26	124.22	0.02	0.02	760	41989		
			10:19:37	22.98	20.26	124.25	0.16	0.16	760	4631		
			10:19:38	23.06	20.27	124.34	0.08	0.08	760	9608		
			10:19:39	23.03	20.26	124.21	0.02	0.02	760	39378		
			10:19:40	23.03	20.26	124.07	0.02	0.02	760	42458		
			10:19:41	23.09	20.26	124.05	0.02	0.02	760	42938		
			10:19:42	23.14	20.26	124.03	0.02	0.02	760	41530		
			10:19:43	23.10	20.26	124.01	0.02	0.02	760	41530		
			10:19:44	23.12	20.27	124.05	0.02	0.02	760	38974		
			10:19:45	23.01	20.27	124.01	0.02	0.02	760	39378		
			10:19:46	23.07	20.27	124.03	0.02	0.02	760	45238		
			10:19:47	23.04	20.27	124.03	0.02	0.02	760	41530		
			10:19:48	22.99	20.27	123.99	0.02	0.02	760	41081		
			10:19:49	23.03	20.28	124.01	0.02	0.02	760	40212		
			10:19:50	22.98	20.28	124.03	0.02	0.02	760	39378		
			10:19:51	23.01	20.27	124.03	0.06	0.06	760	13596		
			10:19:52	22.93	20.27	124.03	0.02	0.02	760	43429		
			10:19:53	22.99	20.27	124.01	0.02	0.02	760	45238		
			10:19:54	22.96	20.27	124.07	0.02	0.02	760	39175		
			10:19:55	22.99	20.27	124.11	0.02	0.02	760	39791		
			10:19:56	22.97	20.27	124.15	0.02	0.02	760	45238		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
										Instant. Minimum Dilution	Minimum Plume Avg. Dilution	
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:19:57	23.02	20.27	124.28	0.02	0.02	760	42458		
			10:19:58	23.03	20.27	124.29	0.08	0.08	760	9360		
			10:19:59	23.01	20.27	124.22	0.02	0.02	760	38974		
			10:20:00	23.00	20.27	124.22	0.02	0.02	760	45783		
			10:20:01	23.09	20.27	124.38	0.26	0.26	760	2961		
			10:20:02	23.15	20.27	124.29	0.13	0.13	760	5891		
			10:20:03	23.15	20.27	124.27	0.03	0.03	760	24595		
			10:20:04	23.22	20.27	124.29	0.05	0.05	760	16205		
			10:20:05	23.25	20.27	124.46	0.20	0.20	760	3718		
			10:20:06	23.33	20.27	124.38	0.18	0.18	760	4222		
			10:20:07	23.34	20.27	124.34	0.02	0.02	760	40642		
			10:20:08	23.41	20.27	124.78	0.77	0.32	760	2410		
			10:20:09	23.44	20.27	125.04	1.37	0.85	760	893	2452	Plume traces at 23 ft
			10:20:10	23.43	20.27	124.41	0.19	0.19	760	4053		
			10:20:11	23.45	20.26	124.11	0.02	0.02	760	42938		
			10:20:12	23.49	20.26	124.10	0.02	0.02	760	40642		
			10:20:13	23.54	20.26	124.13	0.02	0.02	760	41081		
			10:20:14	23.59	20.26	124.13	0.02	0.02	760	40212		
			10:20:15	23.64	20.26	124.15	0.02	0.02	760	45783		
			10:20:16	23.65	20.26	124.27	0.02	0.02	760	43429		
			10:20:17	23.68	20.26	124.32	0.02	0.02	760	44444		
			10:20:18	23.78	20.26	124.34	0.02	0.02	760	44444		
			10:20:19	23.73	20.26	124.32	0.02	0.02	760	45238		
			10:20:20	23.82	20.26	124.32	0.02	0.02	760	40642		
			10:20:21	23.84	20.26	124.30	0.06	0.06	760	12179		
			10:20:22	23.83	20.26	124.30	0.02	0.02	760	42938		
			10:20:23	23.87	20.26	124.34	0.02	0.02	760	41530		
			10:20:24	23.87	20.26	124.36	0.05	0.05	760	15385		
			10:20:25	23.90	20.26	124.42	0.02	0.02	760	41081		
			10:20:26	23.90	20.26	124.36	0.02	0.02	760	37255		
			10:20:27	23.88	20.26	124.36	0.02	0.02	760	40642		
			10:20:28	23.88	20.26	124.31	0.09	0.09	760	8530		
			10:20:29	23.86	20.26	124.11	0.02	0.02	760	44444		
			10:20:30	23.86	20.25	124.26	0.02	0.02	760	43429		
			10:20:31	23.87	20.26	124.21	0.02	0.02	760	43429		
			10:20:32	23.88	20.26	124.11	0.02	0.02	760	43429		
			10:20:33	23.83	20.26	124.07	0.02	0.02	760	44706		
			10:20:34	23.87	20.25	124.11	0.02	0.02	760	40212		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

102	Instantaneous Minimum Dilution in Profile
200	Minimum Average Dilution in Profile
380	Detected Plume Average Dilution
599	Profile Average Dilution

TABLE D-5			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:20:35	23.83	20.25	124.05	0.02	0.02	760	46341		
			10:20:36	23.89	20.25	124.11	0.02	0.02	760	40212		
			10:20:37	23.86	20.25	124.07	0.02	0.02	760	41530		
			10:20:38	23.84	20.25	124.07	0.02	0.02	760	39791		
			10:20:39	23.87	20.25	124.09	0.06	0.06	760	11931		
			10:20:40	23.86	20.25	124.15	0.26	0.26	760	2954		
			10:20:41	23.90	20.25	124.29	0.17	0.17	760	4431		
			10:20:42	23.95	20.25	124.24	0.07	0.07	760	11585		
			10:20:43	23.94	20.25	124.18	0.02	0.02	760	43931		
			10:20:44	23.92	20.25	124.13	0.02	0.02	760	39791		
			10:20:45	23.93	20.25	124.13	0.02	0.02	760	39791		
			10:20:46	23.90	20.26	124.18	0.02	0.02	760	43678		
			10:20:47	23.94	20.26	124.20	0.02	0.02	760	45783		
			10:20:48	23.91	20.26	124.13	0.02	0.02	760	41081		
			10:20:49	23.93	20.25	124.13	0.02	0.02	760	41989		
			10:20:50	23.91	20.25	124.13	0.02	0.02	760	39791		
			10:20:51	23.93	20.25	124.12	0.02	0.02	760	40212		
			10:20:52	23.94	20.25	124.09	0.02	0.02	760	43678		
			10:20:53	23.92	20.25	124.09	0.02	0.02	760	41989		
			10:20:54	23.81	20.25	124.13	0.02	0.02	760	39791		
			10:20:55	23.80	20.25	124.11	0.02	0.02	760	38579		
			10:20:56	23.90	20.25	124.09	0.02	0.02	760	42938		
			10:20:57	23.87	20.25	124.07	0.02	0.02	760	44706		
			10:20:58	23.84	20.25	124.11	0.02	0.02	760	44706		
			10:20:59	23.97	20.25	124.07	0.02	0.02	760	41530		
			10:21:00	24.29	20.25	124.05	0.02	0.02	760	48101		
			10:21:01	24.82	20.25	124.10	0.02	0.02	760	39175		
			10:21:02	27.14	20.25	124.15	0.02	0.02	760	45238		
			10:21:03	28.96	20.25	124.20	0.02	0.02	760	40642		
			10:21:04	29.04	20.25	124.13	0.02	0.02	760	43678		
			10:21:05	29.08	20.25	124.11	0.02	0.02	760	45783		
			10:21:06	29.08	20.25	124.18	0.02	0.02	760	42458		
			10:21:07	29.09	20.25	124.15	0.02	0.02	760	43931		
			10:21:08	29.13	20.25	124.13	0.02	0.02	760	46914		
			10:21:09	29.21	20.25	124.09	0.57	0.13	760	5687		
			10:21:10	29.24	20.25	124.08	0.18	0.18	760	4253		
			10:21:11	29.20	20.25	124.07	0.02	0.02	760	42938		
			10:21:12	29.24	20.25	124.11	0.02	0.02	760	44186		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
										Instant. Minimum Dilution	Minimum Plume Avg. Dilution	
Sampling Location			Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:21:13	29.11	20.25	124.11	0.02	0.02	760	42938		
			10:21:14	29.12	20.25	124.11	0.02	0.02	760	42938		
			10:21:15	29.23	20.25	124.09	0.02	0.02	760	43678		
			10:21:16	29.14	20.25	124.07	0.02	0.02	760	40642		
			10:21:17	29.22	20.25	124.07	0.02	0.02	760	42458		
			10:21:18	29.08	20.25	124.09	0.02	0.02	760	44444		
			10:21:19	29.07	20.25	124.05	0.02	0.02	760	44186		
			10:21:20	29.02	20.25	124.08	0.02	0.02	760	39791		
			10:21:21	28.98	20.25	124.09	0.02	0.02	760	41081		
			10:21:22	29.01	20.25	124.11	0.02	0.02	760	46341		
			10:21:23	29.03	20.25	124.09	0.02	0.02	760	41530		
			10:21:24	29.00	20.25	124.09	0.02	0.02	760	39378		
			10:21:25	28.92	20.25	124.09	0.02	0.02	760	45238		
			10:21:26	28.95	20.25	124.09	0.02	0.02	760	41530		
			10:21:27	28.90	20.25	124.09	0.02	0.02	760	43678		
			10:21:28	28.92	20.25	124.09	0.02	0.02	760	41081		
			10:21:29	28.87	20.25	124.13	0.02	0.02	760	43182		
			10:21:30	28.90	20.25	124.25	0.50	0.07	760	10785		
			10:21:31	28.88	20.25	124.40	0.74	0.28	760	2668		
			10:21:32	28.86	20.25	124.51	0.75	0.30	760	2576		
			10:21:33	28.82	20.25	124.53	0.37	0.37	760	2058		
			10:21:34	28.78	20.25	124.20	0.02	0.02	760	38974		
			10:21:35	28.76	20.25	124.11	0.02	0.02	760	45238		
			10:21:36	28.74	20.25	124.47	0.02	0.02	760	41081		
			10:21:37	28.71	20.25	125.02	1.26	0.75	760	1014		
			10:21:38	28.68	20.25	124.99	0.31	0.31	760	2487		
			10:21:39	28.68	20.25	124.37	0.02	0.02	760	40212		
			10:21:40	28.65	20.25	124.13	0.02	0.02	760	40212		
			10:21:41	28.64	20.25	124.05	0.02	0.02	760	41989		
			10:21:42	28.68	20.25	124.09	0.02	0.02	760	42458		
			10:21:43	28.69	20.25	124.09	0.02	0.02	760	43182		
			10:21:44	28.66	20.25	124.13	0.02	0.02	760	43678		
			10:21:45	28.63	20.25	124.07	0.02	0.02	760	39791		
			10:21:46	28.59	20.25	124.13	0.02	0.02	760	41989		
			10:21:47	28.52	20.25	124.27	0.06	0.06	760	13287		
			10:21:48	28.54	20.25	124.25	0.02	0.02	760	38974		
			10:21:49	28.47	20.25	124.16	0.02	0.02	760	45238		
			10:21:50	28.49	20.25	124.15	0.02	0.02	760	41989		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
										Instant. Minimum Dilution	Minimum Plume Avg. Dilution	
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	102	200	
			10:21:51	28.43	20.25	124.15	0.02	0.02	760	42458		
			10:21:52	28.46	20.25	124.22	0.02	0.02	760	42458		
			10:21:53	28.49	20.25	124.55	0.73	0.28	760	2730		
			10:21:54	28.47	20.25	124.68	0.99	0.51	760	1481		
			10:21:55	28.51	20.25	125.09	0.39	0.39	760	1932		
			10:21:56	28.50	20.25	124.68	0.18	0.18	760	4258		
			10:21:57	28.52	20.25	124.25	0.03	0.03	760	22029		
			10:21:58	28.52	20.25	125.01	1.89	1.32	760	575		
			10:21:59	28.50	20.25	125.38	2.12	1.53	760	498		
			10:22:00	28.47	20.25	125.13	1.66	1.11	760	682	702	Plume traces at 28 ft
			10:22:01	28.41	20.25	124.84	1.23	0.72	760	1054		
			10:22:02	28.41	20.25	124.56	0.48	0.06	760	13764		
			10:22:03	28.43	20.25	125.40	2.66	2.00	760	379		
			10:22:04	28.37	20.26	125.37	2.64	1.99	760	381		
			10:22:05	28.34	20.25	124.42	0.39	0.39	760	1934		
			10:22:06	28.31	20.25	124.87	0.81	0.35	760	2187		
			10:22:07	28.29	20.26	126.09	4.64	3.79	760	201		
			10:22:08	28.28	20.26	126.50	5.43	4.50	760	169		
			10:22:09	28.25	20.26	126.61	5.95	4.96	760	153	422	Plume at 28 ft
			10:22:10	28.25	20.26	125.16	1.15	0.65	760	1167		
			10:22:11	28.20	20.25	124.30	0.02	0.02	760	44706		
			10:22:12	28.23	20.25	124.54	0.02	0.02	760	43931		
			10:22:13	28.22	20.25	124.13	0.02	0.02	760	47500		
			10:22:14	28.20	20.25	124.15	0.02	0.02	760	43931		
			10:22:15	28.16	20.25	124.32	0.06	0.06	760	13499		
			10:22:16	28.16	20.25	124.25	0.02	0.02	760	41081		
			10:22:17	28.15	20.25	124.24	0.02	0.02	760	41081		
			10:22:18	28.18	20.25	124.27	0.04	0.04	760	20994		
			10:22:19	28.25	20.25	124.37	0.11	0.11	760	6953		
			10:22:20	28.25	20.25	124.34	0.02	0.02	760	40642		
			10:22:21	28.25	20.25	124.70	0.63	0.19	760	4031		
			10:22:22	28.26	20.25	125.35	1.64	1.10	760	694		
			10:22:23	28.18	20.26	125.59	2.55	1.91	760	398		
			10:22:24	28.21	20.26	125.64	3.35	2.63	760	289		
			10:22:25	28.16	20.26	124.86	0.99	0.51	760	1488		
			10:22:26	28.16	20.26	125.04	1.59	1.05	760	726		
			10:22:27	28.14	20.26	125.88	3.40	2.67	760	285		
			10:22:28	28.15	20.26	125.75	2.49	1.85	760	411	416	Plume at 28 ft



**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
										Instant. Minimum Dilution	Minimum Plume Avg. Dilution	
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	102	200	
			10:22:29	28.14	20.26	125.80	3.16	2.45	760	310		Plume at 28 ft
			10:22:30	28.13	20.26	125.78	2.84	2.17	760	350		
			10:22:31	28.16	20.26	125.20	0.67	0.22	760	3472		
			10:22:32	28.15	20.26	124.55	0.02	0.02	760	41530		
			10:22:33	28.12	20.26	124.15	0.02	0.02	760	42938		
			10:22:34	28.15	20.26	124.47	1.01	0.52	760	1449		
			10:22:35	28.15	20.26	124.97	1.48	0.95	760	799		
			10:22:36	28.15	20.26	124.49	0.14	0.14	760	5572		
			10:22:37	28.20	20.26	124.79	0.89	0.42	760	1825		
			10:22:38	28.26	20.26	124.43	0.13	0.13	760	6075		
			10:22:39	28.29	20.26	124.37	0.02	0.02	760	48718		
			10:22:40	28.26	20.26	124.42	0.04	0.04	760	17882		
			10:22:41	28.33	20.26	124.38	0.04	0.04	760	17391		
			10:22:42	28.36	20.26	124.49	0.25	0.25	760	3023		
			10:22:43	28.35	20.26	124.75	1.04	0.55	760	1370		
			10:22:44	28.41	20.26	124.82	0.84	0.37	760	2036		
			10:22:45	28.42	20.26	124.61	0.52	0.09	760	8484		
			10:22:46	28.40	20.26	124.52	0.15	0.15	760	5163		
			10:22:47	28.46	20.26	124.94	1.21	0.71	760	1074		
			10:22:48	28.40	20.26	125.24	1.56	1.02	760	743		
			10:22:49	28.47	20.26	125.20	1.69	1.14	760	669	760	
			10:22:50	28.49	20.26	125.01	1.95	1.37	760	554		
			10:22:51	28.46	20.26	124.57	0.40	0.40	760	1907		
			10:22:52	28.49	20.26	124.20	0.02	0.02	760	34081		
			10:22:53	28.48	20.26	124.09	0.02	0.02	760	40642		
			10:22:54	28.48	20.26	124.07	0.02	0.02	760	39791		
			10:22:55	28.53	20.26	124.01	0.02	0.02	760	41081		
			10:22:56	28.57	20.26	124.03	0.02	0.02	760	40642		
			10:22:57	28.59	20.26	124.11	0.02	0.02	760	43182		
			10:22:58	28.58	20.26	124.15	0.02	0.02	760	44444		
			10:22:59	28.57	20.26	124.07	0.02	0.02	760	43429		
			10:23:00	28.54	20.26	124.09	0.02	0.02	760	39791		
			10:23:01	28.58	20.26	124.23	0.02	0.02	760	31148		
			10:23:02	28.59	20.26	124.29	0.04	0.04	760	17967		
			10:23:03	28.58	20.26	124.29	0.02	0.02	760	42458		
			10:23:04	28.57	20.26	124.26	0.02	0.02	760	33188		
			10:23:05	28.56	20.26	124.25	0.02	0.02	760	45238		
			10:23:06	28.57	20.25	124.18	0.02	0.02	760	39378		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	102		Comments
										Instantaneous Minimum Dilution in Profile		
Sampling Location			Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	200		
										Minimum Average Dilution in Profile		
Water Depth (ft)			Current Speed & Direction						380		Measurement Observations	
									Detected Plume Average Dilution			
									599			
									Profile Average Dilution			
			10:23:07	28.52	20.25	124.21	0.02	0.02	760	38384		
			10:23:08	28.52	20.25	124.94	2.91	2.23	760	341		
			10:23:09	28.55	20.25	125.51	3.79	3.03	760	251		
			10:23:10	28.62	20.26	126.42	6.24	5.22	760	146		
			10:23:11	28.65	20.26	126.23	5.25	4.33	760	175		
			10:23:12	28.61	20.26	126.38	2.63	1.98	760	384		
			10:23:13	28.65	20.26	125.93	3.78	3.01	760	252		
			10:23:14	28.64	20.26	126.35	5.36	4.43	760	171		
			10:23:15	28.63	20.26	127.02	6.86	5.77	760	132		
			10:23:16	28.64	20.26	127.33	6.20	5.18	760	147		
			10:23:17	28.65	20.26	126.56	4.57	3.72	760	204		
			10:23:18	28.64	20.26	126.02	3.68	2.92	760	260		
			10:23:19	28.68	20.26	126.04	3.94	3.16	760	241		
			10:23:20	28.68	20.26	126.14	4.27	3.45	760	220	200	
			10:23:21	28.69	20.26	126.12	4.81	3.94	760	193	Plume at 28 ft	
			10:23:22	28.71	20.26	126.31	5.08	4.17	760	182		
			10:23:23	28.74	20.26	126.52	5.33	4.40	760	173		
			10:23:24	28.68	20.26	126.70	6.14	5.13	760	148		
			10:23:25	28.74	20.26	127.13	7.01	5.91	760	129		
			10:23:26	28.74	20.26	127.46	8.71	7.44	760	102		
			10:23:27	28.75	20.26	127.06	6.85	5.76	760	132		
			10:23:28	28.77	20.26	127.01	6.26	5.24	760	145		
			10:23:29	28.76	20.26	127.10	6.98	5.88	760	129		
			10:23:30	28.73	20.26	126.85	6.26	5.23	760	145		
			10:23:31	28.78	20.26	126.39	3.40	2.67	760	285		
			10:23:32	28.80	20.25	126.20	4.14	3.34	760	228		
			10:23:33	28.82	20.25	125.20	3.43	2.70	760	281		
			10:23:34	28.79	20.25	124.42	0.04	0.04	760	20000		
			10:23:35	28.81	20.25	124.20	0.02	0.02	760	41989		
			10:23:36	28.81	20.25	124.09	0.02	0.02	760	39791		
			10:23:37	28.80	20.25	124.15	0.02	0.02	760	41081		
			10:23:38	28.79	20.25	124.22	0.02	0.02	760	41530		
			10:23:39	28.76	20.25	124.29	0.12	0.12	760	6457		
			10:23:40	28.82	20.25	124.36	0.42	0.42	760	1824		
			10:23:41	28.82	20.25	124.61	2.76	2.10	760	362		
			10:23:42	28.83	20.25	124.68	2.18	1.58	760	482		
			10:23:43	28.85	20.25	124.81	1.72	1.17	760	651		
			10:23:44	28.85	20.25	124.82	1.00	0.52	760	1459		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc.	Measured Initial Dye Conc.	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			10:23:45	28.83	20.25	124.72	0.94	0.46	760	1645		Plume at 28 ft
			10:23:46	28.80	20.25	124.44	0.09	0.09	760	8146		
			10:23:47	28.73	20.25	124.68	1.75	1.19	760	637		
			10:23:48	28.73	20.25	125.61	2.82	2.15	760	354		
			10:23:49	28.72	20.25	126.28	4.79	3.92	760	194		
			10:23:50	28.71	20.25	125.91	3.21	2.50	760	304	330	
			10:23:51	28.80	20.25	126.14	4.13	3.33	760	228		
			10:23:52	28.74	20.25	126.33	5.56	4.61	760	165		
			10:23:53	28.69	20.25	125.15	2.40	1.77	760	429		
			10:23:54	28.70	20.25	124.65	1.05	0.56	760	1346		
			10:23:55	28.70	20.25	124.37	0.68	0.23	760	3235		
			10:23:56	28.74	20.25	124.25	0.02	0.02	760	33778		
			10:23:57	28.73	20.26	124.40	0.10	0.10	760	7811		
			10:23:58	28.73	20.26	124.61	0.77	0.31	760	2464		
			10:23:59	28.70	20.26	125.04	1.49	0.96	760	792		
			10:24:00	28.72	20.26	125.32	2.52	1.88	760	404		
			10:24:01	28.67	20.26	125.68	3.78	3.01	760	252		
			10:24:02	28.66	20.26	125.88	4.65	3.79	760	200	228	
			10:24:03	28.60	20.26	126.18	5.84	4.86	760	156		
			10:24:04	28.66	20.26	126.12	4.41	3.58	760	212		
			10:24:05	28.56	20.26	126.78	5.96	4.97	760	153		
			10:24:06	28.58	20.26	126.06	4.35	3.52	760	216		
			10:24:07	28.55	20.26	124.57	0.45	0.02	760	35085		
			10:24:08	28.59	20.26	125.52	2.02	1.43	760	531		
			10:24:09	28.60	20.27	125.74	2.68	2.03	760	375		
			10:24:10	28.57	20.27	125.83	4.35	3.52	760	216		
			10:24:11	28.53	20.27	126.04	4.77	3.90	760	195		
			10:24:12	28.50	20.27	126.29	4.96	4.07	760	187	289	
			10:24:13	28.50	20.27	126.35	5.90	4.91	760	155		
			10:24:14	28.54	20.27	126.56	5.33	4.41	760	172		
			10:24:15	28.50	20.27	126.13	4.38	3.55	760	214		
			10:24:16	28.58	20.26	125.59	1.95	1.37	760	554		
			10:24:17	28.57	20.26	125.45	1.07	0.58	760	1304		
			10:24:18	28.56	20.26	124.72	0.22	0.22	760	3405		
			10:24:19	28.54	20.26	125.01	1.87	1.30	760	584		
			10:24:20	28.55	20.26	125.44	3.34	2.62	760	290		
			10:24:21	28.54	20.26	126.18	4.62	3.76	760	202		
			10:24:22	28.54	20.26	127.05	6.65	5.59	760	136		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	102		Comments
										Instantaneous Minimum Dilution in Profile		
Sampling Location			Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	200		
										Minimum Average Dilution in Profile		
Water Depth (ft)			Current Speed & Direction						380		Measurement Observations	
									Detected Plume Average Dilution			
									599			
									Profile Average Dilution			
									Dilution Calculations			
			10:24:23	28.57	20.26	126.62	5.61	4.65	760	163		
			10:24:24	28.57	20.26	126.10	3.77	3.00	760	253		
			10:24:25	28.56	20.25	126.04	4.06	3.26	760	233		
			10:24:26	28.48	20.26	126.20	3.47	2.73	760	278		
			10:24:27	28.51	20.26	126.39	2.84	2.17	760	351		
			10:24:28	28.52	20.26	126.13	3.99	3.20	760	237		
			10:24:29	28.52	20.25	125.20	2.59	1.95	760	390		
			10:24:30	28.53	20.25	125.13	2.08	1.49	760	510		
			10:24:31	28.48	20.25	125.28	3.23	2.52	760	302	329	Plume at 28 ft
			10:24:32	28.53	20.25	125.72	3.46	2.72	760	279		
			10:24:33	28.47	20.26	125.59	2.39	1.76	760	431		
			10:24:34	28.50	20.26	125.51	2.52	1.88	760	404		
			10:24:35	28.45	20.27	125.39	2.38	1.75	760	434		
			10:24:36	28.41	20.27	125.18	2.12	1.52	760	500		
			10:24:37	28.39	20.27	125.28	1.86	1.29	760	590		
			10:24:38	28.36	20.26	125.66	2.97	2.28	760	333		
			10:24:39	28.36	20.26	125.66	3.34	2.62	760	291		
			10:24:40	28.34	20.26	125.52	4.08	3.28	760	232		
			10:24:41	28.34	20.26	125.80	3.87	3.09	760	246		
			10:24:42	28.28	20.26	126.02	4.10	3.30	760	230		
			10:24:43	28.23	20.26	125.50	1.65	1.11	760	687		
			10:24:44	28.19	20.26	124.74	0.15	0.15	760	5142		
			10:24:45	28.22	20.26	124.74	0.43	0.01	760	79587		
			10:24:46	28.13	20.26	124.61	0.10	0.10	760	7892		
			10:24:47	28.19	20.27	124.25	0.02	0.02	760	40212		
			10:24:48	28.10	20.27	124.57	0.30	0.30	760	2507		
			10:24:49	28.16	20.27	124.71	0.77	0.31	760	2458		
			10:24:50	28.11	20.27	124.27	0.02	0.02	760	45783		
			10:24:51	28.21	20.28	124.05	0.02	0.02	760	39378		
			10:24:52	28.26	20.28	124.03	0.02	0.02	760	45238		
			10:24:53	28.27	20.28	124.05	0.02	0.02	760	40642		
			10:24:54	28.27	20.28	124.01	0.02	0.02	760	40642		
			10:24:55	28.29	20.27	124.03	0.02	0.02	760	39175		
			10:24:56	28.27	20.27	124.05	0.02	0.02	760	44186		
			10:24:57	28.29	20.27	124.05	0.02	0.02	760	41081		
			10:24:58	28.22	20.27	124.01	0.02	0.02	760	41530		
			10:24:59	28.31	20.27	124.03	0.02	0.02	760	43678		
			10:25:00	28.27	20.27	124.01	0.02	0.02	760	40212		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
										Instant. Minimum Dilution	Minimum Plume Avg. Dilution	
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:25:01	28.30	20.28	124.01	0.02	0.02	760	45238		
			10:25:02	28.27	20.28	124.05	0.02	0.02	760	42458		
			10:25:03	28.32	20.28	124.01	0.02	0.02	760	39378		
			10:25:04	28.32	20.27	124.05	0.02	0.02	760	41530		
			10:25:05	28.36	20.27	124.05	0.02	0.02	760	41989		
			10:25:06	28.39	20.27	124.01	0.02	0.02	760	40212		
			10:25:07	28.37	20.27	124.03	0.02	0.02	760	40212		
			10:25:08	28.39	20.27	124.05	0.02	0.02	760	41989		
			10:25:09	28.32	20.27	124.06	0.02	0.02	760	42458		
			10:25:10	28.34	20.27	124.05	0.02	0.02	760	42938		
			10:25:11	28.32	20.27	124.05	0.02	0.02	760	41989		
			10:25:12	28.23	20.27	124.03	0.02	0.02	760	39378		
			10:25:13	28.36	20.27	124.15	0.02	0.02	760	44706		
			10:25:14	28.39	20.27	124.32	0.14	0.14	760	5464		
			10:25:15	28.43	20.27	124.42	0.23	0.23	760	3242		
			10:25:16	28.42	20.27	124.15	0.05	0.05	760	16814		
			10:25:17	28.35	20.27	124.13	0.02	0.02	760	38384		
			10:25:18	28.53	20.27	124.27	0.02	0.02	760	45783		
			10:25:19	29.83	20.27	124.51	0.25	0.25	760	3061		
			10:25:20	32.73	20.28	124.77	1.86	1.29	760	589		
			10:25:21	33.74	20.28	124.29	1.01	0.53	760	1432		
			10:25:22	33.88	20.28	124.27	0.06	0.06	760	12688		
			10:25:23	33.83	20.27	124.27	0.10	0.10	760	7407		
			10:25:24	33.92	20.27	124.89	0.70	0.25	760	3053		
			10:25:25	33.98	20.27	124.51	0.17	0.17	760	4460		
			10:25:26	33.99	20.27	124.15	0.02	0.02	760	42938		
			10:25:27	33.93	20.27	124.07	0.02	0.02	760	42458		
			10:25:28	33.94	20.27	124.06	0.02	0.02	760	39378		
			10:25:29	33.92	20.27	124.38	0.39	0.39	760	1931		
			10:25:30	33.83	20.27	124.80	2.26	1.65	760	460		
			10:25:31	33.79	20.27	125.10	2.35	1.73	760	439		
			10:25:32	33.75	20.27	125.55	3.05	2.36	760	322		
			10:25:33	33.67	20.28	125.49	3.11	2.42	760	315		
			10:25:34	33.63	20.27	125.32	2.08	1.49	760	512	423	Plume at 34 ft
			10:25:35	33.58	20.27	125.37	2.21	1.61	760	473		
			10:25:36	33.58	20.27	125.30	2.61	1.96	760	388		
			10:25:37	33.57	20.27	125.26	2.06	1.47	760	516		
			10:25:38	33.53	20.27	125.30	2.71	2.05	760	371		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
										Instant. Minimum Dilution	Minimum Plume Avg. Dilution	
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:25:39	33.54	20.27	125.29	2.35	1.73	760	438		
			10:25:40	33.49	20.27	124.95	0.37	0.37	760	2066		
			10:25:41	33.51	20.27	124.75	0.02	0.02	760	44444		
			10:25:42	33.44	20.27	124.18	0.02	0.02	760	40642		
			10:25:43	33.37	20.27	124.07	0.02	0.02	760	41081		
			10:25:44	33.40	20.27	124.07	0.02	0.02	760	41530		
			10:25:45	33.41	20.27	124.09	0.02	0.02	760	45238		
			10:25:46	33.41	20.27	124.05	0.02	0.02	760	44444		
			10:25:47	33.40	20.27	124.11	0.02	0.02	760	42458		
			10:25:48	33.42	20.27	124.43	0.62	0.17	760	4350		
			10:25:49	33.40	20.27	124.78	1.29	0.78	760	980		
			10:25:50	33.42	20.27	124.78	1.41	0.88	760	859		
			10:25:51	33.40	20.27	125.01	1.18	0.68	760	1121		
			10:25:52	33.41	20.27	124.88	0.92	0.45	760	1703		
			10:25:53	33.49	20.27	124.92	0.95	0.47	760	1612		
			10:25:54	33.51	20.27	124.70	0.73	0.28	760	2725		
			10:25:55	33.52	20.27	124.46	0.30	0.30	760	2573		
			10:25:56	33.52	20.27	124.34	0.21	0.21	760	3551		
			10:25:57	33.53	20.27	124.56	0.56	0.13	760	6044		
			10:25:58	33.56	20.27	124.82	1.44	0.91	760	832		
			10:25:59	33.61	20.27	124.78	1.46	0.93	760	814		
			10:26:00	33.55	20.27	124.74	1.14	0.64	760	1186		
			10:26:01	33.58	20.27	124.70	0.62	0.18	760	4170		
			10:26:02	33.57	20.27	124.80	1.07	0.58	760	1310		
			10:26:03	33.59	20.27	124.85	1.24	0.74	760	1031		
			10:26:04	33.64	20.27	124.68	0.81	0.35	760	2168		
			10:26:05	33.58	20.27	124.63	0.64	0.20	760	3843		
			10:26:06	33.57	20.27	124.56	0.42	0.00	760	377583		
			10:26:07	33.59	20.27	124.65	0.71	0.26	760	2934		
			10:26:08	33.57	20.27	124.88	0.95	0.47	760	1613		
			10:26:09	33.69	20.27	124.74	0.65	0.21	760	3668		
			10:26:10	33.66	20.26	124.63	0.57	0.13	760	5638		
			10:26:11	33.70	20.26	124.89	0.91	0.44	760	1739		
			10:26:12	33.67	20.26	125.05	1.95	1.37	760	554		
			10:26:13	33.74	20.26	125.03	1.95	1.37	760	554		
			10:26:14	33.75	20.26	125.01	2.67	2.01	760	377		
			10:26:15	33.75	20.26	125.11	2.09	1.49	760	509		
			10:26:16	33.74	20.26	125.18	2.30	1.69	760	450		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
										Instant. Minimum Dilution	Minimum Plume Avg. Dilution	
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:26:17	33.73	20.26	125.28	2.56	1.92	760	396		
			10:26:18	33.77	20.26	125.30	2.52	1.88	760	404		
			10:26:19	33.75	20.26	125.22	2.53	1.89	760	402		
			10:26:20	33.73	20.26	125.20	1.88	1.31	760	580		
			10:26:21	33.73	20.26	125.16	1.86	1.29	760	590		
			10:26:22	33.72	20.26	125.22	2.08	1.49	760	509	428	Plume at 34 ft
			10:26:23	33.80	20.27	125.52	2.80	2.13	760	356		
			10:26:24	33.76	20.27	125.66	3.09	2.40	760	317		
			10:26:25	33.76	20.27	125.78	2.91	2.23	760	341		
			10:26:26	33.82	20.27	125.70	4.05	3.26	760	233		
			10:26:27	33.79	20.27	125.60	3.11	2.41	760	315		
			10:26:28	33.78	20.27	125.41	2.82	2.15	760	354		
			10:26:29	33.88	20.27	125.28	2.24	1.63	760	466		
			10:26:30	33.83	20.27	125.30	2.44	1.82	760	419		
			10:26:31	33.86	20.27	125.41	2.86	2.19	760	348		
			10:26:32	33.86	20.27	125.24	2.09	1.50	760	507		
			10:26:33	33.89	20.27	124.90	1.08	0.59	760	1287		
			10:26:34	33.92	20.27	124.78	0.90	0.43	760	1762		
			10:26:35	33.93	20.27	124.68	1.22	0.71	760	1065		
			10:26:36	33.94	20.27	124.59	0.56	0.13	760	5985		
			10:26:37	34.00	20.27	124.61	0.87	0.40	760	1894		
			10:26:38	34.01	20.27	124.59	0.71	0.26	760	2904		
			10:26:39	33.92	20.27	124.63	0.70	0.25	760	3059		
			10:26:40	33.82	20.27	124.91	0.97	0.49	760	1557		
			10:26:41	33.80	20.27	125.07	1.79	1.23	760	619		
			10:26:42	33.85	20.27	124.88	2.12	1.52	760	499		
			10:26:43	33.78	20.27	124.74	2.00	1.42	760	536		
			10:26:44	33.83	20.27	124.44	1.30	0.79	760	964		
			10:26:45	33.82	20.27	124.32	1.46	0.93	760	816		
			10:26:46	33.95	20.27	124.34	0.12	0.12	760	6265		
			10:26:47	33.87	20.27	124.30	0.23	0.23	760	3314		
			10:26:48	33.97	20.27	125.20	1.52	0.99	760	768		
			10:26:49	33.83	20.27	125.87	3.78	3.01	760	252		
			10:26:50	33.83	20.27	126.21	5.13	4.22	760	180		
			10:26:51	33.90	20.27	126.16	4.49	3.65	760	208		
			10:26:52	33.85	20.27	126.23	4.78	3.91	760	194		
			10:26:53	33.85	20.27	126.27	5.00	4.11	760	185		
			10:26:54	33.85	20.27	126.19	4.95	4.06	760	187	270	Plume at 34 ft

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
										Instant. Minimum Dilution	Minimum Plume Avg. Dilution	
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	102	200	
			10:26:55	33.86	20.27	126.23	5.01	4.12	760	185		
			10:26:56	33.87	20.27	126.18	4.76	3.89	760	195		
			10:26:57	33.88	20.27	125.38	2.87	2.19	760	346		
			10:26:58	33.88	20.26	124.88	1.92	1.34	760	567		
			10:26:59	33.92	20.26	125.40	2.59	1.94	760	391		
			10:27:00	33.93	20.27	125.20	2.89	2.21	760	344		
			10:27:01	33.93	20.26	124.29	0.92	0.44	760	1711		
			10:27:02	33.87	20.26	124.15	0.02	0.02	760	43429		
			10:27:03	33.83	20.26	124.10	0.02	0.02	760	41081		
			10:27:04	33.80	20.26	124.33	0.03	0.03	760	24918		
			10:27:05	33.79	20.26	125.08	2.46	1.83	760	415		
			10:27:06	33.76	20.26	125.24	1.43	0.90	760	840		
			10:27:07	33.77	20.26	125.39	2.08	1.49	760	511		
			10:27:08	33.83	20.26	125.37	2.50	1.86	760	408		
			10:27:09	33.83	20.26	125.24	2.38	1.76	760	432		
			10:27:10	33.87	20.26	125.28	2.23	1.63	760	468		
			10:27:11	33.85	20.26	125.20	2.19	1.58	760	480		
			10:27:12	33.81	20.26	125.49	4.42	3.59	760	212	492	Plume at 34 ft
			10:27:13	33.84	20.26	125.14	2.22	1.62	760	471		
			10:27:14	33.80	20.26	124.89	1.31	0.79	760	958		
			10:27:15	33.77	20.26	125.49	3.28	2.57	760	296		
			10:27:16	33.77	20.26	125.32	2.99	2.30	760	330		
			10:27:17	33.74	20.26	125.20	1.90	1.32	760	574		
			10:27:18	33.75	20.26	124.55	0.37	0.37	760	2035		
			10:27:19	33.72	20.26	124.59	0.74	0.28	760	2696		
			10:27:20	33.69	20.26	124.76	1.13	0.64	760	1196		
			10:27:21	33.65	20.26	124.86	1.60	1.06	760	717		
			10:27:22	33.65	20.26	125.05	1.71	1.16	760	656		
			10:27:23	33.66	20.26	125.35	2.66	2.01	760	379		
			10:27:24	33.65	20.27	125.44	2.59	1.95	760	391		
			10:27:25	33.65	20.26	124.61	0.02	0.02	760	40212		
			10:27:26	33.73	20.26	124.32	0.23	0.23	760	3320		
			10:27:27	33.72	20.26	124.26	0.02	0.02	760	40642		
			10:27:28	33.72	20.26	124.34	0.06	0.06	760	13194		
			10:27:29	33.76	20.26	124.21	0.07	0.07	760	10354		
			10:27:30	33.75	20.26	124.37	0.13	0.13	760	5896		
			10:27:31	33.67	20.26	124.40	0.51	0.08	760	9578		
			10:27:32	33.77	20.26	124.81	1.34	0.82	760	925		



**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc.	Measured Initial Dye Conc.	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			10:27:33	33.66	20.26	124.78	1.34	0.83	760	918		
			10:27:34	33.70	20.26	124.70	0.86	0.39	760	1933		
			10:27:35	33.64	20.26	124.37	0.03	0.03	760	24127		
			10:27:36	33.61	20.26	124.20	0.02	0.02	760	47500		
			10:27:37	33.62	20.26	124.29	0.08	0.08	760	9883		
			10:27:38	33.66	20.26	124.49	0.72	0.27	760	2800		
			10:27:39	33.64	20.26	124.40	0.08	0.08	760	9883		
			10:27:40	33.71	20.26	124.27	0.08	0.08	760	9935		
			10:27:41	33.76	20.26	124.36	0.23	0.23	760	3323		
			10:27:42	33.83	20.26	124.26	0.02	0.02	760	42938		
			10:27:43	33.89	20.26	124.36	0.02	0.02	760	44444		
			10:27:44	33.91	20.26	124.21	0.02	0.02	760	40212		
			10:27:45	33.99	20.26	124.18	0.02	0.02	760	41989		
			10:27:46	33.95	20.26	124.53	0.85	0.39	760	1964		
			10:27:47	33.95	20.26	125.04	1.97	1.39	760	546		
			10:27:48	34.00	20.26	125.28	3.01	2.32	760	328		
			10:27:49	34.03	20.26	125.52	3.14	2.44	760	311		
			10:27:50	34.03	20.26	125.61	3.25	2.53	760	300		
			10:27:51	34.06	20.26	125.78	3.70	2.94	760	258		
			10:27:52	34.04	20.26	125.59	3.08	2.38	760	319		
			10:27:53	34.04	20.26	125.64	3.25	2.53	760	300		
			10:27:54	34.07	20.26	125.53	2.39	1.76	760	431		
			10:27:55	34.14	20.26	125.41	2.48	1.85	760	412		
			10:27:56	34.11	20.26	125.56	2.95	2.27	760	335		
			10:27:57	34.18	20.26	125.66	3.62	2.87	760	265		
			10:27:58	34.14	20.26	125.68	3.50	2.76	760	275		
			10:27:59	34.18	20.26	125.66	2.78	2.12	760	359		
			10:28:00	34.17	20.26	125.61	2.67	2.02	760	377		
			10:28:01	34.23	20.26	125.64	3.78	3.01	760	252		
			10:28:02	34.19	20.26	125.99	4.33	3.50	760	217		
			10:28:03	34.25	20.27	126.45	5.59	4.64	760	164		
			10:28:04	34.18	20.27	126.54	5.99	4.99	760	152		
			10:28:05	34.18	20.27	126.23	4.95	4.06	760	187		
			10:28:06	34.17	20.27	126.02	3.81	3.04	760	250		
			10:28:07	34.17	20.27	125.64	3.38	2.66	760	286		
			10:28:08	34.21	20.26	125.45	2.50	1.87	760	407		
			10:28:09	34.21	20.26	125.57	3.12	2.42	760	313		
			10:28:10	34.18	20.26	125.55	2.95	2.27	760	335		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
										Instant. Minimum Dilution	Minimum Plume Avg. Dilution	
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:28:11	34.20	20.27	125.78	3.52	2.78	760	273		
			10:28:12	34.18	20.27	125.78	3.91	3.13	760	243		
			10:28:13	34.18	20.27	125.78	3.56	2.81	760	270		
			10:28:14	34.22	20.27	125.95	4.08	3.29	760	231		
			10:28:15	34.17	20.27	125.97	4.01	3.22	760	236		
			10:28:16	34.13	20.27	126.02	3.98	3.19	760	238		
			10:28:17	34.09	20.27	126.04	4.28	3.46	760	219		
			10:28:18	34.12	20.27	126.04	3.70	2.94	760	258		
			10:28:19	34.09	20.27	125.85	3.89	3.11	760	244	280	Plume at 34 ft
			10:28:20	34.09	20.27	125.62	3.36	2.64	760	288		
			10:28:21	34.06	20.27	125.61	3.28	2.57	760	296		
			10:28:22	34.01	20.27	125.66	2.83	2.16	760	351		
			10:28:23	34.02	20.27	126.14	4.74	3.87	760	196		
			10:28:24	33.98	20.27	126.25	4.94	4.06	760	187		
			10:28:25	33.97	20.27	126.44	5.00	4.11	760	185		
			10:28:26	33.90	20.27	126.62	5.61	4.65	760	163		
			10:28:27	33.96	20.27	126.71	6.14	5.13	760	148		
			10:28:28	33.84	20.27	126.71	5.60	4.65	760	164		
			10:28:29	33.81	20.27	126.29	4.14	3.34	760	228		
			10:28:30	33.76	20.27	125.64	3.45	2.71	760	280		
			10:28:31	33.66	20.27	125.47	2.68	2.03	760	375		
			10:28:32	33.62	20.27	125.76	3.25	2.54	760	299		
			10:28:33	33.62	20.27	125.95	3.95	3.17	760	240		
			10:28:34	33.60	20.27	125.75	2.34	1.72	760	442		
			10:28:35	33.56	20.27	125.20	1.84	1.27	760	598		
			10:28:36	33.56	20.26	125.16	1.91	1.34	760	568		
			10:28:37	33.61	20.26	125.53	2.91	2.24	760	340		
			10:28:38	33.53	20.27	125.53	2.78	2.11	760	360		
			10:28:39	33.56	20.27	125.30	2.10	1.51	760	505		
			10:28:40	33.56	20.27	124.97	1.55	1.01	760	753		
			10:28:41	33.51	20.27	124.78	1.03	0.54	760	1398		
			10:28:42	33.50	20.27	124.99	1.01	0.53	760	1430		
			10:28:43	33.49	20.27	125.07	2.63	1.99	760	383		
			10:28:44	33.38	20.27	125.05	1.86	1.29	760	590		
			10:28:45	33.39	20.27	125.11	1.92	1.34	760	566		
			10:28:46	33.28	20.27	124.97	2.03	1.44	760	528		
			10:28:47	33.32	20.27	124.88	0.89	0.42	760	1803		
			10:28:48	33.28	20.27	124.77	1.04	0.55	760	1373		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
										Instant. Minimum Dilution	Minimum Plume Avg. Dilution	
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:28:49	33.23	20.27	124.80	0.62	0.18	760	4178		
			10:28:50	33.21	20.27	124.65	0.61	0.17	760	4441		
			10:28:51	33.17	20.28	124.63	0.90	0.43	760	1770		
			10:28:52	33.16	20.28	124.70	1.52	0.98	760	774		
			10:28:53	33.18	20.28	124.80	1.26	0.75	760	1010		
			10:28:54	33.11	20.28	124.92	1.09	0.60	760	1262		
			10:28:55	33.12	20.27	125.35	2.53	1.89	760	402		
			10:28:56	33.11	20.27	125.02	1.33	0.82	760	932		
			10:28:57	33.12	20.27	124.42	0.15	0.15	760	4987		
			10:28:58	33.13	20.27	124.63	0.56	0.12	760	6245		
			10:28:59	33.12	20.27	125.07	1.21	0.71	760	1072		
			10:29:00	33.12	20.27	124.97	1.25	0.75	760	1019		
			10:29:01	33.13	20.27	124.84	1.21	0.70	760	1080		
			10:29:02	33.15	20.27	124.95	1.72	1.16	760	653		
			10:29:03	33.16	20.27	125.09	1.70	1.15	760	661		
			10:29:04	33.16	20.27	125.20	2.08	1.49	760	512		
			10:29:05	33.13	20.27	125.28	2.37	1.75	760	435		
			10:29:06	33.21	20.27	125.32	2.03	1.45	760	526		
			10:29:07	33.18	20.27	125.23	2.14	1.55	760	492		
			10:29:08	33.24	20.27	125.16	2.35	1.73	760	440	484	Plume at 34 ft
			10:29:09	33.28	20.27	125.26	2.41	1.79	760	425		
			10:29:10	33.29	20.27	125.11	2.16	1.56	760	488		
			10:29:11	33.32	20.27	125.07	1.87	1.30	760	586		
			10:29:12	33.39	20.27	125.22	2.27	1.66	760	457		
			10:29:13	33.38	20.27	125.37	2.51	1.87	760	405		
			10:29:14	33.44	20.27	125.45	2.95	2.27	760	335		
			10:29:15	33.40	20.27	125.41	2.70	2.05	760	371		
			10:29:16	33.51	20.27	125.22	2.20	1.60	760	475		
			10:29:17	33.50	20.27	125.05	1.45	0.93	760	821		
			10:29:18	33.55	20.27	124.80	1.20	0.70	760	1082		
			10:29:19	33.55	20.27	124.87	0.83	0.37	760	2072		
			10:29:20	33.57	20.27	125.03	1.24	0.73	760	1039		
			10:29:21	33.58	20.27	125.18	2.22	1.62	760	470		
			10:29:22	33.56	20.27	125.26	2.18	1.58	760	481		
			10:29:23	33.49	20.27	125.43	2.94	2.26	760	336		
			10:29:24	33.51	20.28	125.54	2.87	2.20	760	346		
			10:29:25	33.45	20.28	125.39	2.07	1.48	760	514		
			10:29:26	33.44	20.27	125.44	2.57	1.92	760	395		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	102		Comments
										Instantaneous Minimum Dilution in Profile		
Sampling Location			Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	200		
										Minimum Average Dilution in Profile		
Water Depth (ft)			Current Speed & Direction						380		Measurement Observations	
									Detected Plume Average Dilution			
									599			
									Profile Average Dilution			
			10:29:27	33.46	20.27	125.55	2.95	2.27	760	335	439	Plume at 34 ft
			10:29:28	33.45	20.27	125.52	2.87	2.19	760	347		
			10:29:29	33.34	20.27	125.32	2.12	1.52	760	499		
			10:29:30	33.41	20.28	125.30	1.69	1.13	760	670		
			10:29:31	33.34	20.28	125.41	3.09	2.39	760	318		
			10:29:32	33.37	20.28	125.43	2.78	2.12	760	359		
			10:29:33	33.36	20.28	125.26	2.60	1.95	760	389		
			10:29:34	33.42	20.28	125.32	1.93	1.35	760	561		
			10:29:35	33.45	20.28	125.17	1.93	1.35	760	561		
			10:29:36	33.45	20.28	125.22	1.44	0.91	760	832		
			10:29:37	33.52	20.28	125.13	1.26	0.76	760	1006		
			10:29:38	33.52	20.28	125.22	2.20	1.59	760	477		
			10:29:39	33.49	20.28	125.24	2.19	1.59	760	479		
			10:29:40	33.45	20.28	125.10	2.39	1.77	760	430		
			10:29:41	33.40	20.28	125.16	2.37	1.75	760	434		
			10:29:42	33.29	20.28	125.04	0.76	0.30	760	2532		
			10:29:43	33.22	20.28	124.80	1.26	0.75	760	1008		
			10:29:44	33.25	20.28	124.49	0.58	0.14	760	5456		
			10:29:45	33.30	20.28	124.39	0.02	0.02	760	41989		
			10:29:46	33.21	20.28	124.38	0.09	0.09	760	8094		
			10:29:47	33.22	20.28	124.77	1.16	0.66	760	1144		
			10:29:48	33.49	20.28	125.18	2.11	1.52	760	501		
			10:29:49	33.61	20.28	125.49	2.52	1.89	760	403		
			10:29:50	34.16	20.28	125.24	1.64	1.09	760	695		
			10:29:51	34.35	20.28	125.49	1.56	1.02	760	744		
			10:29:52	34.41	20.28	124.59	0.05	0.05	760	16450		
			10:29:53	34.53	20.28	124.61	0.38	0.38	760	1980		
			10:29:54	35.08	20.28	125.27	2.49	1.86	760	409		
			10:29:55	36.66	20.28	125.40	2.84	2.17	760	350		
			10:29:56	37.31	20.28	124.82	2.31	1.69	760	450		
			10:29:57	37.32	20.28	124.72	2.07	1.48	760	513		
			10:29:58	37.52	20.28	125.27	1.32	0.80	760	945		
			10:29:59	37.49	20.28	125.64	3.31	2.59	760	293		
			10:30:00	37.54	20.28	125.70	3.47	2.73	760	278		
			10:30:01	37.58	20.28	125.41	3.41	2.68	760	283		
			10:30:02	37.63	20.28	125.49	4.86	3.98	760	191	374	Plume at 37 ft
			10:30:03	37.58	20.28	125.32	3.71	2.95	760	258		
			10:30:04	37.59	20.28	125.40	2.91	2.24	760	340		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
										Instant. Minimum Dilution	Minimum Plume Avg. Dilution	
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:30:05	37.61	20.28	125.83	3.26	2.54	760	299		
			10:30:06	37.60	20.28	126.14	4.89	4.01	760	189		
			10:30:07	37.73	20.28	126.24	4.13	3.32	760	229		
			10:30:08	37.66	20.28	125.75	2.33	1.72	760	443		
			10:30:09	37.72	20.28	125.39	2.06	1.47	760	518		
			10:30:10	37.66	20.27	124.96	1.73	1.17	760	650		
			10:30:11	37.67	20.27	124.65	1.05	0.56	760	1358		
			10:30:12	37.57	20.28	124.31	0.03	0.03	760	26027		
			10:30:13	37.56	20.28	124.12	0.02	0.02	760	44706		
			10:30:14	37.50	20.28	124.20	0.02	0.02	760	42458		
			10:30:15	37.97	20.28	124.13	0.02	0.02	760	42458		
			10:30:16	38.39	20.28	124.13	0.02	0.02	760	42458		
			10:30:17	38.35	20.28	124.11	0.02	0.02	760	41989		
			10:30:18	38.29	20.28	124.11	0.02	0.02	760	40642		
			10:30:19	38.29	20.28	124.18	0.02	0.02	760	42458		
			10:30:20	38.33	20.28	124.25	0.03	0.03	760	25503		
			10:30:21	38.36	20.28	124.55	0.43	0.00	760	167957		
			10:30:22	38.22	20.28	124.78	1.04	0.55	760	1372		
			10:30:23	38.17	20.28	124.96	2.14	1.54	760	494		
			10:30:24	38.19	20.28	125.08	2.66	2.01	760	379		
			10:30:25	38.21	20.28	125.41	3.49	2.75	760	277		
			10:30:26	38.18	20.28	125.56	3.03	2.34	760	324		
			10:30:27	38.21	20.28	125.52	2.58	1.94	760	393		
			10:30:28	38.17	20.28	125.22	2.14	1.54	760	494		
			10:30:29	38.21	20.28	124.85	1.36	0.85	760	899		
			10:30:30	38.25	20.28	124.80	0.66	0.22	760	3491		
			10:30:31	38.31	20.28	124.96	1.53	1.00	760	762		
			10:30:32	38.36	20.28	125.15	1.88	1.31	760	582		
			10:30:33	38.38	20.28	125.41	2.56	1.92	760	397		
			10:30:34	38.43	20.28	125.35	2.65	2.00	760	381		
			10:30:35	38.42	20.28	125.07	2.34	1.73	760	441		
			10:30:36	38.46	20.28	124.97	1.86	1.29	760	590		
			10:30:37	38.54	20.28	125.18	2.50	1.86	760	408		
			10:30:38	38.49	20.28	125.47	3.45	2.72	760	280		
			10:30:39	38.50	20.28	125.61	3.23	2.52	760	301		
			10:30:40	38.48	20.28	125.74	3.69	2.93	760	259		
			10:30:41	38.58	20.28	125.49	2.69	2.04	760	373	434	Plume at 38 ft
			10:30:42	38.52	20.28	125.30	2.25	1.64	760	464		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
										Instant. Minimum Dilution	Minimum Plume Avg. Dilution	
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	102	200	
			10:30:43	38.58	20.28	125.37	2.31	1.69	760	449		
			10:30:44	38.57	20.28	125.60	2.86	2.18	760	348		
			10:30:45	38.56	20.28	125.56	2.61	1.96	760	388		
			10:30:46	38.53	20.28	125.49	2.62	1.97	760	385		
			10:30:47	38.52	20.28	125.47	2.80	2.14	760	356		
			10:30:48	38.54	20.28	125.49	3.31	2.59	760	293		
			10:30:49	38.54	20.28	125.45	2.85	2.18	760	349		
			10:30:50	38.49	20.28	125.07	1.84	1.27	760	599		
			10:30:51	38.38	20.28	124.97	1.63	1.09	760	699		
			10:30:52	38.43	20.28	124.94	1.05	0.56	760	1354		
			10:30:53	38.34	20.28	125.39	1.96	1.38	760	552		
			10:30:54	38.33	20.28	125.70	3.85	3.08	760	247		
			10:30:55	38.26	20.28	125.56	3.59	2.84	760	267		
			10:30:56	38.28	20.28	125.28	3.27	2.56	760	297		
			10:30:57	38.28	20.28	125.09	3.89	3.11	760	244		
			10:30:58	38.27	20.28	125.16	2.42	1.79	760	424		
			10:30:59	38.27	20.28	125.34	3.43	2.70	760	282		
			10:31:00	38.25	20.28	125.97	4.48	3.64	760	209	291	
			10:31:01	38.25	20.28	126.25	5.40	4.46	760	170		
			10:31:02	38.22	20.28	126.25	4.92	4.04	760	188		
			10:31:03	38.22	20.28	126.02	4.48	3.64	760	209		
			10:31:04	38.23	20.28	125.67	3.71	2.95	760	258		
			10:31:05	38.13	20.28	125.63	3.02	2.33	760	326		
			10:31:06	38.18	20.28	125.66	3.03	2.34	760	325		
			10:31:07	38.14	20.28	125.40	2.72	2.06	760	369		
			10:31:08	38.08	20.28	124.78	0.91	0.44	760	1743		
			10:31:09	38.10	20.28	125.18	1.27	0.76	760	1001		
			10:31:10	38.09	20.28	125.63	2.69	2.04	760	373		
			10:31:11	38.13	20.28	126.02	3.95	3.17	760	240		
			10:31:12	38.09	20.28	126.08	4.28	3.46	760	220	352	
			10:31:13	38.14	20.28	125.77	3.50	2.77	760	275		
			10:31:14	38.06	20.28	125.41	2.05	1.46	760	521		
			10:31:15	38.10	20.28	125.45	2.50	1.86	760	408		
			10:31:16	38.02	20.28	125.49	2.42	1.80	760	423		
			10:31:17	38.05	20.28	125.04	0.02	0.02	760	32203		
			10:31:18	38.03	20.28	124.44	0.37	0.37	760	2044		
			10:31:19	38.01	20.29	124.35	0.02	0.02	760	33778		
			10:31:20	38.01	20.29	124.12	0.02	0.02	760	41081		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
										Instant. Minimum Dilution	Minimum Plume Avg. Dilution	
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	102	200	
			10:31:21	38.00	20.28	124.37	0.05	0.05	760	16450		
			10:31:22	38.05	20.28	124.46	0.67	0.22	760	3386		
			10:31:23	38.04	20.28	124.55	0.72	0.27	760	2833		
			10:31:24	38.06	20.28	124.46	1.20	0.69	760	1094		
			10:31:25	38.00	20.28	124.34	0.07	0.07	760	11226		
			10:31:26	38.09	20.28	124.27	0.10	0.10	760	7301		
			10:31:27	38.00	20.28	124.42	0.48	0.05	760	14850		
			10:31:28	37.99	20.28	124.94	2.73	2.07	760	368		
			10:31:29	38.00	20.28	125.33	3.47	2.74	760	278		
			10:31:30	37.96	20.28	125.49	3.08	2.39	760	318		
			10:31:31	37.97	20.28	125.25	2.06	1.47	760	517		
			10:31:32	37.91	20.28	124.61	0.15	0.15	760	5063		
			10:31:33	37.87	20.28	124.57	0.56	0.13	760	6062		
			10:31:34	37.85	20.28	124.82	1.67	1.12	760	676		
			10:31:35	37.85	20.28	124.91	1.58	1.04	760	731		
			10:31:36	37.80	20.28	124.98	1.53	1.00	760	763		
			10:31:37	37.79	20.28	125.18	2.34	1.72	760	441		
			10:31:38	37.74	20.28	125.18	2.16	1.56	760	486		
			10:31:39	37.77	20.28	125.28	2.42	1.79	760	424		
			10:31:40	37.74	20.28	125.53	3.47	2.74	760	277		
			10:31:41	37.74	20.28	125.59	3.34	2.62	760	290		
			10:31:42	37.78	20.28	125.54	2.97	2.29	760	333		
			10:31:43	37.83	20.28	125.57	3.06	2.37	760	321		
			10:31:44	37.84	20.28	125.60	3.12	2.42	760	314		
			10:31:45	37.90	20.28	125.59	3.28	2.57	760	296		
			10:31:46	37.88	20.28	125.68	3.51	2.77	760	275		
			10:31:47	37.86	20.28	125.76	3.64	2.89	760	263		
			10:31:48	37.91	20.28	125.71	3.59	2.84	760	267		
			10:31:49	37.88	20.28	125.76	3.57	2.83	760	269		
			10:31:50	37.90	20.28	125.78	3.63	2.88	760	264	323	Plume at 38 ft
			10:31:51	37.91	20.28	125.70	3.38	2.66	760	286		
			10:31:52	37.92	20.28	125.68	3.29	2.58	760	295		
			10:31:53	37.88	20.28	125.72	3.41	2.68	760	284		
			10:31:54	37.87	20.28	125.89	3.90	3.12	760	244		
			10:31:55	37.87	20.28	125.95	4.26	3.44	760	221		
			10:31:56	37.90	20.28	125.93	4.13	3.32	760	229		
			10:31:57	37.92	20.28	125.87	4.24	3.42	760	222		
			10:31:58	37.98	20.28	125.85	3.78	3.01	760	252		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
										Instant. Minimum Dilution	Minimum Plume Avg. Dilution	
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:31:59	37.99	20.28	125.87	4.05	3.25	760	234		
			10:32:00	37.99	20.28	125.89	3.73	2.97	760	256		
			10:32:01	38.03	20.28	125.78	3.36	2.64	760	288		
			10:32:02	38.08	20.28	125.78	3.33	2.61	760	291		
			10:32:03	38.08	20.28	125.99	4.17	3.36	760	226		
			10:32:04	38.13	20.28	126.02	4.23	3.41	760	223		
			10:32:05	38.20	20.28	126.06	4.49	3.65	760	208		
			10:32:06	38.25	20.28	126.06	4.26	3.45	760	221		
			10:32:07	38.24	20.27	125.75	3.43	2.70	760	282		
			10:32:08	38.16	20.27	125.61	3.07	2.37	760	320		
			10:32:09	38.32	20.28	125.68	3.28	2.56	760	296		
			10:32:10	38.23	20.28	125.63	3.12	2.42	760	314		
			10:32:11	38.34	20.28	125.68	2.41	1.78	760	426		
			10:32:12	38.25	20.28	125.70	2.71	2.05	760	371		
			10:32:13	38.32	20.27	125.61	3.30	2.58	760	295		
			10:32:14	38.33	20.27	125.63	3.34	2.62	760	291		
			10:32:15	38.34	20.27	125.64	3.12	2.42	760	314		
			10:32:16	38.39	20.27	125.54	2.85	2.18	760	349		
			10:32:17	38.39	20.27	125.53	2.61	1.96	760	388		
			10:32:18	38.30	20.27	125.56	2.78	2.12	760	359		
			10:32:19	38.39	20.27	125.56	2.96	2.28	760	333		
			10:32:20	38.39	20.27	125.47	2.92	2.24	760	340		
			10:32:21	38.47	20.27	125.45	2.97	2.29	760	332		
			10:32:22	38.48	20.27	125.45	2.92	2.24	760	340		
			10:32:23	38.53	20.27	125.45	2.65	2.00	760	381		
			10:32:24	38.58	20.27	125.39	2.47	1.84	760	414		
			10:32:25	38.57	20.27	125.28	2.55	1.91	760	398		
			10:32:26	38.62	20.27	125.26	2.64	1.99	760	381		
			10:32:27	38.66	20.27	125.22	3.29	2.58	760	295		
			10:32:28	38.64	20.27	125.28	3.75	2.99	760	254		
			10:32:29	38.70	20.27	125.18	2.20	1.60	760	476		
			10:32:30	38.72	20.27	125.28	3.78	3.01	760	252		
			10:32:31	38.73	20.27	126.02	5.38	4.45	760	171		
			10:32:32	38.71	20.28	125.66	2.91	2.23	760	341		
			10:32:33	38.76	20.27	125.20	2.04	1.45	760	522		
			10:32:34	38.81	20.27	125.11	1.95	1.37	760	555		
			10:32:35	38.81	20.27	125.15	2.20	1.59	760	477		
			10:32:36	38.89	20.27	125.49	2.70	2.04	760	372		



**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>102</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>200</b>	<b>Minimum Average Dilution in Profile</b>
<b>380</b>	<b>Detected Plume Average Dilution</b>
<b>599</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:32:37	38.90	20.27	125.47	2.88	2.20	760	345		
			10:32:38	38.93	20.27	125.45	2.48	1.84	760	412		
			10:32:39	39.00	20.27	125.24	2.18	1.57	760	483		
			10:32:40	38.97	20.27	125.05	1.49	0.96	760	796		
			10:32:41	39.03	20.27	125.01	1.71	1.15	760	659		
			10:32:42	39.02	20.27	125.05	1.59	1.04	760	728		
			10:32:43	39.02	20.27	124.99	1.80	1.24	760	613		
			10:32:44	39.03	20.27	125.05	2.33	1.71	760	444		
			10:32:45	38.99	20.27	124.66	1.11	0.61	760	1236		
			10:32:46	38.91	20.27	124.49	1.40	0.88	760	864		
			10:32:47	38.95	20.27	124.61	1.19	0.69	760	1100		
			10:32:48	39.01	20.27	124.92	1.62	1.07	760	710		
			10:32:49	38.96	20.27	125.06	2.23	1.62	760	468		
			10:32:50	38.90	20.27	125.22	2.50	1.86	760	408		
			10:32:51	38.98	20.27	125.30	2.60	1.96	760	388		
			10:32:52	39.04	20.27	125.37	2.31	1.70	760	448		
			10:32:53	39.93	20.27	125.13	2.06	1.47	760	518		
			10:32:54	43.25	20.27	124.94	2.14	1.54	760	494		
			10:32:55	44.08	20.27	124.87	1.23	0.73	760	1045		
			10:32:56	44.05	20.27	124.87	1.58	1.04	760	729		
			10:32:57	44.06	20.27	124.94	1.61	1.07	760	710		
			10:32:58	43.76	20.27	125.05	1.97	1.39	760	547		
			10:32:59	43.31	20.27	125.07	2.02	1.43	760	531		
			10:33:00	43.32	20.27	125.24	2.80	2.14	760	356		
			10:33:01	43.28	20.27	125.30	2.79	2.13	760	358		
			10:33:02	43.23	20.27	125.04	2.03	1.44	760	526		
			10:33:03	43.23	20.27	124.74	0.76	0.30	760	2511		
			10:33:04	43.16	20.27	124.68	0.79	0.33	760	2286		
			10:33:05	43.04	20.27	124.80	0.81	0.34	760	2204		
			10:33:06	42.99	20.27	124.92	1.00	0.52	760	1466		
			10:33:07	42.78	20.27	124.87	1.28	0.77	760	983		
			10:33:08	42.67	20.27	124.78	0.83	0.37	760	2050		
			10:33:09	42.55	20.27	124.80	0.57	0.13	760	5730		
			10:33:10	42.51	20.27	124.63	0.74	0.29	760	2662		
			10:33:11	42.45	20.27	124.76	1.48	0.94	760	804		
			10:33:12	42.34	20.27	124.82	0.89	0.42	760	1798		
			10:33:13	42.18	20.27	124.76	0.75	0.29	760	2597		
			10:33:14	42.07	20.27	124.81	0.82	0.35	760	2152		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>102</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>200</b>	<b>Minimum Average Dilution in Profile</b>
<b>380</b>	<b>Detected Plume Average Dilution</b>
<b>599</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:33:15	41.98	20.27	124.51	0.09	0.09	760	8686		
			10:33:16	42.00	20.26	124.29	0.02	0.02	760	36893		
			10:33:17	42.01	20.26	124.15	0.02	0.02	760	43678		
			10:33:18	41.97	20.26	124.25	0.14	0.14	760	5436		
			10:33:19	41.98	20.26	124.44	0.02	0.02	760	42938		
			10:33:20	41.82	20.26	124.38	0.09	0.09	760	8426		
			10:33:21	41.75	20.27	124.67	0.60	0.16	760	4881		
			10:33:22	41.70	20.27	125.56	2.90	2.22	760	342		
			10:33:23	41.57	20.27	125.87	3.16	2.45	760	310		
			10:33:24	41.48	20.27	125.91	3.61	2.86	760	266		
			10:33:25	41.45	20.27	125.91	3.92	3.14	760	242		
			10:33:26	41.41	20.27	125.93	3.73	2.96	760	256		
			10:33:27	41.33	20.27	125.97	4.55	3.70	760	205		
			10:33:28	41.29	20.27	126.63	5.27	4.35	760	175		
			10:33:29	41.23	20.28	126.26	4.56	3.71	760	205		
			10:33:30	41.27	20.28	126.20	3.89	3.11	760	244		
			10:33:31	41.21	20.28	126.66	6.03	5.03	760	151		
			10:33:32	41.34	20.27	127.21	8.46	7.21	760	105		
			10:33:33	41.28	20.28	127.31	6.59	5.53	760	137		
			10:33:34	41.27	20.28	126.32	4.59	3.74	760	203		
			10:33:35	41.24	20.28	126.28	5.29	4.37	760	174		
			10:33:36	41.23	20.28	126.66	5.94	4.95	760	154		
			10:33:37	41.18	20.28	126.24	4.26	3.45	760	220		
			10:33:38	41.16	20.28	126.30	5.40	4.47	760	170		
			10:33:39	41.20	20.28	126.45	5.56	4.61	760	165		
			10:33:40	41.21	20.28	126.30	4.94	4.05	760	188		
			10:33:41	41.16	20.27	125.61	2.98	2.29	760	331		
			10:33:42	41.21	20.27	125.95	4.65	3.80	760	200		
			10:33:43	41.28	20.27	126.14	4.61	3.75	760	202		
			10:33:44	41.29	20.27	126.32	5.27	4.35	760	175		
			10:33:45	41.32	20.28	126.58	5.63	4.68	760	163		
			10:33:46	41.31	20.28	126.50	6.07	5.06	760	150		
			10:33:47	41.32	20.27	126.69	6.49	5.44	760	140		
			10:33:48	41.36	20.27	126.47	5.51	4.57	760	166		
			10:33:49	41.41	20.27	126.52	5.28	4.36	760	175		
			10:33:50	41.47	20.27	126.54	5.28	4.36	760	174		
			10:33:51	41.49	20.27	126.60	5.27	4.35	760	175		
			10:33:52	41.52	20.27	126.71	5.00	4.11	760	185		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

102	Instantaneous Minimum Dilution in Profile
200	Minimum Average Dilution in Profile
380	Detected Plume Average Dilution
599	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:33:53	41.53	20.27	126.48	5.29	4.36	760	174	238	Plume at 42 ft
			10:33:54	41.61	20.27	126.10	4.75	3.88	760	196		
			10:33:55	41.55	20.27	125.97	3.79	3.02	760	252		
			10:33:56	41.60	20.27	125.61	2.65	2.00	760	380		
			10:33:57	41.64	20.27	125.54	3.09	2.39	760	318		
			10:33:58	41.74	20.27	125.56	4.10	3.30	760	230		
			10:33:59	41.70	20.27	125.66	3.34	2.62	760	291		
			10:34:00	41.80	20.27	125.97	3.30	2.58	760	295		
			10:34:01	41.77	20.27	126.06	3.23	2.52	760	302		
			10:34:02	41.82	20.27	125.76	4.59	3.74	760	203		
			10:34:03	41.83	20.27	125.87	3.74	2.98	760	255		
			10:34:04	41.87	20.27	126.35	5.35	4.42	760	172		
			10:34:05	41.83	20.27	126.58	5.60	4.65	760	163		
			10:34:06	41.92	20.27	126.56	5.71	4.74	760	160		
			10:34:07	41.92	20.27	126.45	5.66	4.70	760	162		
			10:34:08	42.00	20.27	126.20	4.99	4.10	760	186		
			10:34:09	42.03	20.27	125.99	4.57	3.73	760	204		
			10:34:10	42.05	20.27	126.00	4.48	3.64	760	209		
			10:34:11	42.09	20.27	125.95	4.05	3.26	760	233		
			10:34:12	42.15	20.27	126.04	3.36	2.63	760	288		
			10:34:13	42.12	20.27	125.80	3.04	2.35	760	324		
			10:34:14	42.17	20.27	125.83	3.52	2.78	760	274		
			10:34:15	42.16	20.27	125.72	3.51	2.77	760	275		
			10:34:16	42.23	20.27	125.68	3.15	2.44	760	311		
			10:34:17	42.21	20.27	125.57	3.58	2.83	760	269		
			10:34:18	42.25	20.27	125.91	4.22	3.40	760	223		
			10:34:19	42.27	20.27	126.13	4.22	3.41	760	223		
			10:34:20	42.26	20.27	126.27	4.86	3.98	760	191		
			10:34:21	42.28	20.27	126.29	4.24	3.43	760	222		
			10:34:22	42.38	20.27	126.26	4.45	3.61	760	210		
			10:34:23	42.41	20.27	126.21	4.20	3.39	760	224		
			10:34:24	42.46	20.27	126.18	4.76	3.89	760	195		
			10:34:25	42.48	20.27	126.48	4.94	4.05	760	188		
			10:34:26	42.58	20.27	126.64	5.51	4.56	760	167		
			10:34:27	42.59	20.27	126.90	5.89	4.90	760	155		
			10:34:28	42.61	20.27	126.58	5.89	4.91	760	155		
			10:34:29	42.62	20.27	126.35	4.79	3.92	760	194		
			10:34:30	42.71	20.27	126.27	4.87	3.99	760	190		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

102	Instantaneous Minimum Dilution in Profile
200	Minimum Average Dilution in Profile
380	Detected Plume Average Dilution
599	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:34:31	42.70	20.27	126.23	5.31	4.38	760	173		
			10:34:32	42.70	20.27	125.97	4.02	3.23	760	235		
			10:34:33	42.71	20.27	125.66	3.19	2.49	760	306		
			10:34:34	42.71	20.27	125.59	3.30	2.58	760	295		
			10:34:35	42.76	20.27	125.66	3.25	2.54	760	300		
			10:34:36	42.74	20.27	125.59	3.59	2.84	760	267		
			10:34:37	42.75	20.27	125.74	3.87	3.09	760	246		
			10:34:38	42.75	20.27	125.70	3.34	2.62	760	290		
			10:34:39	42.80	20.27	125.74	3.17	2.47	760	308		
			10:34:40	42.84	20.27	125.57	3.05	2.36	760	322		
			10:34:41	42.86	20.27	125.57	3.16	2.46	760	309		
			10:34:42	42.89	20.27	125.56	3.23	2.52	760	302		
			10:34:43	42.85	20.27	125.55	3.38	2.65	760	286		
			10:34:44	42.89	20.27	125.62	3.17	2.46	760	308		
			10:34:45	42.96	20.27	125.76	3.38	2.65	760	287		
			10:34:46	43.00	20.27	125.74	3.93	3.15	760	241		
			10:34:47	43.01	20.27	125.97	4.31	3.49	760	218		
			10:34:48	43.06	20.27	126.02	3.90	3.12	760	244		
			10:34:49	43.04	20.27	126.06	4.56	3.71	760	205		
			10:34:50	43.13	20.27	126.10	4.62	3.77	760	202		
			10:34:51	43.01	20.27	125.74	5.74	4.77	760	159		
			10:34:52	43.05	20.27	125.68	3.80	3.03	760	251		
			10:34:53	42.99	20.27	125.83	3.81	3.04	760	250		
			10:34:54	42.95	20.27	125.89	4.27	3.45	760	220		
			10:34:55	42.84	20.27	126.08	4.79	3.92	760	194		
			10:34:56	42.89	20.27	126.34	4.80	3.92	760	194		
			10:34:57	43.01	20.27	126.24	4.99	4.10	760	185		
			10:34:58	43.14	20.27	126.16	4.91	4.02	760	189		
			10:34:59	43.07	20.27	126.04	4.46	3.63	760	210		
			10:35:00	43.16	20.27	126.02	4.26	3.45	760	221		
			10:35:01	43.06	20.27	125.95	3.85	3.07	760	247		
			10:35:02	43.06	20.27	125.93	3.58	2.83	760	269		
			10:35:03	43.02	20.27	125.78	3.62	2.87	760	265		
			10:35:04	42.97	20.27	125.87	4.00	3.21	760	237		
			10:35:05	42.98	20.27	125.87	3.77	3.01	760	253		
			10:35:06	42.97	20.27	125.85	3.78	3.01	760	252		
			10:35:07	42.93	20.27	125.87	4.24	3.42	760	222		
			10:35:08	42.95	20.27	125.87	3.84	3.06	760	248		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc.	Measured Initial Dye Conc.	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			10:35:09	42.98	20.27	125.85	3.63	2.88	760	264		
			10:35:10	42.97	20.27	125.78	3.65	2.90	760	262		
			10:35:11	42.90	20.27	125.70	3.18	2.47	760	308		
			10:35:12	42.96	20.27	125.63	3.23	2.52	760	302		
			10:35:13	42.95	20.27	125.63	3.13	2.43	760	313		
			10:35:14	42.96	20.27	125.58	3.43	2.70	760	281		
			10:35:15	42.93	20.27	125.66	3.62	2.87	760	265		
			10:35:16	42.90	20.27	125.72	3.53	2.79	760	272		
			10:35:17	42.95	20.27	125.68	3.41	2.68	760	283		
			10:35:18	42.90	20.27	125.61	3.53	2.79	760	272		
			10:35:19	42.93	20.27	125.61	3.26	2.55	760	298		
			10:35:20	42.90	20.27	125.54	3.00	2.31	760	329		
			10:35:21	42.96	20.27	125.60	3.07	2.38	760	320		
			10:35:22	42.95	20.27	125.49	3.29	2.57	760	296		
			10:35:23	42.97	20.27	125.45	2.45	1.82	760	417		
			10:35:24	42.96	20.26	125.30	2.60	1.95	760	389		
			10:35:25	42.99	20.26	125.22	2.45	1.82	760	417		
			10:35:26	42.93	20.26	124.96	1.20	0.70	760	1089		
			10:35:27	42.88	20.26	124.89	1.72	1.16	760	653		
			10:35:28	42.83	20.26	124.82	0.64	0.19	760	3956		
			10:35:29	42.71	20.27	124.74	0.15	0.15	760	4974		
			10:35:30	42.75	20.27	124.51	1.21	0.71	760	1072		
			10:35:31	42.63	20.27	124.46	1.29	0.78	760	977		
			10:35:32	42.63	20.27	124.61	1.72	1.17	760	652		
			10:35:33	42.58	20.27	124.85	1.42	0.90	760	845		
			10:35:34	42.55	20.27	125.05	1.87	1.30	760	586		
			10:35:35	42.52	20.27	125.01	1.84	1.27	760	598		
			10:35:36	42.50	20.27	124.99	1.48	0.95	760	803		
			10:35:37	42.52	20.27	125.01	1.67	1.12	760	681		
			10:35:38	42.45	20.27	125.03	1.72	1.16	760	654		
			10:35:39	42.47	20.27	125.01	1.61	1.07	760	711		
			10:35:40	42.48	20.27	124.97	1.65	1.11	760	687		
			10:35:41	42.52	20.27	124.98	2.12	1.53	760	498	551	Plume at 42 ft
			10:35:42	42.50	20.27	125.11	2.13	1.53	760	495		
			10:35:43	42.47	20.27	125.25	2.45	1.82	760	418		
			10:35:44	42.50	20.27	125.37	2.48	1.85	760	412		
			10:35:45	42.53	20.27	125.28	2.50	1.87	760	407		
			10:35:46	42.51	20.27	125.52	3.42	2.69	760	283		

**TABLE D-5**

Profile PRO-03 on September 21, 2022 (1012-1036 hours PDT) located at MZB (242feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
										Instant. Minimum Dilution	Minimum Plume Avg. Dilution	
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	102	200	
			10:35:47	42.55	20.27	125.51	3.31	2.59	760	294		
			10:35:48	42.54	20.27	125.26	2.63	1.98	760	383		
			10:35:49	42.55	20.27	125.20	2.25	1.64	760	464		
			10:35:50	42.61	20.27	125.24	1.84	1.28	760	596		
			10:35:51	42.63	20.27	124.96	1.15	0.65	760	1163		
			10:35:52	42.68	20.27	124.92	1.44	0.92	760	830		
			10:35:53	42.66	20.27	124.79	1.50	0.97	760	786		
			10:35:54	42.66	20.27	124.39	0.47	0.05	760	16466		
			10:35:55	42.70	20.27	124.51	0.85	0.38	760	1978		
			10:35:56	42.62	20.27	124.76	1.54	1.00	760	758		
			10:35:57	42.56	20.27	124.89	1.22	0.72	760	1055		
			10:35:58	42.59	20.27	124.97	1.82	1.26	760	605		
			10:35:59	42.52	20.27	124.99	2.45	1.82	760	418		
			10:36:00	42.65	20.27	124.96	1.94	1.36	760	559		
			10:36:01	42.67	20.27	125.11	2.32	1.70	760	447		
			10:36:02	42.75	20.27	125.07	1.81	1.25	760	609		
			10:36:03	42.77	20.27	124.97	1.81	1.24	760	612	527	Plume at 42 ft
			10:36:04	42.87	20.27	124.99	1.89	1.32	760	577		
			10:36:05	42.81	20.27	124.89	1.72	1.17	760	652		
			10:36:06	42.82	20.27	125.11	2.37	1.75	760	434		
			10:36:07	42.80	20.27	125.26	2.75	2.09	760	363		
			10:36:08	42.68	20.27	125.24	2.31	1.69	760	450		
			10:36:09	42.89	20.27	125.32	2.09	1.50	760	506		
			10:36:10	42.92	20.27	125.13	1.78	1.22	760	625		
			10:36:11	42.92	20.27	124.90	1.25	0.75	760	1019		
			10:36:12	42.99	20.27	124.95	1.80	1.24	760	614		
			10:36:13	42.93	20.27	125.71	3.37	2.65	760	287		
			10:36:14	43.00	20.27	125.93	4.15	3.34	760	227		
			10:36:15	43.00	20.28	125.91	4.29	3.47	760	219	249	Plume at 43 ft
			10:36:16	43.06	20.27	125.97	4.22	3.41	760	223		
			10:36:17	43.05	20.27	125.97	4.43	3.59	760	212		
			10:36:18	43.00	20.27	125.80	3.52	2.78	760	274		
			10:36:19	43.11	20.27	125.57	3.34	2.62	760	290		
			10:36:20	43.09	20.27	125.67	3.69	2.93	760	259		

**TABLE D-6**

Profile PRO-04 on September 21, 2022 (1128-1143 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>32</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>45</b>	<b>Minimum Average Dilution in Profile</b>
<b>163</b>	<b>Detected Plume Average Dilution</b>
<b>478</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-4 (Acute Zone Boundary 24 ft North of Diffuser)	48 ft	0.49 m/sec 354 deg. (mag.) Ebb tide	11:28:14	1.93	20.03	122.14	2.91	2.24	769	344	540	Plume traces near surface at AZB
			11:28:15	1.93	20.11	122.15	2.83	2.16	769	355		
			11:28:16	1.92	20.14	122.04	2.51	1.87	769	410		
			11:28:17	1.82	20.17	122.46	2.34	1.72	769	446		
			11:28:18	1.84	20.17	122.25	2.20	1.59	769	482		
			11:28:19	1.89	20.15	122.29	2.33	1.72	769	448		
			11:28:20	1.85	20.16	122.44	2.40	1.77	769	434		
			11:28:21	1.85	20.15	122.37	2.38	1.75	769	439		
			11:28:22	1.99	20.16	122.22	2.34	1.72	769	447		
			11:28:23	1.91	20.15	121.50	2.08	1.49	769	518		
			11:28:24	1.95	20.06	121.16	2.11	1.51	769	508		
			11:28:25	1.96	19.57	121.43	2.02	1.43	769	537		
			11:28:26	1.98	19.42	121.64	2.46	1.83	769	420		
			11:28:27	2.03	19.33	122.55	1.94	1.36	769	564		
			11:28:28	2.02	19.22	123.71	1.98	1.39	769	552		
			11:28:29	2.01	19.20	123.60	2.02	1.43	769	538		
			11:28:30	2.00	19.30	123.36	1.99	1.41	769	546		
			11:28:31	2.00	19.53	123.27	1.81	1.25	769	618		
			11:28:32	1.98	19.65	123.32	2.01	1.42	769	541		
			11:28:33	1.96	19.76	123.46	1.89	1.31	769	585		
			11:28:34	1.91	19.80	123.50	1.67	1.12	769	684		
			11:28:35	2.00	19.89	123.61	1.68	1.13	769	682		
			11:28:36	1.96	19.94	123.63	1.94	1.36	769	566		
			11:28:37	1.98	19.96	123.69	1.68	1.13	769	681		
			11:28:38	1.99	20.00	123.69	1.40	0.87	769	880		
			11:28:39	2.01	20.02	123.71	1.47	0.94	769	815		
			11:28:40	1.98	20.04	123.75	1.20	0.70	769	1102		
			11:28:41	1.98	20.06	123.77	1.23	0.73	769	1055		
			11:28:42	2.04	20.08	123.79	1.59	1.05	769	731		
			11:28:43	1.99	20.09	123.82	1.58	1.04	769	739		
			11:28:44	2.02	20.09	123.84	1.53	0.99	769	776		
			11:28:45	1.99	20.11	123.86	1.44	0.91	769	844		
11:28:46	2.01	20.12	123.84	1.29	0.78	769	988					
11:28:47	1.98	20.13	123.83	1.30	0.79	769	971					
11:28:48	2.00	20.13	123.92	1.26	0.76	769	1018					
										890	Plume traces near surface	

**TABLE D-6**

Profile PRO-04 on September 21, 2022 (1128-1143 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>32</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>45</b>	<b>Minimum Average Dilution in Profile</b>
<b>163</b>	<b>Detected Plume Average Dilution</b>
<b>478</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:28:49	2.00	20.14	123.88	1.08	0.59	769	1295		Plume traces near surface
			11:28:50	2.02	20.15	124.03	0.88	0.41	769	1864		
			11:28:51	2.06	20.23	124.15	1.18	0.68	769	1137		
			11:28:52	2.05	20.24	124.13	1.01	0.53	769	1461		
			11:28:53	2.06	20.24	124.15	0.77	0.31	769	2463		
			11:28:54	2.05	20.25	124.15	1.05	0.56	769	1373		
			11:28:55	2.10	20.25	124.11	1.10	0.61	769	1267		
			11:28:56	2.09	20.25	124.15	1.30	0.79	769	974	1283	
			11:28:57	2.10	20.25	124.18	1.16	0.66	769	1159		
			11:28:58	2.13	20.25	124.18	1.15	0.66	769	1172		
			11:28:59	2.11	20.25	124.11	0.91	0.44	769	1753		
			11:29:00	2.08	20.25	124.15	0.78	0.32	769	2409		
			11:29:01	2.10	20.25	124.09	1.06	0.57	769	1343		
			11:29:02	2.12	20.25	124.09	0.76	0.30	769	2551		
			11:29:03	2.13	20.25	124.07	0.56	0.13	769	6107		
			11:29:04	2.07	20.25	124.03	0.46	0.03	769	22830		
			11:29:05	2.10	20.26	124.01	0.73	0.27	769	2803		
			11:29:06	2.11	20.26	123.98	0.62	0.18	769	4240		
			11:29:07	2.07	20.27	124.01	0.86	0.39	769	1957		
			11:29:08	2.06	20.27	123.96	0.70	0.25	769	3042		
			11:29:09	2.07	20.27	123.96	0.70	0.25	769	3030		
			11:29:10	2.05	20.27	123.98	0.55	0.12	769	6506		
			11:29:11	2.06	20.27	124.01	0.50	0.07	769	10857		
			11:29:12	2.01	20.27	124.01	0.59	0.15	769	5171		
			11:29:13	2.03	20.27	123.98	0.29	0.29	769	2609		
			11:29:14	2.04	20.27	124.07	0.41	0.41	769	1892		
			11:29:15	2.06	20.27	124.03	0.65	0.20	769	3795		
			11:29:16	2.08	20.26	123.99	0.61	0.17	769	4632		
			11:29:17	2.07	20.26	124.03	0.52	0.09	769	8593		
			11:29:18	2.05	20.27	124.03	0.41	0.41	769	1895		
			11:29:19	1.95	20.26	124.01	0.37	0.37	769	2058		
			11:29:20	2.05	20.26	124.07	0.76	0.31	769	2505		
			11:29:21	2.04	20.25	124.07	0.52	0.09	769	8869		
			11:29:22	2.05	20.25	124.09	0.74	0.29	769	2694		
			11:29:23	2.06	20.26	124.07	0.77	0.32	769	2428		



**TABLE D-6**

Profile PRO-04 on September 21, 2022 (1128-1143 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>32</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>45</b>	<b>Minimum Average Dilution in Profile</b>
<b>163</b>	<b>Detected Plume Average Dilution</b>
<b>478</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:29:24	2.06	20.26	124.03	0.36	0.36	769	2116		
			11:29:25	2.10	20.25	124.09	0.51	0.08	769	9583		
			11:29:26	2.04	20.25	124.06	0.71	0.26	769	2978		
			11:29:27	2.05	20.26	124.07	0.31	0.31	769	2449		
			11:29:28	2.01	20.26	124.09	0.45	0.03	769	28624		
			11:29:29	2.25	20.25	124.13	0.52	0.09	769	8971		
			11:29:30	2.74	20.25	124.15	0.53	0.09	769	8175		
			11:29:31	3.49	20.25	124.15	0.67	0.22	769	3451		
			11:29:32	6.83	20.24	124.20	0.47	0.04	769	17231		
			11:29:33	7.93	20.24	124.22	0.64	0.19	769	3953		
			11:29:34	8.05	20.24	124.24	0.66	0.22	769	3538		
			11:29:35	8.14	20.24	124.22	0.19	0.19	769	4114		
			11:29:36	8.16	20.24	124.14	0.44	0.02	769	39060		
			11:29:37	8.20	20.25	124.15	0.23	0.23	769	3338		
			11:29:38	8.21	20.25	124.18	0.41	0.41	769	1892		
			11:29:39	8.27	20.25	124.13	0.47	0.05	769	16597		
			11:29:40	8.22	20.25	124.18	0.18	0.18	769	4377		
			11:29:41	8.22	20.24	124.22	0.32	0.32	769	2394		
			11:29:42	8.22	20.24	124.23	0.31	0.31	769	2444		
			11:29:43	8.19	20.24	124.24	0.61	0.17	769	4605		
			11:29:44	8.20	20.24	124.18	0.28	0.28	769	2786		
			11:29:45	8.21	20.24	124.22	0.42	0.42	769	1825		
			11:29:46	8.18	20.24	124.24	0.27	0.27	769	2845		
			11:29:47	8.21	20.24	124.24	0.39	0.39	769	1954		
			11:29:48	8.07	20.24	124.21	0.27	0.27	769	2894		
			11:29:49	8.20	20.24	124.18	0.28	0.28	769	2790		
			11:29:50	8.10	20.24	124.24	0.58	0.14	769	5542		
			11:29:51	8.12	20.24	124.26	0.59	0.15	769	5061		
			11:29:52	8.24	20.24	124.22	0.49	0.06	769	12325		
			11:29:53	8.08	20.24	124.22	0.49	0.06	769	12727		
			11:29:54	8.18	20.24	124.18	0.53	0.10	769	7733		
			11:29:55	7.98	20.24	124.22	0.39	0.39	769	1971		
			11:29:56	8.03	20.24	124.22	0.20	0.20	769	3828		
			11:29:57	8.08	20.24	124.20	0.35	0.35	769	2193		
			11:29:58	8.07	20.24	124.24	0.34	0.34	769	2268		

**TABLE D-6**

Profile PRO-04 on September 21, 2022 (1128-1143 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

32	Instantaneous Minimum Dilution in Profile
45	Minimum Average Dilution in Profile
163	Detected Plume Average Dilution
478	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:29:59	8.18	20.24	124.25	0.56	0.13	769	6055		
			11:30:00	7.89	20.24	124.26	0.43	0.01	769	83674		
			11:30:01	8.08	20.24	124.20	0.23	0.23	769	3323		
			11:30:02	7.87	20.24	124.22	0.44	0.02	769	42132		
			11:30:03	8.11	20.24	124.18	0.47	0.04	769	19156		
			11:30:04	8.02	20.24	124.22	0.32	0.32	769	2368		
			11:30:05	8.17	20.25	124.22	0.16	0.16	769	4800		
			11:30:06	8.13	20.25	124.20	0.39	0.39	769	1960		
			11:30:07	8.19	20.25	124.20	0.34	0.34	769	2258		
			11:30:08	8.01	20.25	124.18	0.53	0.10	769	7846		
			11:30:09	8.10	20.25	124.20	0.43	0.00	769	160405		
			11:30:10	7.97	20.24	124.24	0.39	0.39	769	1975		
			11:30:11	7.97	20.24	124.20	0.30	0.30	769	2537		
			11:30:12	7.96	20.24	124.24	0.43	0.01	769	141825		
			11:30:13	7.99	20.24	124.22	0.32	0.32	769	2370		
			11:30:14	7.80	20.24	124.24	0.32	0.32	769	2394		
			11:30:15	8.11	20.24	124.18	0.14	0.14	769	5501		
			11:30:16	7.82	20.25	124.15	0.35	0.35	769	2196		
			11:30:17	8.14	20.25	124.09	0.27	0.27	769	2840	3101	Plume traces?
			11:30:18	7.81	20.26	124.09	0.35	0.35	769	2204		
			11:30:19	8.11	20.26	124.07	0.37	0.37	769	2104		
			11:30:20	7.79	20.27	123.96	0.13	0.13	769	6027		
			11:30:21	8.06	20.27	123.96	0.34	0.34	769	2276		
			11:30:22	7.84	20.28	123.98	0.43	0.01	769	149233		
			11:30:23	7.94	20.28	123.90	0.25	0.25	769	3111		
			11:30:24	8.00	20.28	123.97	0.17	0.17	769	4638		
			11:30:25	7.82	20.26	124.18	0.33	0.33	769	2352		
			11:30:26	8.06	20.25	124.18	0.49	0.06	769	12842		
			11:30:27	7.87	20.25	124.20	0.19	0.19	769	3999		
			11:30:28	8.16	20.25	124.18	0.50	0.07	769	10885		
			11:30:29	8.09	20.25	124.22	0.57	0.14	769	5682		
			11:30:30	8.62	20.25	124.24	0.35	0.35	769	2188		
			11:30:31	9.12	20.25	124.13	0.61	0.17	769	4496		
			11:30:32	9.24	20.25	124.18	0.43	0.00	769	211977		
			11:30:33	10.14	20.26	124.03	0.10	0.10	769	7675		

**TABLE D-6**

Profile PRO-04 on September 21, 2022 (1128-1143 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>32</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>45</b>	<b>Minimum Average Dilution in Profile</b>
<b>163</b>	<b>Detected Plume Average Dilution</b>
<b>478</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:30:34	12.91	20.27	123.91	0.02	0.02	769	40262		
			11:30:35	13.30	20.27	123.96	0.02	0.02	769	41123		
			11:30:36	13.08	20.27	123.96	0.02	0.02	769	39036		
			11:30:37	13.22	20.27	124.03	0.02	0.02	769	36971		
			11:30:38	13.22	20.27	123.99	0.02	0.02	769	40688		
			11:30:39	13.22	20.26	124.03	0.02	0.02	769	40262		
			11:30:40	13.37	20.27	123.99	0.02	0.02	769	39436		
			11:30:41	13.41	20.26	124.07	0.02	0.02	769	39845		
			11:30:42	13.68	20.26	124.05	0.02	0.02	769	38450		
			11:30:43	13.77	20.26	124.03	0.02	0.02	769	43693		
			11:30:44	13.99	20.26	124.10	0.02	0.02	769	40688		
			11:30:45	14.24	20.25	124.09	0.02	0.02	769	38450		
			11:30:46	14.32	20.25	124.09	0.02	0.02	769	38838		
			11:30:47	14.39	20.25	124.13	0.02	0.02	769	45235		
			11:30:48	14.39	20.25	124.18	0.02	0.02	769	42486		
			11:30:49	14.47	20.25	124.15	0.02	0.02	769	41568		
			11:30:50	14.38	20.25	124.15	0.02	0.02	769	39036		
			11:30:51	14.38	20.25	124.18	0.02	0.02	769	41568		
			11:30:52	14.46	20.25	124.11	0.02	0.02	769	41123		
			11:30:53	14.35	20.25	124.13	0.02	0.02	769	39436		
			11:30:54	14.36	20.25	124.10	0.02	0.02	769	43446		
			11:30:55	14.46	20.25	124.07	0.02	0.02	769	41568		
			11:30:56	14.39	20.26	124.09	0.02	0.02	769	44451		
			11:30:57	14.38	20.26	124.07	0.02	0.02	769	39436		
			11:30:58	14.54	20.26	124.09	0.02	0.02	769	40688		
			11:30:59	14.50	20.26	124.11	0.02	0.02	769	38838		
			11:31:00	14.36	20.26	124.07	0.02	0.02	769	39845		
			11:31:01	14.45	20.26	124.09	0.02	0.02	769	41568		
			11:31:02	14.44	20.26	124.11	0.02	0.02	769	44451		
			11:31:03	14.29	20.26	124.08	0.02	0.02	769	40262		
			11:31:04	14.35	20.26	124.09	0.02	0.02	769	40262		
			11:31:05	14.36	20.26	124.11	0.02	0.02	769	41123		
			11:31:06	14.15	20.26	124.15	0.02	0.02	769	41123		
			11:31:07	14.12	20.25	124.13	0.02	0.02	769	39436		
			11:31:08	14.05	20.25	124.11	0.02	0.02	769	39036		

**TABLE D-6**

Profile PRO-04 on September 21, 2022 (1128-1143 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>32</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>45</b>	<b>Minimum Average Dilution in Profile</b>
<b>163</b>	<b>Detected Plume Average Dilution</b>
<b>478</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:31:09	13.71	20.25	124.15	0.02	0.02	769	42022		
			11:31:10	13.52	20.25	124.13	0.02	0.02	769	39845		
			11:31:11	13.32	20.25	124.11	0.02	0.02	769	43446		
			11:31:12	13.03	20.26	124.11	0.02	0.02	769	40688		
			11:31:13	12.91	20.25	124.18	0.02	0.02	769	39639		
			11:31:14	12.71	20.25	124.24	0.02	0.02	769	42022		
			11:31:15	12.55	20.25	124.20	0.02	0.02	769	40688		
			11:31:16	12.52	20.25	124.24	0.02	0.02	769	40262		
			11:31:17	12.41	20.25	124.23	0.02	0.02	769	41568		
			11:31:18	12.38	20.25	124.18	0.02	0.02	769	39845		
			11:31:19	12.42	20.25	124.18	0.02	0.02	769	42022		
			11:31:20	12.41	20.24	124.22	0.02	0.02	769	43693		
			11:31:21	12.47	20.24	124.20	0.02	0.02	769	40262		
			11:31:22	12.50	20.25	124.24	0.02	0.02	769	41568		
			11:31:23	12.50	20.25	124.24	0.02	0.02	769	42022		
			11:31:24	12.50	20.25	124.20	0.02	0.02	769	41123		
			11:31:25	12.54	20.25	124.24	0.02	0.02	769	45774		
			11:31:26	12.66	20.25	124.22	0.02	0.02	769	42486		
			11:31:27	12.98	20.24	124.24	0.02	0.02	769	42961		
			11:31:28	13.09	20.24	124.24	0.02	0.02	769	42961		
			11:31:29	13.41	20.24	124.22	0.02	0.02	769	42022		
			11:31:30	13.83	20.24	124.20	0.02	0.02	769	42486		
			11:31:31	14.99	20.25	124.20	0.02	0.02	769	41123		
			11:31:32	18.26	20.24	124.20	0.02	0.02	769	42486		
			11:31:33	19.09	20.24	124.24	0.02	0.02	769	43446		
			11:31:34	18.96	20.24	124.25	0.02	0.02	769	37696		
			11:31:35	18.89	20.24	124.27	0.02	0.02	769	46325		
			11:31:36	18.96	20.24	124.24	0.02	0.02	769	39845		
			11:31:37	18.94	20.24	124.20	0.02	0.02	769	43693		
			11:31:38	19.12	20.24	124.26	0.02	0.02	769	38643		
			11:31:39	19.19	20.24	124.22	0.02	0.02	769	40262		
			11:31:40	19.22	20.24	124.22	0.02	0.02	769	40262		
			11:31:41	19.23	20.25	124.20	0.02	0.02	769	40262		
			11:31:42	19.12	20.25	124.12	0.02	0.02	769	39639		
			11:31:43	18.98	20.25	124.15	0.02	0.02	769	39845		

**TABLE D-6**

Profile PRO-04 on September 21, 2022 (1128-1143 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>32</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>45</b>	<b>Minimum Average Dilution in Profile</b>
<b>163</b>	<b>Detected Plume Average Dilution</b>
<b>478</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:31:44	18.96	20.25	124.11	0.02	0.02	769	39436		
			11:31:45	18.89	20.26	124.09	0.02	0.02	769	42961		
			11:31:46	18.87	20.26	124.09	0.02	0.02	769	43446		
			11:31:47	19.03	20.26	124.05	0.02	0.02	769	38838		
			11:31:48	19.10	20.26	124.07	0.02	0.02	769	42961		
			11:31:49	19.18	20.26	124.09	0.02	0.02	769	42486		
			11:31:50	19.32	20.26	124.05	0.02	0.02	769	41123		
			11:31:51	19.29	20.26	124.11	0.02	0.02	769	39436		
			11:31:52	19.20	20.26	124.12	0.02	0.02	769	43943		
			11:31:53	19.10	20.26	124.09	0.02	0.02	769	41123		
			11:31:54	18.88	20.25	124.13	0.02	0.02	769	40262		
			11:31:55	18.69	20.25	124.15	0.02	0.02	769	39845		
			11:31:56	18.68	20.26	124.11	0.02	0.02	769	39845		
			11:31:57	18.64	20.26	124.11	0.02	0.02	769	41123		
			11:31:58	18.71	20.26	124.05	0.02	0.02	769	39639		
			11:31:59	18.80	20.27	124.05	0.02	0.02	769	42961		
			11:32:00	18.86	20.27	124.03	0.02	0.02	769	42961		
			11:32:01	18.98	20.27	124.03	0.02	0.02	769	43943		
			11:32:02	19.07	20.27	123.94	0.02	0.02	769	42961		
			11:32:03	19.00	20.27	123.99	0.02	0.02	769	42022		
			11:32:04	18.99	20.27	124.01	0.02	0.02	769	43693		
			11:32:05	18.93	20.27	123.99	0.02	0.02	769	43446		
			11:32:06	18.82	20.27	124.03	0.02	0.02	769	42022		
			11:32:07	18.76	20.27	124.03	0.02	0.02	769	47469		
			11:32:08	18.76	20.27	124.05	0.02	0.02	769	42961		
			11:32:09	18.77	20.27	124.01	0.02	0.02	769	44709		
			11:32:10	18.86	20.27	124.11	0.02	0.02	769	40688		
			11:32:11	18.89	20.26	124.03	0.02	0.02	769	41568		
			11:32:12	18.80	20.26	124.09	0.02	0.02	769	42486		
			11:32:13	18.77	20.26	124.05	0.02	0.02	769	39639		
			11:32:14	18.60	20.27	124.07	0.02	0.02	769	42022		
			11:32:15	18.34	20.26	124.07	0.02	0.02	769	40262		
			11:32:16	18.23	20.27	124.03	0.02	0.02	769	43943		
			11:32:17	18.20	20.27	124.09	0.02	0.02	769	42961		
			11:32:18	18.41	20.27	124.03	0.02	0.02	769	41568		

**TABLE D-6**

Profile PRO-04 on September 21, 2022 (1128-1143 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>32</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>45</b>	<b>Minimum Average Dilution in Profile</b>
<b>163</b>	<b>Detected Plume Average Dilution</b>
<b>478</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:32:19	20.65	20.27	124.05	0.02	0.02	769	39436		
			11:32:20	23.64	20.26	124.11	0.02	0.02	769	44451		
			11:32:21	24.32	20.26	124.08	0.02	0.02	769	40262		
			11:32:22	24.53	20.27	124.05	0.02	0.02	769	39436		
			11:32:23	24.58	20.27	124.03	0.02	0.02	769	39845		
			11:32:24	24.67	20.26	124.11	0.02	0.02	769	44971		
			11:32:25	24.57	20.26	124.09	0.02	0.02	769	42486		
			11:32:26	24.37	20.26	124.07	0.02	0.02	769	46325		
			11:32:27	24.18	20.26	124.11	0.02	0.02	769	42486		
			11:32:28	24.02	20.26	124.09	0.02	0.02	769	41123		
			11:32:29	23.71	20.26	124.09	0.02	0.02	769	43943		
			11:32:30	23.61	20.26	124.11	0.02	0.02	769	41568		
			11:32:31	23.62	20.26	124.08	0.02	0.02	769	42022		
			11:32:32	23.58	20.26	124.03	0.02	0.02	769	43693		
			11:32:33	23.59	20.27	124.07	0.02	0.02	769	39036		
			11:32:34	23.61	20.26	124.11	0.02	0.02	769	42022		
			11:32:35	23.45	20.26	124.09	0.02	0.02	769	38069		
			11:32:36	23.36	20.26	124.07	0.02	0.02	769	44709		
			11:32:37	23.21	20.26	124.09	0.02	0.02	769	40262		
			11:32:38	23.06	20.26	124.05	0.02	0.02	769	41568		
			11:32:39	23.15	20.26	124.05	0.02	0.02	769	43943		
			11:32:40	23.06	20.27	124.01	0.02	0.02	769	41568		
			11:32:41	22.92	20.27	124.03	0.02	0.02	769	40262		
			11:32:42	22.89	20.27	124.03	0.02	0.02	769	42022		
			11:32:43	22.85	20.27	124.05	0.02	0.02	769	43693		
			11:32:44	22.76	20.27	124.03	0.02	0.02	769	42486		
			11:32:45	22.75	20.27	124.07	0.02	0.02	769	42486		
			11:32:46	22.69	20.27	124.05	0.02	0.02	769	41123		
			11:32:47	22.59	20.27	123.96	0.02	0.02	769	44451		
			11:32:48	22.53	20.27	124.01	0.02	0.02	769	42022		
			11:32:49	22.47	20.27	123.99	0.02	0.02	769	41568		
			11:32:50	22.49	20.27	123.99	0.02	0.02	769	44195		
			11:32:51	22.50	20.27	123.99	0.02	0.02	769	43943		
			11:32:52	22.41	20.27	123.96	0.02	0.02	769	40262		
			11:32:53	22.46	20.27	123.99	0.02	0.02	769	43693		

**TABLE D-6**

Profile PRO-04 on September 21, 2022 (1128-1143 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>32</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>45</b>	<b>Minimum Average Dilution in Profile</b>
<b>163</b>	<b>Detected Plume Average Dilution</b>
<b>478</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:32:54	22.63	20.27	124.03	0.02	0.02	769	42961		
			11:32:55	22.88	20.27	124.03	0.02	0.02	769	39639		
			11:32:56	23.41	20.27	124.05	0.02	0.02	769	42486		
			11:32:57	23.94	20.27	124.05	0.02	0.02	769	40688		
			11:32:58	24.48	20.26	124.03	0.02	0.02	769	44971		
			11:32:59	25.01	20.26	124.03	0.02	0.02	769	40262		
			11:33:00	25.31	20.26	124.10	0.02	0.02	769	38838		
			11:33:01	25.54	20.26	124.09	0.02	0.02	769	41568		
			11:33:02	25.79	20.26	124.07	0.09	0.09	769	9005		
			11:33:03	25.85	20.26	124.03	0.02	0.02	769	42961		
			11:33:04	25.88	20.26	124.09	0.02	0.02	769	43693		
			11:33:05	25.83	20.26	124.09	0.02	0.02	769	45235		
			11:33:06	25.84	20.26	124.07	0.02	0.02	769	42486		
			11:33:07	25.80	20.26	124.09	0.02	0.02	769	38838		
			11:33:08	25.76	20.26	124.07	0.02	0.02	769	40262		
			11:33:09	25.84	20.26	124.07	0.02	0.02	769	42961		
			11:33:10	25.78	20.26	124.08	0.02	0.02	769	43693		
			11:33:11	25.61	20.26	124.03	0.02	0.02	769	41123		
			11:33:12	25.53	20.26	124.05	0.07	0.07	769	11177		
			11:33:13	25.82	20.26	124.07	0.02	0.02	769	40688		
			11:33:14	27.51	20.26	124.11	0.02	0.02	769	41568		
			11:33:15	30.22	20.26	124.07	0.02	0.02	769	38838		
			11:33:16	30.44	20.26	124.05	0.02	0.02	769	44971		
			11:33:17	30.30	20.26	124.13	0.02	0.02	769	41568		
			11:33:18	30.18	20.26	124.09	0.02	0.02	769	42961		
			11:33:19	30.20	20.26	124.06	0.02	0.02	769	42486		
			11:33:20	30.10	20.26	124.13	0.02	0.02	769	43693		
			11:33:21	30.12	20.26	124.07	0.02	0.02	769	44195		
			11:33:22	30.12	20.26	124.11	0.02	0.02	769	37330		
			11:33:23	29.97	20.26	124.11	0.02	0.02	769	38643		
			11:33:24	29.86	20.26	124.11	0.02	0.02	769	39845		
			11:33:25	29.70	20.26	124.09	0.02	0.02	769	42486		
			11:33:26	29.43	20.26	124.13	0.02	0.02	769	41568		
			11:33:27	29.03	20.26	124.11	0.02	0.02	769	40688		
			11:33:28	28.73	20.26	124.11	0.02	0.02	769	42022		

**TABLE D-6**

Profile PRO-04 on September 21, 2022 (1128-1143 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>32</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>45</b>	<b>Minimum Average Dilution in Profile</b>
<b>163</b>	<b>Detected Plume Average Dilution</b>
<b>478</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:33:29	28.60	20.26	124.20	0.02	0.02	769	40688		
			11:33:30	28.62	20.26	124.13	0.02	0.02	769	41123		
			11:33:31	28.79	20.26	124.09	0.02	0.02	769	43202		
			11:33:32	28.92	20.26	124.13	0.02	0.02	769	44451		
			11:33:33	29.05	20.26	124.15	0.02	0.02	769	39845		
			11:33:34	29.06	20.25	124.13	0.02	0.02	769	43693		
			11:33:35	28.98	20.26	124.20	0.02	0.02	769	41123		
			11:33:36	28.86	20.25	124.20	0.02	0.02	769	40262		
			11:33:37	28.70	20.25	124.24	0.02	0.02	769	41568		
			11:33:38	28.34	20.25	124.22	0.02	0.02	769	39845		
			11:33:39	28.18	20.25	124.24	0.02	0.02	769	45774		
			11:33:40	28.03	20.25	124.24	0.02	0.02	769	41568		
			11:33:41	27.96	20.25	124.20	0.02	0.02	769	40688		
			11:33:42	27.79	20.25	124.22	0.02	0.02	769	40688		
			11:33:43	27.76	20.25	124.22	0.02	0.02	769	40688		
			11:33:44	27.69	20.25	124.13	0.02	0.02	769	40688		
			11:33:45	27.64	20.25	124.15	0.02	0.02	769	41568		
			11:33:46	27.56	20.25	124.13	0.02	0.02	769	45235		
			11:33:47	27.54	20.26	124.11	0.02	0.02	769	43693		
			11:33:48	27.48	20.27	123.99	0.02	0.02	769	41123		
			11:33:49	27.43	20.27	124.09	0.02	0.02	769	42022		
			11:33:50	27.39	20.27	124.09	0.02	0.02	769	41568		
			11:33:51	27.26	20.27	124.07	0.02	0.02	769	40688		
			11:33:52	27.35	20.26	124.24	0.02	0.02	769	39845		
			11:33:53	27.25	20.25	124.20	0.02	0.02	769	42022		
			11:33:54	27.30	20.25	124.20	0.02	0.02	769	42486		
			11:33:55	27.35	20.25	124.18	0.02	0.02	769	42022		
			11:33:56	27.28	20.25	124.25	0.02	0.02	769	44195		
			11:33:57	27.29	20.25	124.23	0.02	0.02	769	42486		
			11:33:58	27.28	20.25	124.22	0.02	0.02	769	39845		
			11:33:59	27.16	20.25	124.15	0.02	0.02	769	42722		
			11:34:00	26.96	20.25	124.24	0.02	0.02	769	39845		
			11:34:01	27.01	20.25	124.22	0.02	0.02	769	42022		
			11:34:02	27.76	20.25	124.15	0.02	0.02	769	42022		
			11:34:03	30.39	20.25	124.20	0.02	0.02	769	41123		



**TABLE D-6**

Profile PRO-04 on September 21, 2022 (1128-1143 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>32</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>45</b>	<b>Minimum Average Dilution in Profile</b>
<b>163</b>	<b>Detected Plume Average Dilution</b>
<b>478</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:34:04	32.47	20.25	124.22	0.02	0.02	769	41568		
			11:34:05	32.56	20.25	124.23	0.02	0.02	769	38838		
			11:34:06	32.42	20.25	124.23	0.02	0.02	769	46890		
			11:34:07	32.20	20.25	124.20	0.02	0.02	769	44709		
			11:34:08	32.08	20.25	124.22	0.02	0.02	769	42022		
			11:34:09	31.97	20.25	124.19	0.02	0.02	769	42022		
			11:34:10	31.78	20.25	124.24	0.02	0.02	769	45774		
			11:34:11	31.59	20.25	124.22	0.02	0.02	769	49295		
			11:34:12	31.43	20.25	124.24	0.02	0.02	769	37696		
			11:34:13	31.24	20.25	124.13	0.02	0.02	769	45774		
			11:34:14	31.09	20.27	123.96	0.02	0.02	769	42486		
			11:34:15	30.94	20.28	123.96	0.02	0.02	769	39436		
			11:34:16	30.80	20.28	123.99	0.02	0.02	769	42022		
			11:34:17	30.74	20.27	124.01	0.02	0.02	769	44195		
			11:34:18	30.46	20.27	124.03	0.02	0.02	769	42486		
			11:34:19	30.19	20.27	123.99	0.02	0.02	769	38643		
			11:34:20	30.05	20.27	124.03	0.02	0.02	769	40688		
			11:34:21	29.98	20.27	124.09	0.02	0.02	769	41568		
			11:34:22	30.12	20.26	124.05	0.02	0.02	769	42961		
			11:34:23	30.53	20.27	124.07	0.02	0.02	769	40688		
			11:34:24	31.07	20.27	124.05	0.02	0.02	769	43446		
			11:34:25	31.87	20.27	124.05	0.02	0.02	769	38450		
			11:34:26	32.61	20.28	123.96	0.02	0.02	769	42961		
			11:34:27	33.29	20.28	123.99	0.02	0.02	769	43943		
			11:34:28	34.07	20.28	123.99	0.02	0.02	769	38069		
			11:34:29	34.79	20.28	123.94	0.02	0.02	769	41123		
			11:34:30	35.35	20.28	124.01	0.02	0.02	769	40262		
			11:34:31	36.46	20.28	124.01	0.18	0.18	769	4384		
			11:34:32	38.93	20.28	123.96	0.02	0.02	769	38450		
			11:34:33	40.99	20.28	123.99	0.02	0.02	769	41123		
			11:34:34	41.75	20.28	125.97	3.14	2.43	769	316		
			11:34:35	42.18	20.29	127.88	8.36	7.12	769	108	261	Plume at 42 ft
			11:34:36	42.48	20.29	126.30	2.82	2.15	769	358		
			11:34:37	42.67	20.28	125.44	0.83	0.37	769	2078		
			11:34:38	42.81	20.28	124.47	0.08	0.08	769	10240		

**TABLE D-6**

Profile PRO-04 on September 21, 2022 (1128-1143 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>32</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>45</b>	<b>Minimum Average Dilution in Profile</b>
<b>163</b>	<b>Detected Plume Average Dilution</b>
<b>478</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:34:39	42.84	20.28	124.13	0.02	0.02	769	42022		Plume at 42 ft
			11:34:40	42.77	20.28	124.18	0.02	0.02	769	41568		
			11:34:41	42.79	20.28	124.68	0.13	0.13	769	6127		
			11:34:42	42.74	20.28	124.77	1.98	1.40	769	550		
			11:34:43	42.75	20.28	125.22	1.73	1.18	769	654	575	
			11:34:44	42.57	20.28	125.57	2.07	1.48	769	520		
			11:34:45	41.05	20.28	125.20	1.01	0.53	769	1457		
			11:34:46	39.26	20.28	125.65	1.89	1.31	769	585		
			11:34:47	38.83	20.28	125.60	2.33	1.71	769	450		
			11:34:48	38.95	20.28	125.63	1.18	0.68	769	1131		
			11:34:49	38.90	20.28	124.80	0.02	0.02	769	44451		
			11:34:50	38.77	20.28	124.31	0.13	0.13	769	5843		
			11:34:51	38.61	20.27	124.05	0.08	0.08	769	9961		
			11:34:52	38.35	20.27	124.03	0.02	0.02	769	42961		
			11:34:53	37.94	20.27	124.74	0.02	0.02	769	42961		
			11:34:54	37.56	20.28	126.33	1.73	1.17	769	655		
			11:34:55	36.96	20.28	126.02	1.35	0.83	769	925		
			11:34:56	36.37	20.27	124.23	0.02	0.02	769	40262		
			11:34:57	35.67	20.27	124.07	0.02	0.02	769	40688		
			11:34:58	35.13	20.27	124.18	0.02	0.02	769	43693		
			11:34:59	34.77	20.27	124.09	0.02	0.02	769	39845		
			11:35:00	34.48	20.27	124.07	0.02	0.02	769	41123		
			11:35:01	34.32	20.27	124.07	0.02	0.02	769	40688		
			11:35:02	34.20	20.26	124.07	0.02	0.02	769	43943		
			11:35:03	34.04	20.27	123.96	0.02	0.02	769	40688		
			11:35:04	33.75	20.29	123.96	0.02	0.02	769	46325		
			11:35:05	33.51	20.27	124.08	0.02	0.02	769	41568		
			11:35:06	33.00	20.27	124.03	0.02	0.02	769	45235		
			11:35:07	32.46	20.26	124.09	0.02	0.02	769	44451		
			11:35:08	31.92	20.26	124.11	0.02	0.02	769	40262		
			11:35:09	31.41	20.26	124.09	0.02	0.02	769	39639		
			11:35:10	31.09	20.26	124.05	0.02	0.02	769	48981		
			11:35:11	30.91	20.27	123.90	0.02	0.02	769	42022		
			11:35:12	30.81	20.28	123.92	0.02	0.02	769	42486		
			11:35:13	30.47	20.28	123.96	0.02	0.02	769	40262		

**TABLE D-6**

Profile PRO-04 on September 21, 2022 (1128-1143 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>32</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>45</b>	<b>Minimum Average Dilution in Profile</b>
<b>163</b>	<b>Detected Plume Average Dilution</b>
<b>478</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:35:14	30.12	20.27	124.07	0.02	0.02	769	40688		
			11:35:15	29.68	20.28	123.97	0.02	0.02	769	42022		
			11:35:16	29.30	20.28	123.99	0.02	0.02	769	41568		
			11:35:17	28.89	20.27	123.99	0.02	0.02	769	41123		
			11:35:18	28.44	20.27	124.05	0.02	0.02	769	40052		
			11:35:19	28.05	20.27	124.07	0.02	0.02	769	44195		
			11:35:20	27.75	20.27	124.05	0.02	0.02	769	39639		
			11:35:21	27.73	20.27	124.05	0.02	0.02	769	43693		
			11:35:22	28.17	20.27	124.03	0.02	0.02	769	39436		
			11:35:23	28.79	20.27	124.05	0.02	0.02	769	42486		
			11:35:24	29.56	20.27	124.07	0.02	0.02	769	41568		
			11:35:25	30.42	20.26	124.08	0.02	0.02	769	40688		
			11:35:26	31.22	20.26	124.11	0.02	0.02	769	45235		
			11:35:27	32.01	20.26	124.11	0.02	0.02	769	42961		
			11:35:28	32.71	20.27	123.92	0.02	0.02	769	41123		
			11:35:29	33.37	20.29	123.88	0.02	0.02	769	44451		
			11:35:30	33.94	20.29	123.90	0.02	0.02	769	42722		
			11:35:31	34.66	20.29	123.88	0.02	0.02	769	41568		
			11:35:32	35.17	20.29	123.90	0.02	0.02	769	40688		
			11:35:33	35.84	20.29	123.94	0.02	0.02	769	45235		
			11:35:34	36.29	20.28	123.96	0.02	0.02	769	42022		
			11:35:35	36.80	20.27	124.08	0.07	0.07	769	11478		
			11:35:36	37.21	20.27	124.05	0.02	0.02	769	39639		
			11:35:37	37.59	20.26	124.11	0.02	0.02	769	45774		
			11:35:38	37.88	20.26	124.13	0.02	0.02	769	44971		
			11:35:39	38.03	20.26	124.07	0.02	0.02	769	43202		
			11:35:40	38.17	20.26	124.11	0.02	0.02	769	44709		
			11:35:41	38.21	20.26	124.13	0.02	0.02	769	42022		
			11:35:42	38.47	20.26	124.07	0.02	0.02	769	42022		
			11:35:43	38.56	20.26	124.09	0.02	0.02	769	40262		
			11:35:44	38.69	20.26	124.21	0.30	0.30	769	2568		
			11:35:45	38.84	20.26	124.32	0.55	0.11	769	6915		
			11:35:46	38.90	20.26	126.86	8.35	7.12	769	108		
			11:35:47	39.00	20.29	136.37	25.83	22.80	769	34		
			11:35:48	38.99	20.32	135.17	22.51	19.82	769	39		

**TABLE D-6**

Profile PRO-04 on September 21, 2022 (1128-1143 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>32</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>45</b>	<b>Minimum Average Dilution in Profile</b>
<b>163</b>	<b>Detected Plume Average Dilution</b>
<b>478</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:35:49	39.08	20.31	134.90	18.98	16.65	769	46	45	Diffuser Port Plume at 39 ft
			11:35:50	38.99	20.31	132.09	18.97	16.64	769	46		
			11:35:51	38.91	20.30	133.18	16.83	14.72	769	52		
			11:35:52	38.74	20.31	134.92	16.89	14.78	769	52		
			11:35:53	38.72	20.30	130.37	8.92	7.62	769	101		
			11:35:54	38.37	20.28	125.63	3.10	2.41	769	320		
			11:35:55	37.88	20.27	124.57	1.09	0.60	769	1274		
			11:35:56	37.43	20.26	124.25	0.09	0.09	769	8395		
			11:35:57	36.81	20.26	124.15	0.02	0.02	769	38838		
			11:35:58	36.20	20.26	124.13	0.02	0.02	769	41123		
			11:35:59	35.65	20.26	124.18	0.02	0.02	769	42022		
			11:36:00	35.12	20.26	124.15	0.02	0.02	769	42022		
			11:36:01	34.62	20.26	124.15	0.02	0.02	769	40688		
			11:36:02	34.20	20.26	124.13	0.02	0.02	769	45774		
			11:36:03	33.87	20.26	124.11	0.10	0.10	769	7510		
			11:36:04	33.73	20.26	124.05	0.02	0.02	769	42486		
			11:36:05	33.63	20.27	124.05	0.02	0.02	769	42486		
			11:36:06	33.52	20.26	124.11	0.02	0.02	769	41568		
			11:36:07	33.41	20.26	124.11	0.02	0.02	769	38643		
			11:36:08	33.29	20.26	124.11	0.02	0.02	769	45774		
			11:36:09	33.05	20.26	124.15	0.02	0.02	769	42486		
			11:36:10	32.69	20.26	124.11	0.02	0.02	769	41123		
			11:36:11	32.40	20.26	124.09	0.02	0.02	769	42961		
			11:36:12	32.22	20.27	124.08	0.02	0.02	769	41123		
			11:36:13	31.91	20.26	124.09	0.02	0.02	769	41568		
			11:36:14	31.46	20.26	124.15	0.02	0.02	769	43943		
			11:36:15	30.87	20.26	124.18	0.02	0.02	769	39639		
			11:36:16	30.33	20.26	124.09	0.02	0.02	769	42022		
			11:36:17	29.65	20.27	124.03	0.02	0.02	769	42961		
			11:36:18	28.97	20.26	124.11	0.02	0.02	769	40688		
			11:36:19	28.34	20.26	124.13	0.02	0.02	769	39845		
			11:36:20	27.76	20.26	124.09	0.02	0.02	769	42022		
			11:36:21	27.30	20.26	124.15	0.02	0.02	769	41568		
			11:36:22	26.81	20.26	124.18	0.02	0.02	769	42961		
			11:36:23	26.63	20.26	124.13	0.02	0.02	769	42022		

**TABLE D-6**

Profile PRO-04 on September 21, 2022 (1128-1143 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>32</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>45</b>	<b>Minimum Average Dilution in Profile</b>
<b>163</b>	<b>Detected Plume Average Dilution</b>
<b>478</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:36:24	26.77	20.26	124.07	0.02	0.02	769	43446		
			11:36:25	27.24	20.27	124.09	0.02	0.02	769	43446		
			11:36:26	27.94	20.26	124.11	0.02	0.02	769	40262		
			11:36:27	28.83	20.26	124.09	0.02	0.02	769	43446		
			11:36:28	29.55	20.26	124.11	0.02	0.02	769	43693		
			11:36:29	30.29	20.26	124.15	0.02	0.02	769	43202		
			11:36:30	30.79	20.26	124.15	0.02	0.02	769	38643		
			11:36:31	31.24	20.26	124.15	0.02	0.02	769	42486		
			11:36:32	31.41	20.26	124.10	0.02	0.02	769	39845		
			11:36:33	31.49	20.26	124.09	0.02	0.02	769	39845		
			11:36:34	31.29	20.26	124.11	0.02	0.02	769	43693		
			11:36:35	31.04	20.26	124.09	0.02	0.02	769	42486		
			11:36:36	30.87	20.26	124.18	0.02	0.02	769	38450		
			11:36:37	30.83	20.26	124.13	0.02	0.02	769	41568		
			11:36:38	30.98	20.26	124.11	0.02	0.02	769	44709		
			11:36:39	31.28	20.25	124.13	0.02	0.02	769	42022		
			11:36:40	31.61	20.25	124.18	0.04	0.04	769	21011		
			11:36:41	31.86	20.26	124.15	0.02	0.02	769	44971		
			11:36:42	31.93	20.26	124.15	0.02	0.02	769	42022		
			11:36:43	31.95	20.25	124.18	0.02	0.02	769	43446		
			11:36:44	31.99	20.25	124.22	0.02	0.02	769	43693		
			11:36:45	32.24	20.25	124.18	0.06	0.06	769	13708		
			11:36:46	32.35	20.25	124.22	0.02	0.02	769	39036		
			11:36:47	32.84	20.25	124.18	0.02	0.02	769	44195		
			11:36:48	33.43	20.25	124.18	0.02	0.02	769	39235		
			11:36:49	34.20	20.25	124.23	0.02	0.02	769	42486		
			11:36:50	35.04	20.25	124.22	0.02	0.02	769	48671		
			11:36:51	35.81	20.25	124.24	0.02	0.02	769	45774		
			11:36:52	36.62	20.25	124.20	0.02	0.02	769	40688		
			11:36:53	37.29	20.25	124.18	0.02	0.02	769	42022		
			11:36:54	37.92	20.25	124.11	0.02	0.02	769	43446		
			11:36:55	38.43	20.26	124.13	0.02	0.02	769	41123		
			11:36:56	38.75	20.25	124.15	0.07	0.07	769	10785		
			11:36:57	38.98	20.25	124.26	0.02	0.02	769	40688		
			11:36:58	39.05	20.25	124.22	0.02	0.02	769	43693		

**TABLE D-6**

Profile PRO-04 on September 21, 2022 (1128-1143 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>32</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>45</b>	<b>Minimum Average Dilution in Profile</b>
<b>163</b>	<b>Detected Plume Average Dilution</b>
<b>478</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:36:59	39.08	20.25	124.20	0.02	0.02	769	44709		
			11:37:00	39.02	20.25	124.20	0.02	0.02	769	39845		
			11:37:01	38.97	20.25	124.18	0.02	0.02	769	39235		
			11:37:02	38.95	20.25	124.22	0.02	0.02	769	44709		
			11:37:03	38.94	20.25	124.20	0.02	0.02	769	43943		
			11:37:04	38.85	20.25	124.20	0.02	0.02	769	42961		
			11:37:05	38.78	20.25	124.24	0.02	0.02	769	40262		
			11:37:06	38.63	20.25	124.20	0.02	0.02	769	39436		
			11:37:07	38.40	20.25	124.18	0.02	0.02	769	38838		
			11:37:08	38.08	20.25	124.22	0.02	0.02	769	40904		
			11:37:09	37.85	20.25	124.20	0.02	0.02	769	42961		
			11:37:10	37.43	20.25	124.20	0.02	0.02	769	42486		
			11:37:11	37.10	20.25	124.24	0.02	0.02	769	39845		
			11:37:12	36.61	20.25	124.22	0.02	0.02	769	39436		
			11:37:13	36.22	20.25	124.22	0.02	0.02	769	38450		
			11:37:14	35.79	20.25	124.18	0.02	0.02	769	41123		
			11:37:15	35.52	20.25	124.24	0.02	0.02	769	42486		
			11:37:16	35.19	20.25	124.18	0.02	0.02	769	43202		
			11:37:17	35.28	20.25	124.22	0.02	0.02	769	42486		
			11:37:18	36.10	20.25	124.22	0.02	0.02	769	42022		
			11:37:19	38.70	20.26	124.13	0.02	0.02	769	43693		
			11:37:20	39.48	20.26	124.12	0.02	0.02	769	42486		
			11:37:21	39.55	20.26	124.18	0.02	0.02	769	42961		
			11:37:22	39.46	20.26	124.11	0.02	0.02	769	39845		
			11:37:23	39.30	20.25	124.18	0.02	0.02	769	40904		
			11:37:24	39.05	20.25	124.20	0.02	0.02	769	41123		
			11:37:25	38.67	20.25	124.15	0.02	0.02	769	43446		
			11:37:26	38.09	20.26	125.77	1.83	1.27	769	608		
			11:37:27	37.61	20.28	125.65	4.45	3.61	769	213		
			11:37:28	37.05	20.28	124.39	0.02	0.02	769	43943		
			11:37:29	36.53	20.27	124.11	0.02	0.02	769	41568		
			11:37:30	36.09	20.28	124.06	0.02	0.02	769	46325		
			11:37:31	35.61	20.27	124.03	0.02	0.02	769	41123		
			11:37:32	35.17	20.27	124.07	0.02	0.02	769	42722		
			11:37:33	34.76	20.27	124.07	0.02	0.02	769	42486		

**TABLE D-6**

Profile PRO-04 on September 21, 2022 (1128-1143 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>32</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>45</b>	<b>Minimum Average Dilution in Profile</b>
<b>163</b>	<b>Detected Plume Average Dilution</b>
<b>478</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:37:34	34.42	20.27	124.03	0.02	0.02	769	42961		
			11:37:35	34.11	20.27	124.09	0.02	0.02	769	41123		
			11:37:36	33.88	20.26	124.11	0.02	0.02	769	38450		
			11:37:37	33.76	20.27	123.96	0.03	0.03	769	23303		
			11:37:38	33.66	20.27	124.05	0.02	0.02	769	42022		
			11:37:39	33.50	20.26	124.03	0.02	0.02	769	40262		
			11:37:40	33.36	20.27	124.01	0.02	0.02	769	45235		
			11:37:41	33.31	20.27	124.07	0.02	0.02	769	42486		
			11:37:42	33.02	20.27	124.07	0.02	0.02	769	42022		
			11:37:43	32.63	20.27	124.07	0.02	0.02	769	45774		
			11:37:44	32.34	20.27	124.07	0.02	0.02	769	40262		
			11:37:45	32.07	20.27	124.03	0.02	0.02	769	46890		
			11:37:46	31.85	20.27	124.03	0.02	0.02	769	41568		
			11:37:47	31.62	20.27	124.07	0.02	0.02	769	40262		
			11:37:48	31.26	20.27	124.07	0.02	0.02	769	39845		
			11:37:49	31.05	20.27	124.03	0.02	0.02	769	39235		
			11:37:50	30.85	20.27	124.03	0.02	0.02	769	39436		
			11:37:51	30.67	20.27	124.01	0.02	0.02	769	45774		
			11:37:52	30.83	20.27	124.07	0.02	0.02	769	41123		
			11:37:53	31.33	20.27	124.09	0.02	0.02	769	43943		
			11:37:54	32.30	20.27	124.09	0.02	0.02	769	40262		
			11:37:55	33.49	20.27	124.09	0.02	0.02	769	40688		
			11:37:56	34.81	20.27	124.09	0.02	0.02	769	42486		
			11:37:57	36.08	20.27	124.01	0.02	0.02	769	42961		
			11:37:58	37.32	20.27	127.84	4.78	3.91	769	197		
			11:37:59	38.52	20.28	128.86	9.62	8.25	769	93		
			11:38:00	39.60	20.29	132.55	27.22	24.04	769	32	107	Diffuser Port Plume at 40 ft
			11:38:01	40.65	20.30	131.40	17.82	15.61	769	49		
			11:38:02	41.63	20.28	128.09	4.31	3.49	769	220		
			11:38:03	42.43	20.27	131.89	12.70	11.01	769	70		
			11:38:04	43.21	20.29	129.03	9.87	8.47	769	91		
			11:38:05	43.77	20.27	126.50	2.94	2.26	769	340		
			11:38:06	44.11	20.26	126.05	3.32	2.60	769	296		
			11:38:07	44.36	20.26	125.87	2.47	1.84	769	419		
			11:38:08	44.54	20.26	126.36	3.15	2.45	769	314		

**TABLE D-6**

Profile PRO-04 on September 21, 2022 (1128-1143 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>32</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>45</b>	<b>Minimum Average Dilution in Profile</b>
<b>163</b>	<b>Detected Plume Average Dilution</b>
<b>478</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:38:09	44.47	20.27	126.32	5.33	4.40	769	175		
			11:38:10	44.43	20.27	127.88	7.06	5.96	769	129		
			11:38:11	44.40	20.28	128.58	8.15	6.93	769	111		
			11:38:12	44.36	20.29	128.41	2.28	1.67	769	460		
			11:38:13	44.33	20.28	126.79	2.03	1.44	769	534		
			11:38:14	44.47	20.29	129.96	6.58	5.52	769	139		
			11:38:15	44.44	20.29	130.08	10.02	8.61	769	89		
			11:38:16	44.51	20.28	129.50	6.39	5.35	769	144		
			11:38:17	44.45	20.28	126.73	0.78	0.32	769	2410		
			11:38:18	44.52	20.26	124.71	0.02	0.02	769	37330		
			11:38:19	44.45	20.26	125.22	0.70	0.25	769	3089		
			11:38:20	44.42	20.27	126.50	4.42	3.59	769	214		
			11:38:21	44.45	20.27	127.40	5.22	4.30	769	179		
			11:38:22	44.31	20.28	126.78	3.90	3.12	769	246	285	Diffuser Port Plume at 44 ft
			11:38:23	44.27	20.28	127.58	2.58	1.93	769	398		
			11:38:24	44.19	20.28	127.45	2.62	1.97	769	390		
			11:38:25	44.11	20.27	127.28	2.29	1.68	769	459		
			11:38:26	44.03	20.27	126.59	4.40	3.57	769	215		
			11:38:27	43.89	20.27	126.26	2.87	2.20	769	350		
			11:38:28	43.64	20.27	126.30	4.56	3.71	769	207	294	Diffuser Port Plume at 43 ft
			11:38:29	43.44	20.27	125.61	3.29	2.57	769	299		
			11:38:30	43.10	20.27	125.06	2.57	1.93	769	398		
			11:38:31	42.69	20.27	124.57	1.51	0.98	769	787		
			11:38:32	42.26	20.27	124.41	0.29	0.29	769	2670		
			11:38:33	41.85	20.27	124.13	0.02	0.02	769	42961		
			11:38:34	41.17	20.27	124.23	0.02	0.02	769	39036		
			11:38:35	40.65	20.27	124.26	0.02	0.02	769	42022		
			11:38:36	40.02	20.27	124.30	0.02	0.02	769	45774		
			11:38:37	39.49	20.27	124.92	0.17	0.17	769	4597		
			11:38:38	38.95	20.27	127.00	2.30	1.69	769	456		
			11:38:39	38.45	20.28	128.76	6.71	5.64	769	136		
			11:38:40	38.05	20.29	128.36	9.48	8.13	769	95	221	Diffuser Port Plume at 38 ft
			11:38:41	37.66	20.28	124.77	4.69	3.83	769	201		
			11:38:42	37.32	20.28	124.18	3.26	2.55	769	302		
			11:38:43	37.06	20.27	124.01	2.73	2.07	769	371		



**TABLE D-6**

Profile PRO-04 on September 21, 2022 (1128-1143 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>32</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>45</b>	<b>Minimum Average Dilution in Profile</b>
<b>163</b>	<b>Detected Plume Average Dilution</b>
<b>478</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:38:44	36.78	20.28	124.05	1.60	1.06	769	728		
			11:38:45	36.57	20.27	124.10	0.63	0.18	769	4180		
			11:38:46	36.38	20.27	124.07	0.18	0.18	769	4279		
			11:38:47	36.19	20.26	124.11	0.02	0.02	769	44451		
			11:38:48	36.03	20.26	124.07	0.02	0.02	769	41123		
			11:38:49	35.86	20.26	124.09	0.02	0.02	769	42961		
			11:38:50	35.69	20.26	124.07	0.02	0.02	769	42486		
			11:38:51	35.52	20.26	124.07	0.02	0.02	769	41123		
			11:38:52	35.14	20.26	124.11	0.02	0.02	769	42486		
			11:38:53	34.96	20.26	124.09	0.02	0.02	769	41568		
			11:38:54	34.91	20.26	124.06	0.02	0.02	769	39235		
			11:38:55	34.82	20.27	124.03	0.02	0.02	769	44709		
			11:38:56	34.66	20.27	124.07	0.02	0.02	769	38643		
			11:38:57	34.45	20.26	124.13	0.02	0.02	769	42486		
			11:38:58	34.18	20.26	124.11	0.02	0.02	769	42022		
			11:38:59	34.00	20.26	124.13	0.02	0.02	769	47469		
			11:39:00	33.81	20.26	124.13	0.02	0.02	769	43693		
			11:39:01	33.54	20.26	124.07	0.02	0.02	769	41123		
			11:39:02	33.32	20.26	124.05	0.02	0.02	769	45235		
			11:39:03	33.17	20.26	124.03	0.02	0.02	769	40688		
			11:39:04	32.94	20.26	124.06	0.02	0.02	769	41123		
			11:39:05	32.76	20.27	124.05	0.02	0.02	769	42022		
			11:39:06	32.53	20.26	124.07	0.07	0.07	769	11226		
			11:39:07	32.43	20.26	124.03	0.02	0.02	769	39845		
			11:39:08	32.38	20.27	124.05	0.02	0.02	769	45235		
			11:39:09	32.24	20.27	124.07	0.02	0.02	769	39235		
			11:39:10	32.15	20.27	124.05	0.02	0.02	769	41568		
			11:39:11	32.05	20.27	124.03	0.02	0.02	769	43202		
			11:39:12	32.03	20.27	124.01	0.02	0.02	769	40688		
			11:39:13	31.94	20.26	124.07	0.02	0.02	769	43446		
			11:39:14	31.92	20.26	124.09	0.02	0.02	769	42022		
			11:39:15	31.90	20.26	124.09	0.02	0.02	769	42486		
			11:39:16	31.94	20.26	124.13	0.02	0.02	769	42961		
			11:39:17	32.31	20.25	124.11	0.02	0.02	769	40262		
			11:39:18	32.90	20.25	124.15	0.02	0.02	769	40688		

**TABLE D-6**

Profile PRO-04 on September 21, 2022 (1128-1143 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>32</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>45</b>	<b>Minimum Average Dilution in Profile</b>
<b>163</b>	<b>Detected Plume Average Dilution</b>
<b>478</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:39:19	33.86	20.25	124.56	0.49	0.06	769	12880		
			11:39:20	34.96	20.26	124.42	0.25	0.25	769	3053		
			11:39:21	36.28	20.26	124.13	0.02	0.02	769	41123		
			11:39:22	37.64	20.25	124.11	0.02	0.02	769	38450		
			11:39:23	39.09	20.25	124.11	0.02	0.02	769	44709		
			11:39:24	40.42	20.26	124.10	0.02	0.02	769	44451		
			11:39:25	41.62	20.26	124.25	0.02	0.02	769	43943		
			11:39:26	42.66	20.26	126.34	0.95	0.48	769	1618		
			11:39:27	43.54	20.27	126.73	3.52	2.78	769	276		
			11:39:28	44.07	20.27	125.69	3.06	2.37	769	325		
			11:39:29	44.45	20.26	125.05	1.38	0.86	769	891		
			11:39:30	44.48	20.26	124.90	1.18	0.68	769	1132		
			11:39:31	44.42	20.26	124.84	0.10	0.10	769	7675		
			11:39:32	44.36	20.26	127.31	1.29	0.78	769	984		
			11:39:33	44.19	20.27	129.20	3.47	2.74	769	281		
			11:39:34	44.20	20.28	131.95	5.76	4.79	769	161		
			11:39:35	44.22	20.28	129.81	7.10	6.00	769	128		
			11:39:36	44.23	20.27	126.78	3.81	3.04	769	253	178	Diffuser Port Plume at 44 ft
			11:39:37	44.34	20.27	127.96	5.66	4.70	769	164		
			11:39:38	44.33	20.28	130.73	6.49	5.44	769	141		
			11:39:39	44.35	20.29	133.07	7.90	6.71	769	115		
			11:39:40	44.34	20.29	128.84	2.10	1.50	769	512		
			11:39:41	44.30	20.27	126.30	0.02	0.02	769	42961		
			11:39:42	44.24	20.26	125.35	0.02	0.02	769	40688		
			11:39:43	44.20	20.26	125.11	0.02	0.02	769	41123		
			11:39:44	44.13	20.26	124.30	0.02	0.02	769	44971		
			11:39:45	44.04	20.26	124.18	0.02	0.02	769	42486		
			11:39:46	43.80	20.26	124.15	0.02	0.02	769	40262		
			11:39:47	43.64	20.26	124.18	0.02	0.02	769	42486		
			11:39:48	43.40	20.26	124.13	0.02	0.02	769	44971		
			11:39:49	43.18	20.26	124.15	0.02	0.02	769	42961		
			11:39:50	42.78	20.26	124.13	0.02	0.02	769	44971		
			11:39:51	42.40	20.26	124.16	0.02	0.02	769	44709		
			11:39:52	41.95	20.26	124.85	0.02	0.02	769	42961		
			11:39:53	41.50	20.26	125.76	3.54	2.79	769	275		

**TABLE D-6**

Profile PRO-04 on September 21, 2022 (1128-1143 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>32</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>45</b>	<b>Minimum Average Dilution in Profile</b>
<b>163</b>	<b>Detected Plume Average Dilution</b>
<b>478</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:39:54	41.00	20.27	128.03	7.45	6.30	769	122		Diffuser Port Plume at 39 ft
			11:39:55	40.58	20.28	131.64	14.25	12.40	769	62		
			11:39:56	40.05	20.29	132.71	15.24	13.30	769	58	62	
			11:39:57	39.60	20.29	135.22	19.28	16.92	769	45		
			11:39:58	39.07	20.29	132.14	10.66	9.19	769	84		
			11:39:59	38.59	20.28	128.72	4.59	3.74	769	206		
			11:40:00	38.14	20.27	126.25	2.36	1.74	769	442		
			11:40:01	37.73	20.26	124.65	0.02	0.02	769	36971		
			11:40:02	37.23	20.26	125.00	0.02	0.02	769	43943		
			11:40:03	36.68	20.26	124.61	0.02	0.02	769	41568		
			11:40:04	36.34	20.26	124.37	0.02	0.02	769	39845		
			11:40:05	36.17	20.26	125.38	0.09	0.09	769	8921		
			11:40:06	36.18	20.26	128.62	5.15	4.24	769	181		
			11:40:07	36.12	20.27	128.51	8.21	6.99	769	110		
			11:40:08	35.86	20.26	125.02	0.93	0.45	769	1693		
			11:40:09	35.68	20.26	124.59	0.02	0.02	769	40262		
			11:40:10	35.30	20.26	125.01	0.06	0.06	769	13190		
			11:40:11	34.89	20.26	126.61	1.75	1.19	769	646		
			11:40:12	34.44	20.26	125.71	1.66	1.11	769	694		
			11:40:13	33.99	20.26	124.49	2.16	1.56	769	494		
			11:40:14	33.54	20.25	124.26	1.89	1.32	769	582		
			11:40:15	33.11	20.25	124.18	0.84	0.38	769	2047		
			11:40:16	32.67	20.25	124.18	0.02	0.02	769	43693		
			11:40:17	32.40	20.25	124.11	0.02	0.02	769	42722		
			11:40:18	32.16	20.25	124.11	0.02	0.02	769	42486		
			11:40:19	32.00	20.25	124.15	0.31	0.31	769	2467		
			11:40:20	31.86	20.25	124.09	0.02	0.02	769	42722		
			11:40:21	31.72	20.26	124.09	0.02	0.02	769	40688		
			11:40:22	31.51	20.26	124.09	0.02	0.02	769	39436		
			11:40:23	31.33	20.26	124.09	0.02	0.02	769	41568		
			11:40:24	31.17	20.26	124.11	0.02	0.02	769	42486		
			11:40:25	31.06	20.25	124.13	0.02	0.02	769	45235		
			11:40:26	30.88	20.25	124.15	0.02	0.02	769	39235		
			11:40:27	30.78	20.25	124.07	0.02	0.02	769	41568		
			11:40:28	30.66	20.25	124.13	0.02	0.02	769	43943		

**TABLE D-6**

Profile PRO-04 on September 21, 2022 (1128-1143 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>32</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>45</b>	<b>Minimum Average Dilution in Profile</b>
<b>163</b>	<b>Detected Plume Average Dilution</b>
<b>478</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:40:29	30.53	20.25	124.15	0.02	0.02	769	42486		
			11:40:30	30.34	20.25	124.13	0.02	0.02	769	44451		
			11:40:31	30.22	20.25	124.13	0.02	0.02	769	40262		
			11:40:32	30.01	20.25	124.13	0.02	0.02	769	41568		
			11:40:33	29.89	20.25	124.24	0.02	0.02	769	42961		
			11:40:34	29.78	20.25	124.20	0.02	0.02	769	42486		
			11:40:35	29.95	20.25	124.18	0.02	0.02	769	40262		
			11:40:36	30.43	20.25	124.15	0.02	0.02	769	44971		
			11:40:37	31.17	20.25	124.20	0.02	0.02	769	44195		
			11:40:38	32.22	20.25	124.13	0.02	0.02	769	42961		
			11:40:39	33.45	20.25	124.20	0.02	0.02	769	47469		
			11:40:40	34.66	20.25	124.23	0.02	0.02	769	41568		
			11:40:41	35.91	20.25	124.51	0.02	0.02	769	42022		
			11:40:42	37.06	20.25	124.29	0.02	0.02	769	39845		
			11:40:43	38.07	20.26	132.33	14.10	12.27	769	63		
			11:40:44	39.08	20.29	132.57	19.11	16.76	769	46		
			11:40:45	39.99	20.27	129.59	11.69	10.11	769	76	131	Diffuser Port Plume at 39 ft
			11:40:46	40.85	20.27	128.03	6.76	5.69	769	135		
			11:40:47	41.65	20.26	127.21	4.74	3.87	769	199		
			11:40:48	42.33	20.27	128.52	6.67	5.61	769	137		
			11:40:49	43.04	20.27	130.26	4.49	3.65	769	211		
			11:40:50	43.58	20.27	129.35	7.90	6.71	769	115		
			11:40:51	44.02	20.26	126.22	4.67	3.81	769	202		
			11:40:52	44.31	20.26	125.10	0.94	0.46	769	1666		
			11:40:53	44.48	20.25	124.98	0.91	0.44	769	1750		
			11:40:54	44.55	20.26	126.34	3.05	2.36	769	326		
			11:40:55	44.60	20.26	125.71	5.92	4.94	769	156		
			11:40:56	44.47	20.26	126.60	6.35	5.32	769	145		
			11:40:57	44.44	20.26	127.11	5.33	4.40	769	175		
			11:40:58	44.39	20.26	127.45	5.79	4.81	769	160	190	Diffuser Port Plume at 44 ft
			11:40:59	44.38	20.26	126.75	4.57	3.72	769	207		
			11:41:00	44.43	20.26	126.83	4.49	3.65	769	211		
			11:41:01	44.36	20.26	125.50	3.52	2.78	769	277		
			11:41:02	44.35	20.26	127.92	3.15	2.45	769	314		
			11:41:03	44.42	20.27	129.57	1.23	0.72	769	1061		

**TABLE D-6**

Profile PRO-04 on September 21, 2022 (1128-1143 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>32</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>45</b>	<b>Minimum Average Dilution in Profile</b>
<b>163</b>	<b>Detected Plume Average Dilution</b>
<b>478</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:41:04	44.41	20.27	129.80	6.54	5.49	769	140	131	Diffuser Port Plume at 44 ft
			11:41:05	44.48	20.27	130.10	8.47	7.22	769	107		
			11:41:06	44.48	20.27	128.17	6.92	5.83	769	132		
			11:41:07	44.52	20.26	126.40	6.21	5.19	769	148		
			11:41:08	44.51	20.26	126.82	8.54	7.28	769	106		
			11:41:09	44.47	20.26	125.71	6.03	5.03	769	153		
			11:41:10	44.37	20.25	124.94	1.68	1.13	769	681		
			11:41:11	44.37	20.25	125.37	3.52	2.78	769	277		
			11:41:12	44.24	20.26	126.66	6.40	5.37	769	143		
			11:41:13	44.09	20.26	127.33	6.81	5.73	769	134		
			11:41:14	43.90	20.26	127.52	7.06	5.96	769	129	132	Diffuser Port Plume at 43 ft
			11:41:15	43.65	20.26	127.29	5.35	4.42	769	174		
			11:41:16	43.40	20.26	126.76	11.42	9.87	769	78		
			11:41:17	43.03	20.26	127.38	8.99	7.69	769	100		
			11:41:18	42.72	20.26	127.14	5.64	4.68	769	164		
			11:41:19	42.26	20.26	125.81	2.17	1.57	769	490		
			11:41:20	41.74	20.26	126.11	2.04	1.45	769	529		
			11:41:21	41.16	20.25	125.10	1.15	0.65	769	1174		
			11:41:22	40.58	20.25	125.44	0.16	0.16	769	4821		
			11:41:23	39.94	20.25	124.87	0.21	0.21	769	3651		
			11:41:24	39.39	20.25	125.77	2.01	1.42	769	540		
			11:41:25	38.74	20.26	125.73	1.53	0.99	769	775		
			11:41:26	38.22	20.26	125.11	1.89	1.32	769	584		
			11:41:27	37.49	20.26	124.70	0.78	0.32	769	2406		
			11:41:28	36.93	20.26	124.13	0.30	0.30	769	2537		
			11:41:29	36.31	20.26	124.11	0.02	0.02	769	45235		
			11:41:30	35.66	20.26	124.11	0.02	0.02	769	48671		
			11:41:31	35.14	20.26	124.13	0.02	0.02	769	44971		
			11:41:32	34.61	20.26	124.05	0.02	0.02	769	41123		
			11:41:33	34.13	20.26	124.05	0.02	0.02	769	45774		
			11:41:34	33.62	20.27	123.95	0.02	0.02	769	43943		
			11:41:35	33.16	20.27	123.82	0.02	0.02	769	42961		
			11:41:36	32.74	20.28	123.88	0.02	0.02	769	45235		
			11:41:37	32.32	20.28	123.88	0.02	0.02	769	43943		
			11:41:38	32.04	20.28	123.92	0.02	0.02	769	42961		

**TABLE D-6**

Profile PRO-04 on September 21, 2022 (1128-1143 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>32</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>45</b>	<b>Minimum Average Dilution in Profile</b>
<b>163</b>	<b>Detected Plume Average Dilution</b>
<b>478</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:41:39	31.67	20.27	124.03	0.02	0.02	769	45235		
			11:41:40	31.36	20.26	124.05	0.02	0.02	769	42961		
			11:41:41	30.98	20.26	124.05	0.02	0.02	769	42022		
			11:41:42	30.65	20.26	124.05	0.02	0.02	769	42961		
			11:41:43	30.59	20.27	123.84	0.02	0.02	769	40688		
			11:41:44	30.91	20.28	123.96	0.02	0.02	769	41123		
			11:41:45	31.24	20.26	124.01	0.02	0.02	769	41568		
			11:41:46	31.63	20.27	124.03	0.02	0.02	769	42486		
			11:41:47	31.98	20.26	123.96	0.02	0.02	769	37330		
			11:41:48	32.49	20.27	124.03	0.02	0.02	769	39845		
			11:41:49	32.93	20.26	124.03	0.02	0.02	769	43693		
			11:41:50	33.13	20.26	124.03	0.02	0.02	769	42486		
			11:41:51	33.14	20.26	124.05	0.02	0.02	769	41123		
			11:41:52	32.89	20.26	124.07	0.02	0.02	769	43693		
			11:41:53	32.54	20.26	125.43	0.02	0.02	769	39639		
			11:41:54	32.07	20.26	125.91	0.02	0.02	769	34796		
			11:41:55	31.55	20.26	124.37	0.32	0.32	769	2429		
			11:41:56	30.98	20.26	124.15	0.83	0.37	769	2079		
			11:41:57	30.64	20.26	124.11	0.22	0.22	769	3549		
			11:41:58	30.75	20.25	124.11	0.02	0.02	769	40688		
			11:41:59	31.14	20.25	124.09	0.02	0.02	769	35114		
			11:42:00	31.59	20.26	124.05	0.02	0.02	769	42961		
			11:42:01	31.91	20.26	124.09	0.02	0.02	769	41123		
			11:42:02	32.21	20.26	124.09	0.03	0.03	769	23303		
			11:42:03	32.40	20.26	124.10	0.06	0.06	769	13168		
			11:42:04	32.58	20.26	124.05	0.02	0.02	769	43446		
			11:42:05	32.68	20.26	124.01	0.02	0.02	769	46890		
			11:42:06	32.73	20.26	124.11	0.02	0.02	769	41123		
			11:42:07	32.82	20.26	124.11	0.02	0.02	769	45235		
			11:42:08	32.87	20.25	124.11	0.02	0.02	769	46325		
			11:42:09	32.86	20.25	124.11	0.19	0.19	769	4106		
			11:42:10	32.75	20.25	124.09	0.08	0.08	769	9447		
			11:42:11	32.73	20.25	124.09	0.02	0.02	769	37330		
			11:42:12	32.83	20.26	124.10	0.05	0.05	769	16864		
			11:42:13	33.25	20.25	124.09	0.02	0.02	769	44195		

**TABLE D-6**

Profile PRO-04 on September 21, 2022 (1128-1143 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>32</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>45</b>	<b>Minimum Average Dilution in Profile</b>
<b>163</b>	<b>Detected Plume Average Dilution</b>
<b>478</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:42:14	34.11	20.26	124.09	0.02	0.02	769	43693		
			11:42:15	35.12	20.26	124.09	0.02	0.02	769	39845		
			11:42:16	36.22	20.25	124.09	0.02	0.02	769	42961		
			11:42:17	37.37	20.25	124.11	0.02	0.02	769	40688		
			11:42:18	38.61	20.25	124.39	0.02	0.02	769	42486		
			11:42:19	39.92	20.26	125.18	2.11	1.51	769	508		
			11:42:20	41.15	20.26	125.26	1.12	0.63	769	1219		
			11:42:21	42.21	20.26	125.87	1.67	1.12	769	688		
			11:42:22	43.12	20.26	124.55	0.27	0.27	769	2825		
			11:42:23	43.77	20.25	124.18	0.02	0.02	769	41568		
			11:42:24	44.27	20.25	124.13	0.02	0.02	769	40688		
			11:42:25	44.52	20.25	124.20	0.02	0.02	769	42022		
			11:42:26	44.63	20.25	124.15	0.02	0.02	769	42022		
			11:42:27	44.58	20.25	124.19	0.02	0.02	769	45774		
			11:42:28	44.44	20.25	124.75	0.02	0.02	769	46325		
			11:42:29	44.40	20.25	124.84	0.02	0.02	769	45235		
			11:42:30	44.28	20.25	124.32	0.06	0.06	769	12187		
			11:42:31	44.23	20.25	124.20	0.02	0.02	769	39845		
			11:42:32	44.08	20.25	124.12	0.02	0.02	769	44451		
			11:42:33	44.04	20.25	124.13	0.02	0.02	769	42486		
			11:42:34	44.00	20.25	124.27	0.02	0.02	769	43446		
			11:42:35	44.07	20.25	124.56	0.51	0.08	769	9780		
			11:42:36	44.10	20.25	124.87	1.21	0.71	769	1090		
			11:42:37	44.27	20.25	124.92	0.70	0.25	769	3128		
			11:42:38	44.40	20.25	124.92	0.08	0.08	769	10000		
			11:42:39	44.50	20.26	125.00	0.51	0.08	769	9813		
			11:42:40	44.55	20.26	125.53	0.49	0.06	769	12254		
			11:42:41	44.57	20.26	125.75	0.51	0.07	769	10272		
			11:42:42	44.61	20.26	126.11	0.98	0.50	769	1523		
			11:42:43	44.56	20.26	126.62	1.53	0.99	769	777		
			11:42:44	44.52	20.26	126.34	3.54	2.80	769	274		
			11:42:45	44.52	20.26	126.44	4.43	3.60	769	214		
			11:42:46	44.44	20.26	125.93	2.64	1.99	769	386		
			11:42:47	44.41	20.26	125.41	0.60	0.16	769	4776		
			11:42:48	44.33	20.26	125.18	0.97	0.49	769	1568		

**TABLE D-6**

Profile PRO-04 on September 21, 2022 (1128-1143 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>32</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>45</b>	<b>Minimum Average Dilution in Profile</b>
<b>163</b>	<b>Detected Plume Average Dilution</b>
<b>478</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:42:49	44.22	20.25	125.00	2.13	1.53	769	502		Diffuser Port Plume at 42 ft
			11:42:50	44.14	20.25	124.49	1.69	1.14	769	674		
			11:42:51	44.04	20.25	124.75	0.37	0.37	769	2067		
			11:42:52	43.88	20.25	124.80	0.10	0.10	769	7936		
			11:42:53	43.65	20.25	124.82	0.14	0.14	769	5654		
			11:42:54	43.37	20.25	124.98	0.57	0.13	769	5897		
			11:42:55	43.05	20.26	125.36	1.41	0.89	769	868		
			11:42:56	42.70	20.26	126.18	3.14	2.44	769	316		
			11:42:57	42.36	20.27	129.70	8.55	7.29	769	105		
			11:42:58	41.95	20.28	130.32	9.91	8.51	769	90	183	
			11:42:59	41.52	20.27	127.94	6.30	5.27	769	146		
			11:43:00	41.08	20.26	126.61	3.38	2.65	769	290		
			11:43:01	40.66	20.26	126.96	4.38	3.56	769	216		
			11:43:02	40.36	20.26	127.31	4.60	3.75	769	205		
			11:43:03	40.01	20.26	125.87	4.22	3.41	769	226		
			11:43:04	39.80	20.26	125.01	1.26	0.75	769	1024		
			11:43:05	39.56	20.25	124.89	0.63	0.19	769	4154		
			11:43:06	39.33	20.25	124.76	0.70	0.25	769	3029		
			11:43:07	39.10	20.26	126.50	4.37	3.54	769	217		
			11:43:08	38.83	20.27	127.54	4.22	3.41	769	225		
			11:43:09	38.52	20.27	126.12	2.91	2.24	769	344		
			11:43:10	38.22	20.26	125.02	0.75	0.30	769	2602		
			11:43:11	37.96	20.26	127.00	3.61	2.86	769	269		
			11:43:12	37.72	20.26	125.78	3.64	2.89	769	266		
			11:43:13	37.61	20.26	126.62	4.60	3.75	769	205		
			11:43:14	37.51	20.27	127.98	7.22	6.10	769	126		
			11:43:15	37.36	20.26	125.40	2.93	2.25	769	342		
			11:43:16	37.11	20.26	124.32	0.02	0.02	769	45235		
			11:43:17	36.98	20.26	124.61	0.05	0.05	769	15567		
			11:43:18	36.99	20.26	124.27	0.05	0.05	769	16938		
			11:43:19	36.89	20.26	124.24	0.02	0.02	769	42022		
			11:43:20	36.96	20.26	124.15	0.02	0.02	769	42022		
			11:43:21	36.96	20.26	124.09	0.02	0.02	769	40688		
			11:43:22	36.88	20.26	124.05	0.02	0.02	769	42486		
			11:43:23	36.67	20.26	124.05	0.02	0.02	769	43446		



**TABLE D-6**

Profile PRO-04 on September 21, 2022 (1128-1143 hours PDT) located at AZB (24 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>32</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>45</b>	<b>Minimum Average Dilution in Profile</b>
<b>163</b>	<b>Detected Plume Average Dilution</b>
<b>478</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed & Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:43:24	36.35	20.26	124.03	0.02	0.02	769	39845		
			11:43:25	36.05	20.26	124.03	0.02	0.02	769	42486		
			11:43:26	35.70	20.26	124.03	0.02	0.02	769	40688		
			11:43:27	35.29	20.26	124.07	0.02	0.02	769	39845		
			11:43:28	34.98	20.26	124.05	0.02	0.02	769	42486		
			11:43:29	34.63	20.26	123.99	0.02	0.02	769	39845		
			11:43:30	34.21	20.26	124.05	0.02	0.02	769	41123		
			11:43:31	33.91	20.26	124.05	0.02	0.02	769	42486		
			11:43:32	33.59	20.26	124.03	0.02	0.02	769	43446		
			11:43:33	33.30	20.26	124.09	0.02	0.02	769	40688		
			11:43:34	33.03	20.26	124.07	0.02	0.02	769	38450		
			11:43:35	32.80	20.26	124.09	0.02	0.02	769	45235		
			11:43:36	32.55	20.26	124.11	0.02	0.02	769	45774		

TABLE D-7

Profile PRO-05 on September 21, 2022 (1156-1207 hours PDT) located at MZB (242 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-5 (Mixing Zone Boundary 242 ft Northeast of Diffuser)	40 ft	0.36 m/sec 340 deg. (mag.) Ebb tide	11:57:02	2.44	20.19	123.18	1.90	1.32	805	608	1554	Plume traces near surface at NE MZB
			11:57:03	2.54	20.17	122.62	1.24	0.73	805	1103		
			11:57:04	2.58	20.17	122.98	1.67	1.12	805	718		
			11:57:05	2.59	20.18	123.08	1.35	0.84	805	962		
			11:57:06	2.56	20.21	123.19	1.27	0.76	805	1064		
			11:57:07	2.60	20.22	123.21	1.42	0.89	805	903		
			11:57:08	2.54	20.23	123.21	1.54	1.00	805	805		
			11:57:09	2.57	20.23	123.15	0.93	0.46	805	1758		
			11:57:10	2.51	20.23	123.36	1.27	0.76	805	1054		
			11:57:11	2.47	20.24	123.44	0.99	0.51	805	1574		
			11:57:12	2.45	20.24	123.43	1.05	0.56	805	1437		
			11:57:13	2.54	20.24	123.29	0.93	0.46	805	1766		
			11:57:14	2.74	20.24	123.20	0.96	0.48	805	1675		
			11:57:15	2.74	20.24	123.40	1.28	0.77	805	1047		
			11:57:16	2.81	20.24	123.08	1.50	0.96	805	835		
			11:57:17	2.82	20.25	123.42	1.17	0.67	805	1203		
			11:57:18	2.85	20.25	123.53	0.77	0.31	805	2561		
			11:57:19	2.87	20.25	123.77	0.62	0.18	805	4443		
			11:57:20	2.83	20.26	123.82	0.95	0.48	805	1693		
			11:57:21	2.81	20.27	123.89	1.23	0.72	805	1112		
			11:57:22	2.85	20.28	123.96	1.10	0.60	805	1333		
			11:57:23	2.87	20.28	123.98	0.79	0.33	805	2454		
			11:57:24	2.85	20.28	123.96	1.09	0.60	805	1339		
			11:57:25	2.84	20.28	123.98	0.83	0.36	805	2206		
			11:57:26	2.83	20.28	123.96	0.87	0.40	805	2009		
			11:57:27	2.88	20.28	123.94	0.29	0.29	805	2740		
			11:57:28	2.96	20.28	123.96	0.61	0.17	805	4729		
			11:57:29	2.90	20.28	123.92	0.84	0.37	805	2167		
11:57:30	2.90	20.28	123.92	0.92	0.45	805	1786					
11:57:31	2.94	20.29	123.94	0.10	0.10	805	7923					
11:57:32	2.94	20.29	123.98	0.56	0.13	805	6326					
11:57:33	2.88	20.29	124.05	0.32	0.32	805	2497					
11:57:34	2.94	20.28	124.05	0.43	0.01	805	98129					
11:57:35	2.93	20.28	124.09	0.82	0.35	805	2279					
11:57:36	2.82	20.28	124.18	0.51	0.08	805	10625					
11:57:37	2.89	20.28	124.18	0.55	0.12	805	6759					
11:57:38	2.93	20.28	124.13	0.25	0.25	805	3282					

**TABLE D-7**

Profile PRO-05 on September 21, 2022 (1156-1207 hours PDT) located at MZB (242 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>119</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>172</b>	<b>Minimum Average Dilution in Profile</b>
<b>194</b>	<b>Detected Plume Average Dilution</b>
<b>862</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
			11:57:39	3.00	20.28	124.15	0.09	0.09	805	9339		
			11:57:40	2.98	20.28	124.09	0.50	0.07	805	11280		
			11:57:41	2.92	20.28	124.12	0.24	0.24	805	3374		
			11:57:42	2.87	20.28	124.13	0.46	0.03	805	25173		
			11:57:43	2.88	20.29	124.20	0.12	0.12	805	6886		
			11:57:44	2.99	20.30	124.22	0.02	0.02	805	42593		
			11:57:45	2.93	20.31	124.28	0.20	0.20	805	3940		
			11:57:46	2.92	20.31	124.29	0.16	0.16	805	5187		
			11:57:47	2.96	20.31	124.29	0.22	0.22	805	3722		
			11:57:48	3.00	20.31	124.26	0.02	0.02	805	42147		
			11:57:49	2.97	20.30	124.26	0.11	0.11	805	7068		
			11:57:50	3.05	20.30	124.25	0.02	0.02	805	37269		
			11:57:51	3.04	20.30	124.27	0.02	0.02	805	40657		
			11:57:52	3.10	20.31	124.29	0.02	0.02	805	47917		
			11:57:53	2.94	20.31	124.34	0.02	0.02	805	40250		
			11:57:54	3.07	20.31	124.29	0.03	0.03	805	23199		
			11:57:55	2.98	20.32	124.30	0.07	0.07	805	11322		
			11:57:56	3.00	20.32	124.32	0.02	0.02	805	44475		
			11:57:57	3.07	20.32	124.30	0.02	0.02	805	39461		
			11:57:58	2.92	20.31	124.32	0.09	0.09	805	8750		
			11:57:59	3.01	20.31	124.31	0.02	0.02	805	40657		
			11:58:00	2.93	20.31	124.30	0.02	0.02	805	43514		
			11:58:01	2.99	20.31	124.30	0.02	0.02	805	44475		
			11:58:02	2.92	20.31	124.30	0.03	0.03	805	23333		
			11:58:03	2.98	20.31	124.34	0.02	0.02	805	36927		
			11:58:04	3.00	20.31	124.30	0.02	0.02	805	47076		
			11:58:05	2.99	20.31	124.30	0.02	0.02	805	46000		
			11:58:06	3.02	20.30	124.30	0.02	0.02	805	49085		
			11:58:07	3.02	20.30	124.27	0.04	0.04	805	21757		
			11:58:08	2.97	20.30	124.29	0.02	0.02	805	44972		
			11:58:09	3.02	20.30	124.26	0.02	0.02	805	41710		
			11:58:10	2.92	20.30	124.29	0.04	0.04	805	21524		
			11:58:11	2.96	20.30	124.27	0.07	0.07	805	11979		
			11:58:12	2.99	20.30	124.30	0.02	0.02	805	39851		
			11:58:13	2.96	20.30	124.29	0.02	0.02	805	43514		
			11:58:14	2.98	20.31	124.34	0.02	0.02	805	41282		
			11:58:15	2.95	20.32	124.34	0.02	0.02	805	46264		
			11:58:16	3.00	20.32	124.34	0.02	0.02	805	42147		
			11:58:17	2.89	20.32	124.36	0.02	0.02	805	46000		
			11:58:18	3.09	20.31	124.31	0.06	0.06	805	12758		

**TABLE D-7**

Profile PRO-05 on September 21, 2022 (1156-1207 hours PDT) located at MZB (242 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>119</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>172</b>	<b>Minimum Average Dilution in Profile</b>
<b>194</b>	<b>Detected Plume Average Dilution</b>
<b>862</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
			11:58:19	3.03	20.31	124.34	0.14	0.14	805	5902		
			11:58:20	3.11	20.31	124.29	0.02	0.02	805	43048		
			11:58:21	3.02	20.31	124.30	0.02	0.02	805	40250		
			11:58:22	3.07	20.31	124.30	0.02	0.02	805	45480		
			11:58:23	3.02	20.31	124.30	0.02	0.02	805	42593		
			11:58:24	3.01	20.31	124.30	0.04	0.04	805	21524		
			11:58:25	3.04	20.31	124.30	0.02	0.02	805	45480		
			11:58:26	3.08	20.31	124.31	0.07	0.07	805	11227		
			11:58:27	2.97	20.30	124.29	0.02	0.02	805	46000		
			11:58:28	3.05	20.29	124.24	0.05	0.05	805	17238		
			11:58:29	3.04	20.29	124.26	0.02	0.02	805	42593		
			11:58:30	2.97	20.29	124.22	0.02	0.02	805	43048		
			11:58:31	3.02	20.29	124.24	0.02	0.02	805	41710		
			11:58:32	3.03	20.29	124.22	0.02	0.02	805	41710		
			11:58:33	2.96	20.29	124.24	0.04	0.04	805	18254		
			11:58:34	2.97	20.29	124.25	0.10	0.10	805	7884		
			11:58:35	3.04	20.29	124.29	0.14	0.14	805	5622		
			11:58:36	2.99	20.29	124.30	0.02	0.02	805	42593		
			11:58:37	2.98	20.29	124.26	0.02	0.02	805	42593		
			11:58:38	3.04	20.29	124.25	0.02	0.02	805	42147		
			11:58:39	2.97	20.29	124.26	0.09	0.09	805	9179		
			11:58:40	3.01	20.29	124.29	0.02	0.02	805	44475		
			11:58:41	2.99	20.29	124.26	0.02	0.02	805	40452		
			11:58:42	3.00	20.29	124.24	0.13	0.13	805	5976		
			11:58:43	2.98	20.29	124.29	0.13	0.13	805	6425		
			11:58:44	2.99	20.29	124.27	0.05	0.05	805	15304		
			11:58:45	3.03	20.29	124.27	0.02	0.02	805	47353		
			11:58:46	2.97	20.29	124.25	0.02	0.02	805	44475		
			11:58:47	3.01	20.29	124.26	0.02	0.02	805	42593		
			11:58:48	2.97	20.29	124.29	0.02	0.02	805	46802		
			11:58:49	3.05	20.29	124.27	0.02	0.02	805	45480		
			11:58:50	2.97	20.29	124.30	0.05	0.05	805	17091		
			11:58:51	3.02	20.29	124.27	0.02	0.02	805	46802		
			11:58:52	2.95	20.29	124.25	0.02	0.02	805	43048		
			11:58:53	2.95	20.29	124.24	0.02	0.02	805	43048		
			11:58:54	2.92	20.29	124.29	0.02	0.02	805	42147		
			11:58:55	3.18	20.29	124.27	0.02	0.02	805	43048		
			11:58:56	4.88	20.29	124.25	0.02	0.02	805	50629		
			11:58:57	7.82	20.29	124.27	0.15	0.15	805	5321		
			11:58:58	8.42	20.29	124.29	0.02	0.02	805	42147		

**TABLE D-7**

Profile PRO-05 on September 21, 2022 (1156-1207 hours PDT) located at MZB (242 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>119</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>172</b>	<b>Minimum Average Dilution in Profile</b>
<b>194</b>	<b>Detected Plume Average Dilution</b>
<b>862</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
			11:58:59	8.64	20.29	124.29	0.09	0.09	805	9137		
			11:59:00	8.78	20.30	124.32	0.02	0.02	805	43514		
			11:59:01	8.74	20.30	124.29	0.02	0.02	805	40250		
			11:59:02	8.78	20.30	124.30	0.02	0.02	805	43514		
			11:59:03	8.85	20.29	124.24	0.02	0.02	805	44475		
			11:59:04	8.78	20.29	124.26	0.02	0.02	805	43514		
			11:59:05	8.84	20.29	124.30	0.02	0.02	805	41282		
			11:59:06	8.75	20.29	124.30	0.02	0.02	805	43048		
			11:59:07	8.92	20.30	124.26	0.02	0.02	805	39851		
			11:59:08	8.75	20.29	124.32	0.02	0.02	805	44972		
			11:59:09	8.97	20.29	124.29	0.02	0.02	805	42147		
			11:59:10	8.77	20.29	124.27	0.02	0.02	805	42147		
			11:59:11	8.90	20.29	124.24	0.02	0.02	805	44972		
			11:59:12	8.82	20.29	124.32	0.02	0.02	805	43048		
			11:59:13	8.92	20.29	124.30	0.02	0.02	805	47076		
			11:59:14	8.75	20.29	124.30	0.02	0.02	805	46264		
			11:59:15	8.89	20.29	124.29	0.02	0.02	805	40863		
			11:59:16	8.81	20.29	124.27	0.02	0.02	805	50313		
			11:59:17	8.82	20.29	124.30	0.02	0.02	805	42593		
			11:59:18	8.95	20.29	124.27	0.02	0.02	805	42593		
			11:59:19	8.86	20.29	124.30	0.02	0.02	805	42593		
			11:59:20	8.88	20.29	124.26	0.02	0.02	805	45480		
			11:59:21	8.90	20.28	124.26	0.04	0.04	805	21757		
			11:59:22	8.85	20.28	124.26	0.02	0.02	805	42147		
			11:59:23	8.92	20.28	124.24	0.02	0.02	805	49085		
			11:59:24	8.83	20.28	124.27	0.02	0.02	805	41710		
			11:59:25	8.84	20.28	124.29	0.02	0.02	805	43514		
			11:59:26	8.85	20.28	124.51	0.03	0.03	805	30150		
			11:59:27	8.89	20.28	124.46	0.04	0.04	805	21640		
			11:59:28	8.91	20.29	124.42	0.02	0.02	805	40250		
			11:59:29	8.83	20.29	124.44	0.03	0.03	805	31693		
			11:59:30	8.95	20.29	125.04	0.64	0.19	805	4178		
			11:59:31	8.75	20.29	124.92	1.94	1.36	805	592		
			11:59:32	8.99	20.29	124.44	0.99	0.51	805	1579		
			11:59:33	8.83	20.29	124.27	0.02	0.02	805	39851		
			11:59:34	8.89	20.28	124.32	0.02	0.02	805	41710		
			11:59:35	8.92	20.28	124.30	0.02	0.02	805	41710		
			11:59:36	8.84	20.28	124.29	0.02	0.02	805	44475		
			11:59:37	8.89	20.29	124.23	0.12	0.12	805	6545		
			11:59:38	8.87	20.28	124.26	0.02	0.02	805	43514		

**TABLE D-7**

Profile PRO-05 on September 21, 2022 (1156-1207 hours PDT) located at MZB (242 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>119</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>172</b>	<b>Minimum Average Dilution in Profile</b>
<b>194</b>	<b>Detected Plume Average Dilution</b>
<b>862</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
			11:59:39	8.95	20.28	124.24	0.02	0.02	805	45480		
			11:59:40	8.83	20.28	124.24	0.02	0.02	805	43514		
			11:59:41	8.89	20.28	124.24	0.02	0.02	805	46264		
			11:59:42	8.84	20.28	124.26	0.14	0.14	805	5725		
			11:59:43	8.83	20.28	124.27	0.02	0.02	805	43514		
			11:59:44	9.14	20.28	124.27	0.12	0.12	805	6647		
			11:59:45	9.69	20.28	124.27	0.03	0.03	805	23066		
			11:59:46	12.17	20.28	124.25	0.02	0.02	805	43048		
			11:59:47	14.36	20.29	124.24	0.02	0.02	805	45480		
			11:59:48	14.55	20.29	124.30	0.02	0.02	805	43514		
			11:59:49	14.71	20.29	124.27	0.09	0.09	805	9158		
			11:59:50	14.66	20.29	124.29	0.02	0.02	805	44475		
			11:59:51	14.60	20.29	124.24	0.02	0.02	805	43048		
			11:59:52	14.84	20.29	124.32	0.02	0.02	805	43048		
			11:59:53	14.58	20.29	124.26	0.02	0.02	805	42147		
			11:59:54	14.85	20.29	124.30	0.02	0.02	805	46802		
			11:59:55	14.71	20.29	124.25	0.02	0.02	805	42593		
			11:59:56	14.56	20.29	124.25	0.02	0.02	805	46532		
			11:59:57	14.89	20.29	124.22	0.02	0.02	805	44475		
			11:59:58	14.69	20.29	124.29	0.02	0.02	805	43989		
			11:59:59	14.71	20.29	124.27	0.02	0.02	805	42593		
			12:00:00	14.92	20.29	124.29	0.02	0.02	805	41071		
			12:00:01	14.65	20.29	124.30	0.02	0.02	805	41710		
			12:00:02	14.81	20.29	124.23	0.02	0.02	805	48494		
			12:00:03	14.76	20.29	124.22	0.32	0.32	805	2547		
			12:00:04	14.77	20.29	124.24	0.02	0.02	805	42593		
			12:00:05	14.79	20.29	124.22	0.02	0.02	805	44972		
			12:00:06	14.84	20.28	124.24	0.02	0.02	805	41710		
			12:00:07	14.67	20.28	124.22	0.02	0.02	805	46264		
			12:00:08	14.85	20.29	124.22	0.02	0.02	805	47076		
			12:00:09	14.77	20.29	124.22	0.02	0.02	805	42593		
			12:00:10	14.67	20.29	124.44	0.02	0.02	805	47353		
			12:00:11	14.84	20.29	124.61	0.02	0.02	805	45480		
			12:00:12	14.74	20.29	124.38	0.02	0.02	805	41282		
			12:00:13	14.81	20.29	124.74	0.02	0.02	805	43989		
			12:00:14	14.83	20.29	124.74	0.02	0.02	805	46264		
			12:00:15	14.72	20.29	124.49	0.02	0.02	805	43989		
			12:00:16	14.84	20.29	124.73	0.12	0.12	805	6582		
			12:00:17	14.78	20.29	124.70	1.44	0.92	805	878		
			12:00:18	14.70	20.29	124.85	2.02	1.44	805	560		

**TABLE D-7**

Profile PRO-05 on September 21, 2022 (1156-1207 hours PDT) located at MZB (242 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	119		Instantaneous Minimum Dilution in Profile	
										172		Minimum Average Dilution in Profile	
										194		Detected Plume Average Dilution	
										862		Profile Average Dilution	
								Dilution Calculations		Comments			
			12:00:19	14.84	20.29	124.97	1.65	1.10	805	732			
			12:00:20	14.73	20.29	124.99	1.25	0.74	805	1086			
			12:00:21	14.68	20.29	125.05	0.87	0.40	805	2012			
			12:00:22	14.81	20.29	125.16	1.38	0.86	805	937			
			12:00:23	14.66	20.29	125.26	2.20	1.59	805	506			
			12:00:24	14.74	20.29	125.16	2.45	1.82	805	442			
			12:00:25	14.80	20.29	124.97	1.88	1.31	805	614			
			12:00:26	14.74	20.29	124.91	1.54	1.00	805	805			
			12:00:27	14.84	20.29	124.97	1.34	0.82	805	977			
			12:00:28	14.78	20.29	124.92	1.72	1.17	805	689			
			12:00:29	14.77	20.29	124.91	1.58	1.04	805	777			
			12:00:30	14.88	20.29	125.05	1.49	0.96	805	837			
			12:00:31	14.74	20.29	125.18	1.51	0.97	805	828			
			12:00:32	14.83	20.29	125.22	2.07	1.47	805	546			
			12:00:33	14.80	20.29	125.11	2.54	1.90	805	424	640	Plume at 15 ft depth	
			12:00:34	14.80	20.29	125.28	2.34	1.72	805	469			
			12:00:35	14.75	20.29	125.46	2.34	1.72	805	467			
			12:00:36	14.82	20.29	125.37	2.27	1.66	805	485			
			12:00:37	14.79	20.29	125.22	1.47	0.94	805	857			
			12:00:38	14.81	20.29	125.47	1.70	1.14	805	705			
			12:00:39	14.84	20.29	125.64	2.34	1.72	805	467			
			12:00:40	14.76	20.29	125.49	2.52	1.88	805	428			
			12:00:41	14.89	20.29	125.80	2.51	1.87	805	430			
			12:00:42	14.72	20.29	125.81	1.67	1.12	805	716			
			12:00:43	14.87	20.29	125.10	1.77	1.21	805	667			
			12:00:44	14.81	20.29	124.65	0.70	0.25	805	3205			
			12:00:45	14.79	20.29	124.55	0.02	0.02	805	42593			
			12:00:46	14.86	20.29	124.31	0.02	0.02	805	40452			
			12:00:47	14.75	20.28	124.27	0.02	0.02	805	45480			
			12:00:48	14.76	20.28	124.26	0.02	0.02	805	45480			
			12:00:49	14.80	20.29	124.20	0.02	0.02	805	37269			
			12:00:50	14.73	20.29	124.26	0.02	0.02	805	42147			
			12:00:51	14.80	20.29	124.24	0.02	0.02	805	42147			
			12:00:52	14.77	20.29	124.22	0.02	0.02	805	45480			
			12:00:53	14.69	20.29	124.22	0.02	0.02	805	42147			
			12:00:54	14.69	20.29	124.40	0.15	0.15	805	5472			
			12:00:55	14.75	20.29	124.51	0.04	0.04	805	22805			
			12:00:56	14.67	20.29	124.70	0.98	0.50	805	1604			
			12:00:57	14.68	20.29	124.44	0.47	0.04	805	19788			
			12:00:58	14.72	20.29	124.27	0.02	0.02	805	46000			

**TABLE D-7**

Profile PRO-05 on September 21, 2022 (1156-1207 hours PDT) located at MZB (242 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>119</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>172</b>	<b>Minimum Average Dilution in Profile</b>
<b>194</b>	<b>Detected Plume Average Dilution</b>
<b>862</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
			12:00:59	14.65	20.29	124.22	0.02	0.02	805	43989		
			12:01:00	14.71	20.29	124.24	0.02	0.02	805	42593		
			12:01:01	14.67	20.29	124.26	0.02	0.02	805	44475		
			12:01:02	14.70	20.29	124.24	0.02	0.02	805	46000		
			12:01:03	14.61	20.29	124.32	0.02	0.02	805	45480		
			12:01:04	14.74	20.29	124.22	0.02	0.02	805	44475		
			12:01:05	14.69	20.29	124.27	0.02	0.02	805	46264		
			12:01:06	14.55	20.29	124.38	0.33	0.33	805	2447		
			12:01:07	14.70	20.29	124.30	0.03	0.03	805	24247		
			12:01:08	14.55	20.29	124.34	0.07	0.07	805	11616		
			12:01:09	14.51	20.29	124.34	0.07	0.07	805	11435		
			12:01:10	14.71	20.29	124.32	0.02	0.02	805	45480		
			12:01:11	14.46	20.29	124.27	0.02	0.02	805	43514		
			12:01:12	14.93	20.28	124.37	0.10	0.10	805	7955		
			12:01:13	15.50	20.28	124.40	0.13	0.13	805	6057		
			12:01:14	18.06	20.28	124.30	0.09	0.09	805	8750		
			12:01:15	20.00	20.28	124.38	0.37	0.37	805	2152		
			12:01:16	20.63	20.28	124.51	0.47	0.04	805	18037		
			12:01:17	20.78	20.28	124.57	0.91	0.43	805	1855		
			12:01:18	20.68	20.28	124.72	0.85	0.38	805	2094		
			12:01:19	20.84	20.28	124.68	0.38	0.38	805	2139		
			12:01:20	20.75	20.28	124.49	0.25	0.25	805	3264		
			12:01:21	20.55	20.28	124.36	0.14	0.14	805	5885		
			12:01:22	20.90	20.28	124.29	0.04	0.04	805	21640		
			12:01:23	20.63	20.28	124.32	0.02	0.02	805	43989		
			12:01:24	20.62	20.28	124.28	0.02	0.02	805	46802		
			12:01:25	20.90	20.28	124.22	0.02	0.02	805	44972		
			12:01:26	20.64	20.28	124.22	0.13	0.13	805	6108		
			12:01:27	20.76	20.28	124.25	0.02	0.02	805	41071		
			12:01:28	20.75	20.28	124.24	0.02	0.02	805	45739		
			12:01:29	20.63	20.28	124.20	0.02	0.02	805	43048		
			12:01:30	20.78	20.28	124.24	0.02	0.02	805	41710		
			12:01:31	20.70	20.28	124.20	0.02	0.02	805	47076		
			12:01:32	20.82	20.28	124.22	0.02	0.02	805	41710		
			12:01:33	20.66	20.28	124.20	0.02	0.02	805	50313		
			12:01:34	20.77	20.28	124.20	0.02	0.02	805	42593		
			12:01:35	20.76	20.28	124.20	0.02	0.02	805	41710		
			12:01:36	20.56	20.28	124.22	0.02	0.02	805	44475		
			12:01:37	20.78	20.28	124.18	0.02	0.02	805	43989		
			12:01:38	20.71	20.28	124.24	0.02	0.02	805	44475		



**TABLE D-7**

Profile PRO-05 on September 21, 2022 (1156-1207 hours PDT) located at MZB (242 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>119</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>172</b>	<b>Minimum Average Dilution in Profile</b>
<b>194</b>	<b>Detected Plume Average Dilution</b>
<b>862</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
			12:01:39	20.67	20.28	124.18	0.02	0.02	805	38702		
			12:01:40	20.88	20.28	124.18	0.03	0.03	805	24247		
			12:01:41	20.80	20.28	124.20	0.02	0.02	805	43989		
			12:01:42	20.70	20.28	124.20	0.02	0.02	805	44972		
			12:01:43	20.96	20.28	124.20	0.02	0.02	805	42593		
			12:01:44	20.87	20.28	124.22	0.02	0.02	805	43989		
			12:01:45	20.87	20.28	124.20	0.04	0.04	805	22423		
			12:01:46	21.05	20.28	124.22	0.02	0.02	805	44972		
			12:01:47	20.83	20.28	124.24	0.02	0.02	805	40250		
			12:01:48	20.95	20.28	124.22	0.02	0.02	805	42147		
			12:01:49	20.95	20.28	124.26	0.02	0.02	805	44475		
			12:01:50	20.75	20.28	124.20	0.02	0.02	805	47076		
			12:01:51	20.87	20.28	124.24	0.09	0.09	805	8994		
			12:01:52	20.85	20.28	124.22	0.02	0.02	805	47353		
			12:01:53	20.70	20.28	124.22	0.03	0.03	805	27951		
			12:01:54	20.77	20.28	124.20	0.02	0.02	805	45739		
			12:01:55	20.76	20.28	124.22	0.02	0.02	805	45480		
			12:01:56	20.60	20.28	124.24	0.02	0.02	805	46802		
			12:01:57	20.75	20.28	124.15	0.02	0.02	805	44722		
			12:01:58	20.68	20.28	124.22	0.02	0.02	805	45480		
			12:01:59	20.74	20.28	124.20	0.02	0.02	805	39078		
			12:02:00	20.76	20.28	124.24	0.02	0.02	805	43514		
			12:02:01	20.71	20.28	124.23	0.02	0.02	805	41282		
			12:02:02	20.70	20.28	124.24	0.02	0.02	805	44475		
			12:02:03	20.79	20.28	124.22	0.02	0.02	805	43048		
			12:02:04	20.70	20.29	124.29	0.02	0.02	805	42593		
			12:02:05	20.76	20.29	124.24	0.02	0.02	805	43989		
			12:02:06	20.88	20.29	124.29	0.02	0.02	805	47076		
			12:02:07	20.82	20.29	124.27	0.02	0.02	805	42147		
			12:02:08	21.00	20.29	124.29	0.02	0.02	805	46264		
			12:02:09	21.01	20.29	124.27	0.02	0.02	805	44475		
			12:02:10	21.01	20.29	124.32	0.02	0.02	805	48494		
			12:02:11	21.11	20.29	124.34	0.07	0.07	805	10997		
			12:02:12	21.01	20.29	124.34	0.02	0.02	805	34255		
			12:02:13	21.09	20.29	124.34	0.08	0.08	805	10000		
			12:02:14	21.01	20.29	124.31	0.11	0.11	805	7580		
			12:02:15	21.00	20.29	124.29	0.02	0.02	805	38333		
			12:02:16	21.02	20.29	124.32	0.09	0.09	805	8964		
			12:02:17	20.98	20.29	124.26	0.33	0.33	805	2471		
			12:02:18	20.94	20.29	124.29	0.02	0.02	805	42593		

**TABLE D-7**

Profile PRO-05 on September 21, 2022 (1156-1207 hours PDT) located at MZB (242 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	119		Instantaneous Minimum Dilution in Profile	
										862		Profile Average Dilution	
										194		Detected Plume Average Dilution	
										172		Minimum Average Dilution in Profile	
								Dilution Calculations		Comments			
			12:02:19	20.83	20.29	124.44	0.02	0.02	805	42147			
			12:02:20	20.79	20.29	124.53	0.02	0.02	805	46264			
			12:02:21	20.69	20.29	124.52	0.02	0.02	805	44972			
			12:02:22	20.45	20.29	124.57	0.31	0.31	805	2564			
			12:02:23	20.54	20.29	124.70	0.69	0.24	805	3341			
			12:02:24	20.38	20.29	124.68	0.35	0.35	805	2270			
			12:02:25	20.27	20.29	124.89	0.71	0.26	805	3091			
			12:02:26	20.21	20.29	125.09	2.10	1.51	805	534			
			12:02:27	20.08	20.29	125.26	2.03	1.44	805	559			
			12:02:28	19.77	20.29	125.16	1.45	0.92	805	875	786	Plume at 20 ft depth	
			12:02:29	19.69	20.29	125.06	1.52	0.98	805	819			
			12:02:30	19.75	20.29	124.80	1.21	0.70	805	1145			
			12:02:31	20.26	20.29	124.94	0.90	0.43	805	1869			
			12:02:32	21.36	20.29	124.95	0.87	0.40	805	2010			
			12:02:33	23.97	20.29	124.68	0.99	0.51	805	1581			
			12:02:34	25.22	20.29	124.42	0.31	0.31	805	2618			
			12:02:35	25.57	20.28	124.55	0.07	0.07	805	11926			
			12:02:36	25.60	20.28	124.49	0.11	0.11	805	7602			
			12:02:37	25.61	20.28	124.53	0.31	0.31	805	2593			
			12:02:38	25.71	20.28	124.92	1.07	0.58	805	1382			
			12:02:39	25.61	20.29	125.11	1.47	0.94	805	856			
			12:02:40	25.76	20.29	125.16	1.51	0.97	805	827	947	Plume at 25 ft depth	
			12:02:41	25.70	20.29	124.99	1.66	1.11	805	725			
			12:02:42	25.76	20.29	124.89	0.73	0.28	805	2867			
			12:02:43	25.99	20.29	124.70	0.32	0.32	805	2511			
			12:02:44	26.09	20.29	124.82	0.81	0.35	805	2298			
			12:02:45	26.22	20.28	124.91	1.34	0.82	805	977			
			12:02:46	26.41	20.28	124.74	0.95	0.47	805	1695			
			12:02:47	26.41	20.28	124.61	0.36	0.36	805	2256			
			12:02:48	26.55	20.28	124.57	0.34	0.34	805	2377			
			12:02:49	26.68	20.28	124.53	0.25	0.25	805	3183			
			12:02:50	26.61	20.28	124.56	1.13	0.63	805	1269			
			12:02:51	26.73	20.28	124.68	1.49	0.96	805	841			
			12:02:52	26.69	20.28	124.70	1.22	0.71	805	1127			
			12:02:53	26.66	20.29	124.72	0.70	0.25	805	3249			
			12:02:54	26.62	20.28	124.78	0.58	0.14	805	5596			
			12:02:55	26.52	20.28	124.89	0.54	0.10	805	7826			
			12:02:56	26.47	20.28	124.92	0.64	0.20	805	4039			
			12:02:57	26.41	20.28	124.85	0.69	0.24	805	3339			
			12:02:58	26.28	20.28	124.80	1.20	0.70	805	1152			

**TABLE D-7**

Profile PRO-05 on September 21, 2022 (1156-1207 hours PDT) located at MZB (242 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

										119	Instantaneous Minimum Dilution in Profile	
										172	Minimum Average Dilution in Profile	
										194	Detected Plume Average Dilution	
										862	Profile Average Dilution	
Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
			12:02:59	26.28	20.28	124.87	1.03	0.55	805	1473		
			12:03:00	26.19	20.28	124.87	1.10	0.61	805	1321		
			12:03:01	26.13	20.28	124.88	1.14	0.65	805	1242	2195	Plume at 26 ft depth
			12:03:02	26.07	20.28	124.76	0.68	0.23	805	3519		
			12:03:03	26.05	20.28	124.61	0.24	0.24	805	3315		
			12:03:04	26.00	20.28	124.55	0.19	0.19	805	4167		
			12:03:05	25.92	20.28	124.59	0.34	0.34	805	2355		
			12:03:06	25.96	20.28	124.72	0.98	0.50	805	1603		
			12:03:07	25.88	20.28	124.63	0.26	0.26	805	3056		
			12:03:08	25.87	20.28	124.53	0.09	0.09	805	8760		
			12:03:09	25.86	20.28	124.56	0.34	0.34	805	2370		
			12:03:10	25.85	20.28	124.55	0.27	0.27	805	3016		
			12:03:11	25.81	20.28	124.38	0.13	0.13	805	6319		
			12:03:12	25.83	20.28	124.46	0.40	0.40	805	2006		
			12:03:13	25.92	20.28	124.59	0.95	0.48	805	1688		
			12:03:14	26.10	20.28	124.63	0.94	0.47	805	1722		
			12:03:15	26.25	20.29	124.46	0.14	0.14	805	5829		
			12:03:16	26.25	20.29	124.44	0.02	0.02	805	45480		
			12:03:17	26.52	20.29	124.36	0.02	0.02	805	45480		
			12:03:18	26.53	20.29	124.39	0.05	0.05	805	15275		
			12:03:19	26.53	20.29	124.46	0.03	0.03	805	28345		
			12:03:20	26.68	20.29	124.59	0.86	0.39	805	2052		
			12:03:21	26.55	20.29	124.65	0.75	0.30	805	2727		
			12:03:22	26.57	20.29	124.85	1.01	0.53	805	1521		
			12:03:23	26.59	20.29	124.94	0.98	0.50	805	1608		
			12:03:24	26.54	20.29	124.92	1.16	0.66	805	1212	2489	Plume at 26 ft depth
			12:03:25	26.55	20.29	124.87	0.81	0.35	805	2333		
			12:03:26	26.55	20.29	124.63	0.67	0.22	805	3622		
			12:03:27	26.53	20.29	124.57	0.28	0.28	805	2856		
			12:03:28	26.61	20.29	124.67	0.55	0.11	805	7130		
			12:03:29	26.58	20.29	124.76	1.07	0.58	805	1377		
			12:03:30	26.56	20.29	124.85	1.07	0.58	805	1391		
			12:03:31	26.69	20.29	124.63	0.39	0.39	805	2044		
			12:03:32	26.50	20.29	124.46	0.13	0.13	805	6226		
			12:03:33	26.63	20.29	124.53	0.36	0.36	805	2259		
			12:03:34	26.60	20.29	124.51	0.34	0.34	805	2373		
			12:03:35	26.45	20.29	124.84	0.57	0.13	805	6255		
			12:03:36	26.60	20.29	125.71	2.65	1.99	805	404		
			12:03:37	26.34	20.29	126.05	4.41	3.57	805	225		
			12:03:38	26.43	20.29	126.26	4.22	3.41	805	236		

**TABLE D-7**

Profile PRO-05 on September 21, 2022 (1156-1207 hours PDT) located at MZB (242 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

										119	Instantaneous Minimum Dilution in Profile	
										172	Minimum Average Dilution in Profile	
										194	Detected Plume Average Dilution	
										862	Profile Average Dilution	
Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
			12:03:39	26.50	20.29	126.31	4.78	3.91	805	206		
			12:03:40	26.39	20.29	125.80	3.22	2.51	805	321		
			12:03:41	26.44	20.29	125.18	1.43	0.91	805	888		
			12:03:42	26.54	20.29	124.94	0.86	0.40	805	2037		
			12:03:43	28.08	20.29	125.75	2.34	1.72	805	467		
			12:03:44	31.66	20.29	125.97	3.96	3.17	805	254		
			12:03:45	32.51	20.29	125.95	4.14	3.34	805	241		
			12:03:46	32.43	20.29	125.04	2.68	2.03	805	397		
			12:03:47	32.28	20.28	125.00	2.04	1.45	805	555		
			12:03:48	32.38	20.28	125.16	2.21	1.61	805	501		
			12:03:49	32.44	20.28	125.39	2.69	2.03	805	396	485	Plume at 32 ft depth
			12:03:50	32.54	20.29	125.81	3.37	2.65	805	304		
			12:03:51	32.47	20.29	125.57	2.23	1.62	805	498		
			12:03:52	32.51	20.29	125.16	1.87	1.30	805	621		
			12:03:53	32.55	20.29	125.07	2.00	1.42	805	567		
			12:03:54	32.39	20.29	124.82	2.32	1.70	805	472		
			12:03:55	32.46	20.29	124.85	1.59	1.05	805	769		
			12:03:56	32.44	20.29	124.75	1.63	1.09	805	742		
			12:03:57	32.23	20.29	124.68	0.89	0.42	805	1914		
			12:03:58	32.45	20.29	124.61	0.68	0.23	805	3427		
			12:03:59	32.33	20.29	124.44	0.22	0.22	805	3679		
			12:04:00	32.27	20.29	124.36	0.07	0.07	805	10762		
			12:04:01	32.56	20.29	124.31	0.02	0.02	805	45480		
			12:04:02	32.37	20.29	124.30	0.02	0.02	805	43514		
			12:04:03	32.69	20.29	124.27	0.02	0.02	805	42593		
			12:04:04	32.64	20.29	124.27	0.02	0.02	805	42147		
			12:04:05	32.55	20.29	124.22	0.02	0.02	805	46264		
			12:04:06	32.79	20.29	124.26	0.02	0.02	805	46264		
			12:04:07	32.51	20.29	124.26	0.22	0.22	805	3623		
			12:04:08	32.77	20.29	124.26	0.08	0.08	805	10321		
			12:04:09	32.63	20.29	124.30	0.02	0.02	805	48494		
			12:04:10	32.63	20.29	124.29	0.02	0.02	805	44722		
			12:04:11	32.80	20.29	124.24	0.02	0.02	805	47353		
			12:04:12	32.58	20.29	124.29	0.02	0.02	805	41071		
			12:04:13	32.64	20.29	124.44	0.08	0.08	805	10468		
			12:04:14	32.62	20.29	124.74	0.55	0.12	805	6857		
			12:04:15	32.43	20.29	124.72	0.58	0.14	805	5717		
			12:04:16	32.77	20.29	124.52	0.20	0.20	805	4078		
			12:04:17	32.45	20.29	124.51	0.15	0.15	805	5282		
			12:04:18	32.51	20.29	124.59	0.48	0.05	805	16096		

**TABLE D-7**

Profile PRO-05 on September 21, 2022 (1156-1207 hours PDT) located at MZB (242 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>119</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>172</b>	<b>Minimum Average Dilution in Profile</b>
<b>194</b>	<b>Detected Plume Average Dilution</b>
<b>862</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
			12:04:19	32.65	20.29	124.57	0.04	0.04	805	22115		
			12:04:20	32.39	20.29	124.53	0.14	0.14	805	5606		
			12:04:21	32.64	20.29	124.51	0.23	0.23	805	3436		
			12:04:22	32.51	20.29	124.86	0.06	0.06	805	13784		
			12:04:23	32.52	20.29	125.65	1.87	1.29	805	622		
			12:04:24	32.68	20.29	126.22	3.77	3.01	805	268		
			12:04:25	32.66	20.29	126.31	4.46	3.62	805	222		
			12:04:26	32.57	20.29	126.12	4.32	3.50	805	230		
			12:04:27	32.82	20.29	126.23	4.25	3.44	805	234		
			12:04:28	32.51	20.29	126.18	4.37	3.55	805	227		
			12:04:29	32.81	20.29	126.06	4.12	3.32	805	242		
			12:04:30	32.64	20.29	126.10	3.83	3.06	805	263		
			12:04:31	32.69	20.29	126.12	3.78	3.02	805	267		
			12:04:32	32.74	20.29	126.12	4.21	3.40	805	237		
			12:04:33	32.63	20.29	126.14	4.19	3.38	805	238		
			12:04:34	32.79	20.29	126.18	4.44	3.60	805	223		
			12:04:35	32.68	20.29	126.21	3.89	3.11	805	259		
			12:04:36	32.78	20.29	126.06	3.68	2.92	805	276		
			12:04:37	32.67	20.29	126.10	3.80	3.03	805	266	233	Plume at 32 ft depth
			12:04:38	32.70	20.29	126.04	3.77	3.00	805	268		
			12:04:39	32.71	20.29	126.10	4.05	3.26	805	247		
			12:04:40	32.69	20.29	126.08	4.22	3.41	805	236		
			12:04:41	32.75	20.29	126.21	4.42	3.58	805	225		
			12:04:42	32.77	20.29	126.32	4.16	3.35	805	240		
			12:04:43	32.69	20.29	126.47	4.12	3.32	805	242		
			12:04:44	32.79	20.29	126.42	4.43	3.60	805	224		
			12:04:45	32.70	20.29	126.30	4.46	3.63	805	222		
			12:04:46	32.70	20.29	126.28	4.48	3.64	805	221		
			12:04:47	32.76	20.29	126.14	4.39	3.56	805	226		
			12:04:48	32.64	20.29	126.28	4.41	3.58	805	225		
			12:04:49	32.74	20.29	126.45	4.85	3.98	805	202		
			12:04:50	32.58	20.29	126.54	5.34	4.41	805	182		
			12:04:51	32.76	20.29	126.33	5.06	4.16	805	193		
			12:04:52	32.53	20.29	126.10	4.60	3.75	805	215		
			12:04:53	32.74	20.29	125.85	3.85	3.07	805	262		
			12:04:54	32.65	20.29	125.83	3.72	2.96	805	272		
			12:04:55	32.66	20.29	125.99	4.17	3.36	805	239		
			12:04:56	32.76	20.29	125.99	3.45	2.71	805	297		
			12:04:57	32.65	20.29	126.04	3.91	3.13	805	258		
			12:04:58	32.79	20.29	126.16	4.36	3.53	805	228		

**TABLE D-7**

Profile PRO-05 on September 21, 2022 (1156-1207 hours PDT) located at MZB (242 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	119		Instantaneous Minimum Dilution in Profile	
										172		Minimum Average Dilution in Profile	
										194		Detected Plume Average Dilution	
										862		Profile Average Dilution	
									Dilution Calculations		Comments		
			12:04:59	32.62	20.29	126.18	4.51	3.66	805	220			
			12:05:00	32.82	20.29	126.12	4.43	3.60	805	224			
			12:05:01	32.65	20.29	126.18	4.41	3.58	805	225			
			12:05:02	32.86	20.29	126.30	4.69	3.83	805	210			
			12:05:03	32.63	20.29	126.31	4.87	3.99	805	202			
			12:05:04	32.87	20.29	126.43	4.80	3.93	805	205			
			12:05:05	32.67	20.29	126.45	4.60	3.75	805	215			
			12:05:06	32.75	20.29	126.35	4.75	3.89	805	207			
			12:05:07	32.81	20.29	126.34	4.68	3.82	805	211			
			12:05:08	32.63	20.29	126.37	4.36	3.53	805	228			
			12:05:09	32.82	20.29	126.28	4.66	3.80	805	212			
			12:05:10	32.63	20.29	126.33	4.25	3.43	805	235			
			12:05:11	32.75	20.29	126.30	4.39	3.56	805	226			
			12:05:12	32.71	20.29	126.29	4.30	3.48	805	232			
			12:05:13	32.71	20.29	126.33	4.86	3.98	805	202			
			12:05:14	32.73	20.29	126.35	4.70	3.84	805	210			
			12:05:15	32.71	20.29	126.35	4.44	3.61	805	223			
			12:05:16	32.79	20.29	126.29	4.43	3.59	805	224			
			12:05:17	32.67	20.29	126.27	4.24	3.42	805	235			
			12:05:18	32.66	20.29	126.21	3.72	2.96	805	272			
			12:05:19	32.82	20.29	126.12	3.86	3.08	805	261			
			12:05:20	32.60	20.29	125.99	3.94	3.15	805	255			
			12:05:21	32.71	20.29	126.07	3.76	2.99	805	269			
			12:05:22	32.68	20.29	126.88	5.20	4.29	805	188			
			12:05:23	32.62	20.29	127.07	6.82	5.74	805	140			
			12:05:24	32.71	20.29	127.36	7.69	6.52	805	123			
			12:05:25	32.63	20.29	127.48	7.80	6.62	805	122			
			12:05:26	32.74	20.29	127.76	7.69	6.52	805	123			
			12:05:27	32.64	20.29	127.67	7.98	6.78	805	119	172	Plume at 32 ft depth	
			12:05:28	32.80	20.29	127.40	7.82	6.64	805	121			
			12:05:29	32.64	20.29	127.36	6.60	5.54	805	145			
			12:05:30	32.73	20.29	127.09	6.54	5.49	805	147			
			12:05:31	32.74	20.29	126.81	6.11	5.10	805	158			
			12:05:32	32.65	20.29	126.71	6.00	5.00	805	161			
			12:05:33	32.75	20.29	126.54	6.10	5.09	805	158			
			12:05:34	32.71	20.29	126.37	5.53	4.59	805	175			
			12:05:35	32.68	20.29	126.41	4.64	3.79	805	213			
			12:05:36	32.73	20.29	126.43	4.62	3.76	805	214			
			12:05:37	32.66	20.29	126.45	4.60	3.75	805	215			
			12:05:38	32.67	20.29	126.81	5.02	4.12	805	195			

**TABLE D-7**

Profile PRO-05 on September 21, 2022 (1156-1207 hours PDT) located at MZB (242 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

										119	Instantaneous Minimum Dilution in Profile	
										172	Minimum Average Dilution in Profile	
										194	Detected Plume Average Dilution	
										862	Profile Average Dilution	
Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
			12:05:39	32.70	20.29	127.04	5.71	4.74	805	170		
			12:05:40	32.63	20.29	127.15	6.39	5.35	805	150		
			12:05:41	32.71	20.29	127.03	6.43	5.39	805	149		
			12:05:42	32.69	20.29	126.83	5.99	5.00	805	161		
			12:05:43	32.67	20.29	127.06	6.00	5.01	805	161		
			12:05:44	32.69	20.29	127.10	7.36	6.22	805	129		
			12:05:45	32.59	20.29	127.27	7.50	6.35	805	127		
			12:05:46	32.64	20.29	127.38	7.17	6.06	805	133		
			12:05:47	32.60	20.29	127.42	7.56	6.41	805	126		
			12:05:48	32.58	20.29	127.29	6.54	5.49	805	147		
			12:05:49	32.64	20.29	126.94	6.05	5.05	805	160		
			12:05:50	32.58	20.29	126.75	7.02	5.92	805	136	177	Plume at 32 ft depth
			12:05:51	32.55	20.29	126.64	5.95	4.96	805	162		
			12:05:52	32.64	20.29	126.50	4.94	4.06	805	199		
			12:05:53	32.55	20.29	126.45	4.57	3.72	805	217		
			12:05:54	32.66	20.29	126.52	5.13	4.23	805	191		
			12:05:55	32.56	20.29	126.56	5.07	4.17	805	193		
			12:05:56	32.46	20.29	126.52	4.87	3.99	805	202		
			12:05:57	32.70	20.29	126.64	4.47	3.63	805	222		
			12:05:58	32.39	20.29	126.58	4.96	4.07	805	198		
			12:05:59	32.61	20.29	126.93	5.33	4.40	805	183		
			12:06:00	32.60	20.29	127.05	5.34	4.42	805	182		
			12:06:01	32.48	20.29	127.46	6.27	5.25	805	153		
			12:06:02	32.72	20.29	127.70	6.40	5.36	805	150		
			12:06:03	32.52	20.29	126.69	3.92	3.14	805	257		
			12:06:04	32.71	20.29	126.64	4.44	3.61	805	223		
			12:06:05	32.63	20.29	127.12	6.74	5.66	805	142		
			12:06:06	32.64	20.29	127.31	5.74	4.77	805	169		
			12:06:07	32.71	20.29	127.16	4.53	3.69	805	218		
			12:06:08	32.60	20.29	126.85	5.14	4.23	805	190		
			12:06:09	32.90	20.29	126.26	4.94	4.05	805	199		
			12:06:10	33.42	20.29	126.04	4.40	3.57	805	226		
			12:06:11	36.06	20.29	126.06	4.03	3.24	805	249		
			12:06:12	37.96	20.29	125.95	4.27	3.45	805	233		
			12:06:13	38.11	20.29	125.95	4.30	3.48	805	231		
			12:06:14	38.23	20.29	125.72	3.41	2.69	805	300		
			12:06:15	38.27	20.29	125.52	3.47	2.73	805	295		
			12:06:16	38.30	20.29	125.37	3.33	2.61	805	308	312	Plume at 38 ft depth
			12:06:17	38.38	20.29	125.56	2.69	2.03	805	396		
			12:06:18	38.31	20.29	125.72	2.80	2.13	805	378		

**TABLE D-7**

Profile PRO-05 on September 21, 2022 (1156-1207 hours PDT) located at MZB (242 feet) North of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>119</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>172</b>	<b>Minimum Average Dilution in Profile</b>
<b>194</b>	<b>Detected Plume Average Dilution</b>
<b>862</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
			12:06:19	38.48	20.29	125.78	3.65	2.89	805	278		
			12:06:20	38.39	20.29	125.91	3.65	2.89	805	278		
			12:06:21	38.40	20.29	125.71	3.00	2.32	805	348		
			12:06:22	38.31	20.29	125.43	2.40	1.77	805	454		
			12:06:23	38.22	20.29	125.20	1.56	1.02	805	789		
			12:06:24	38.28	20.29	125.20	1.98	1.40	805	575		
			12:06:25	38.24	20.29	125.28	1.90	1.33	805	607		
			12:06:26	38.24	20.29	125.40	1.84	1.27	805	634		
			12:06:27	38.25	20.29	125.32	1.69	1.14	805	706		
			12:06:28	38.09	20.29	125.24	1.48	0.95	805	845		
			12:06:29	38.12	20.29	125.35	1.35	0.83	805	967		
			12:06:30	37.93	20.29	125.39	2.18	1.57	805	511		
			12:06:31	37.91	20.29	125.18	2.07	1.48	805	544		
			12:06:32	37.78	20.29	124.86	1.24	0.74	805	1094		
			12:06:33	37.75	20.29	124.70	0.18	0.18	805	4462		
			12:06:34	37.80	20.29	124.44	0.19	0.19	805	4228		
			12:06:35	37.83	20.29	124.34	0.02	0.02	805	47076		
			12:06:36	37.93	20.29	124.34	0.02	0.02	805	49691		
			12:06:37	37.92	20.29	124.32	0.02	0.02	805	45739		
			12:06:38	37.95	20.29	124.34	0.02	0.02	805	45480		
			12:06:39	38.18	20.29	124.32	0.02	0.02	805	46264		
			12:06:40	38.06	20.29	124.27	0.03	0.03	805	24693		
			12:06:41	38.22	20.29	124.36	0.03	0.03	805	27759		
			12:06:42	38.22	20.29	124.87	1.07	0.58	805	1390		
			12:06:43	38.31	20.29	125.22	1.42	0.90	805	895		
			12:06:44	38.31	20.29	125.68	2.84	2.17	805	371		
			12:06:45	38.46	20.29	125.57	3.36	2.64	805	305		
			12:06:46	38.26	20.29	125.47	2.85	2.17	805	370		
			12:06:47	38.48	20.29	125.41	3.48	2.74	805	294		
			12:06:48	38.29	20.29	125.47	3.08	2.39	805	337		
			12:06:49	38.38	20.29	125.54	2.25	1.64	805	490		
			12:06:50	38.39	20.29	125.59	2.52	1.88	805	428		
			12:06:51	38.29	20.29	125.53	2.74	2.08	805	387		
			12:06:52	38.39	20.29	125.49	2.85	2.18	805	370	357	Plume at 38 ft depth
			12:06:53	38.43	20.29	125.64	3.83	3.06	805	263		
			12:06:54	38.24	20.29	125.83	3.57	2.82	805	285		
			12:06:55	38.42	20.29	125.83	3.22	2.51	805	320		
			12:06:56	38.30	20.29	125.78	3.01	2.32	805	347		
			12:06:57	38.30	20.29	125.61	2.86	2.18	805	369		
			12:06:58	38.37	20.29	125.66	2.65	2.00	805	403		



**TABLE D-7**

Profile PRO-05 on September 21, 2022 (1156-1207 hours PDT) located at MZB (242 feet) North of SCTP Outfall Diffuser  
*Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study*

<b>119</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>172</b>	<b>Minimum Average Dilution in Profile</b>
<b>194</b>	<b>Detected Plume Average Dilution</b>
<b>862</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
			12:06:59	38.35	20.29	125.68	2.88	2.20	805	366		
			12:07:00	38.31	20.29	125.72	2.86	2.18	805	369		

**TABLE D-8**

Transect TRN-01 on September 21, 2022 (1215-1223 hours PDT) located along North MZB (242 feet from Diffuser)

Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>113</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>194</b>	<b>Minimum Average Dilution in Profile</b>
<b>334</b>	<b>Detected Plume Average Dilution</b>
<b>387</b>	<b>Transect Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Transect Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
TRN-1 (Transect along North Mixing Zone Boundary (242 ft))	38 ft	0.30 m/sec 357 deg. (mag.) Ebb tide	12:15:42	5.02	20.10	123.12	0.02	0.02	785	40674		
			12:15:43	6.28	20.18	123.51	0.02	0.02	785	41099		
			12:15:44	8.05	20.23	123.20	0.02	0.02	785	40256		
			12:15:45	9.37	20.09	123.22	0.02	0.02	785	44602		
			12:15:46	10.76	20.15	123.25	0.02	0.02	785	42896		
			12:15:47	12.19	20.21	123.18	0.02	0.02	785	41099		
			12:15:48	13.06	20.11	123.01	0.02	0.02	785	40256		
			12:15:49	13.78	20.14	123.35	0.02	0.02	785	42432		
			12:15:50	15.00	20.20	123.21	0.02	0.02	785	43370		
			12:15:51	16.24	20.17	123.21	0.02	0.02	785	38107		
			12:15:52	17.79	20.17	123.17	0.02	0.02	785	39250		
			12:15:53	19.27	20.11	123.19	0.02	0.02	785	44857		
			12:15:54	20.67	20.13	123.42	0.02	0.02	785	44350		
			12:15:55	21.69	20.21	123.29	0.02	0.02	785	39848		
			12:15:56	22.14	20.14	123.17	0.02	0.02	785	41979		
			12:15:57	22.78	20.10	123.45	0.02	0.02	785	38480		
			12:15:58	24.06	20.20	123.67	0.02	0.02	785	44857		
			12:15:59	24.80	20.23	123.51	0.02	0.02	785	42432		
			12:16:00	25.96	20.23	123.73	0.02	0.02	785	32983		
			12:16:01	26.79	20.25	123.61	0.02	0.02	785	42432		
			12:16:02	27.46	20.23	123.46	0.02	0.02	785	39646		
			12:16:03	27.99	20.19	123.36	0.02	0.02	785	39447		
			12:16:04	28.22	20.10	123.36	0.02	0.02	785	43370		
			12:16:05	28.81	20.07	123.38	0.02	0.02	785	41099		
			12:16:06	29.34	20.12	123.32	0.02	0.02	785	41099		
			12:16:07	29.68	20.07	123.52	0.02	0.02	785	42896		
			12:16:08	30.98	20.18	123.94	0.23	0.23	785	3352		
			12:16:09	31.68	20.23	123.71	0.03	0.03	785	22493		
			12:16:10	32.26	20.18	123.78	0.02	0.02	785	41534		
			12:16:11	33.23	20.21	123.92	0.02	0.02	785	41979		
12:16:12	33.62	20.21	123.59	0.02	0.02	785	42432					
12:16:13	33.76	20.12	123.58	0.02	0.02	785	44857					
12:16:14	33.96	20.09	123.56	0.02	0.02	785	40051					
12:16:15	34.58	20.10	123.67	0.32	0.32	785	2430					
12:16:16	34.94	20.14	123.53	0.20	0.20	785	3953					
12:16:17	35.27	20.09	123.56	0.23	0.23	785	3432					

**TABLE D-8**

Transect TRN-01 on September 21, 2022 (1215-1223 hours PDT) located along North MZB (242 feet from Diffuser)

Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>113</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>194</b>	<b>Minimum Average Dilution in Profile</b>
<b>334</b>	<b>Detected Plume Average Dilution</b>
<b>387</b>	<b>Transect Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Transect Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			12:16:18	35.45	20.07	123.48	0.08	0.08	785	10397		
			12:16:19	35.29	20.05	123.53	0.02	0.02	785	41979		
			12:16:20	35.09	20.04	123.51	0.02	0.02	785	44350		
			12:16:21	35.07	20.03	123.46	0.02	0.02	785	45115		
			12:16:22	35.18	20.03	123.72	0.18	0.18	785	4455		
			12:16:23	35.21	20.21	124.53	0.53	0.10	785	8136		
			12:16:24	35.20	20.27	124.82	0.87	0.40	785	1971		
			12:16:25	35.13	20.28	125.18	0.59	0.15	785	5279		
			12:16:26	35.14	20.28	125.30	1.46	0.93	785	845		East edge of discharge plume
			12:16:27	35.18	20.28	125.09	1.25	0.75	785	1052		
			12:16:28	35.07	20.28	125.56	1.69	1.14	785	688		
			12:16:29	35.18	20.29	126.32	4.43	3.60	785	218		
			12:16:30	35.10	20.29	126.64	5.04	4.15	785	189		
			12:16:31	35.16	20.29	126.38	4.74	3.88	785	203	366	
			12:16:32	35.11	20.29	125.30	2.40	1.78	785	442		
			12:16:33	35.26	20.28	124.91	1.55	1.01	785	777		
			12:16:34	35.06	20.28	124.96	0.70	0.25	785	3181		
			12:16:35	35.21	20.28	124.72	3.78	3.01	785	261		Inside discharge plume
			12:16:36	35.12	20.28	124.78	3.67	2.91	785	269		
			12:16:37	35.16	20.28	124.86	0.77	0.31	785	2493		
			12:16:38	35.01	20.29	124.96	1.12	0.62	785	1260		
			12:16:39	35.22	20.29	125.28	1.69	1.14	785	688		
			12:16:40	34.82	20.29	125.11	0.86	0.39	785	2017		
			12:16:41	35.15	20.29	125.37	0.39	0.39	785	1999		
			12:16:42	35.45	20.29	125.26	0.62	0.18	785	4307		
			12:16:43	36.00	20.29	125.01	1.04	0.55	785	1426		
			12:16:44	36.65	20.28	124.96	0.91	0.44	785	1805		
			12:16:45	37.47	20.28	124.99	0.81	0.35	785	2264		
			12:16:46	37.47	20.28	124.92	0.45	0.03	785	26559		
			12:16:47	37.78	20.28	125.32	0.94	0.47	785	1677		
			12:16:48	37.51	20.28	125.32	1.55	1.01	785	777		
			12:16:49	37.83	20.28	125.11	1.06	0.57	785	1372		
			12:16:50	38.10	20.28	125.11	0.88	0.41	785	1927		
			12:16:51	38.27	20.28	125.11	0.52	0.09	785	8979		
			12:16:52	38.29	20.28	125.11	0.92	0.45	785	1755		
			12:16:53	37.96	20.28	124.90	1.05	0.57	785	1388		

**TABLE D-8**

Transect TRN-01 on September 21, 2022 (1215-1223 hours PDT) located along North MZB (242 feet from Diffuser)

Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>113</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>194</b>	<b>Minimum Average Dilution in Profile</b>
<b>334</b>	<b>Detected Plume Average Dilution</b>
<b>387</b>	<b>Transect Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Transect Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			12:16:54	38.17	20.28	124.78	0.24	0.24	785	3225		
			12:16:55	37.85	20.28	124.87	0.21	0.21	785	3811		
			12:16:56	38.24	20.28	124.94	0.80	0.34	785	2290		
			12:16:57	38.19	20.28	124.82	0.44	0.01	785	56655		
			12:16:58	38.32	20.28	124.74	0.06	0.06	785	12362		
			12:16:59	38.07	20.28	124.57	0.02	0.02	785	41534		
			12:17:00	38.15	20.28	124.65	0.04	0.04	785	19527		
			12:17:01	38.09	20.28	124.79	0.25	0.25	785	3136		
			12:17:02	37.66	20.28	124.86	3.27	2.56	785	307		Inside discharge plume
			12:17:03	37.71	20.28	125.11	1.21	0.70	785	1114		
			12:17:04	37.49	20.28	125.47	2.67	2.02	785	389		Inside discharge plume
			12:17:05	37.16	20.28	125.93	3.04	2.35	785	334		
			12:17:06	37.31	20.28	125.38	1.25	0.75	785	1054		
			12:17:07	37.25	20.28	124.90	0.08	0.08	785	9268		
			12:17:08	37.04	20.28	124.90	0.67	0.23	785	3481		
			12:17:09	37.23	20.28	124.89	0.15	0.15	785	5074		
			12:17:10	37.31	20.28	124.65	0.02	0.02	785	40051		
			12:17:11	37.33	20.28	124.51	0.02	0.02	785	47289		
			12:17:12	37.68	20.28	124.44	0.02	0.02	785	44602		
			12:17:13	37.72	20.28	124.42	0.02	0.02	785	41534		
			12:17:14	37.89	20.28	124.38	0.02	0.02	785	44350		
			12:17:15	38.16	20.28	124.31	0.02	0.02	785	39250		
			12:17:16	38.20	20.28	124.29	0.02	0.02	785	45376		
			12:17:17	38.37	20.28	124.82	0.55	0.11	785	6975		
			12:17:18	38.53	20.28	125.11	1.01	0.53	785	1491		
			12:17:19	38.55	20.28	124.98	0.79	0.33	785	2379		
			12:17:20	38.77	20.28	125.39	1.76	1.20	785	652		
			12:17:21	38.71	20.28	125.83	3.24	2.53	785	310		
			12:17:22	38.86	20.28	125.85	3.22	2.51	785	312		
			12:17:23	38.86	20.28	125.87	3.20	2.50	785	314		
			12:17:24	38.92	20.28	125.93	3.37	2.65	785	296		
			12:17:25	38.95	20.28	125.87	3.46	2.72	785	288		
			12:17:26	38.90	20.28	125.85	3.36	2.64	785	297		
			12:17:27	39.02	20.28	125.87	3.38	2.65	785	296		
			12:17:28	38.87	20.28	125.91	3.24	2.52	785	311		
			12:17:29	39.05	20.28	125.89	2.95	2.27	785	346	336	Discharge plume main body

**TABLE D-8**

Transect TRN-01 on September 21, 2022 (1215-1223 hours PDT) located along North MZB (242 feet from Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>113</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>194</b>	<b>Minimum Average Dilution in Profile</b>
<b>334</b>	<b>Detected Plume Average Dilution</b>
<b>387</b>	<b>Transect Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Transect Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			12:17:30	38.92	20.28	125.80	2.80	2.13	785	368		
			12:17:31	38.96	20.28	125.87	3.16	2.45	785	320		
			12:17:32	39.01	20.28	125.89	3.18	2.47	785	317		
			12:17:33	38.91	20.28	125.89	2.75	2.09	785	375		
			12:17:34	38.98	20.28	125.80	2.85	2.18	785	360		
			12:17:35	38.98	20.28	125.65	3.17	2.46	785	319		
			12:17:36	38.90	20.28	125.74	3.07	2.38	785	330		
			12:17:37	38.88	20.28	125.53	2.95	2.27	785	346		
			12:17:38	38.85	20.28	125.39	2.03	1.45	785	542		
			12:17:39	38.75	20.28	125.16	1.17	0.67	785	1168		
			12:17:40	38.62	20.28	124.90	0.74	0.29	785	2711		
			12:17:41	38.63	20.28	124.85	0.54	0.11	785	7128		
			12:17:42	38.47	20.28	124.96	0.66	0.22	785	3627		
			12:17:43	38.28	20.28	124.96	0.72	0.26	785	2970		
			12:17:44	38.32	20.28	125.26	2.66	2.01	785	391		
			12:17:45	38.12	20.28	125.35	1.87	1.30	785	602		Inside discharge plume
			12:17:46	38.06	20.28	125.30	1.33	0.82	785	962		
			12:17:47	38.14	20.28	125.49	2.08	1.49	785	527		
			12:17:48	38.21	20.28	125.59	2.12	1.53	785	514		
			12:17:49	38.34	20.28	125.37	1.55	1.02	785	772		
			12:17:50	38.48	20.28	125.28	1.09	0.60	785	1319		
			12:17:51	38.64	20.28	125.18	0.65	0.20	785	3835		
			12:17:52	38.71	20.28	125.26	1.69	1.14	785	687		
			12:17:53	38.83	20.28	125.18	2.02	1.44	785	546		
			12:17:54	38.93	20.28	125.13	1.29	0.78	785	1003		
			12:17:55	38.85	20.28	125.11	1.22	0.71	785	1100		
			12:17:56	38.90	20.28	125.07	0.97	0.49	785	1592		
			12:17:57	38.96	20.28	125.03	0.64	0.19	785	4027		
			12:17:58	38.79	20.28	124.97	0.99	0.51	785	1543		
			12:17:59	38.91	20.28	124.97	0.89	0.42	785	1861		
			12:18:00	38.91	20.28	124.95	0.67	0.22	785	3593		
			12:18:01	38.80	20.28	125.05	0.83	0.37	785	2136		
			12:18:02	39.03	20.28	125.03	0.85	0.38	785	2058		
			12:18:03	38.91	20.28	125.16	1.55	1.01	785	779		Inside discharge plume
			12:18:04	38.76	20.28	125.18	1.07	0.58	785	1345		
			12:18:05	38.93	20.28	125.22	1.47	0.94	785	836		

**TABLE D-8**

Transect TRN-01 on September 21, 2022 (1215-1223 hours PDT) located along North MZB (242 feet from Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>113</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>194</b>	<b>Minimum Average Dilution in Profile</b>
<b>334</b>	<b>Detected Plume Average Dilution</b>
<b>387</b>	<b>Transect Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Transect Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			12:18:06	38.74	20.28	125.18	0.99	0.51	785	1527		
			12:18:07	38.67	20.28	125.16	1.25	0.74	785	1062		
			12:18:08	38.80	20.28	125.13	0.62	0.18	785	4383		
			12:18:09	38.60	20.28	124.92	3.01	2.32	785	338		
			12:18:10	38.64	20.28	124.89	0.61	0.17	785	4716		
			12:18:11	38.56	20.28	124.91	0.58	0.14	785	5568		
			12:18:12	38.55	20.28	124.89	0.60	0.16	785	4876		
			12:18:13	38.41	20.28	124.85	0.25	0.25	785	3203		
			12:18:14	38.46	20.28	124.90	0.17	0.17	785	4639		
			12:18:15	38.44	20.28	124.90	0.70	0.25	785	3130		
			12:18:16	38.43	20.28	124.92	0.24	0.24	785	3211		
			12:18:17	38.38	20.28	124.99	0.30	0.30	785	2613		
			12:18:18	38.28	20.28	124.94	1.02	0.54	785	1458		
			12:18:19	38.15	20.28	124.97	1.04	0.56	785	1408		
			12:18:20	38.27	20.28	124.95	0.36	0.36	785	2201		
			12:18:21	38.07	20.28	124.89	0.32	0.32	785	2430		
			12:18:22	38.08	20.28	124.94	1.05	0.56	785	1402		
			12:18:23	38.07	20.28	124.97	0.59	0.15	785	5285		
			12:18:24	38.03	20.28	125.09	0.91	0.44	785	1786		
			12:18:25	38.15	20.28	125.07	5.53	4.58	785	171		
			12:18:26	38.04	20.28	125.09	7.25	6.12	785	128		
			12:18:27	37.93	20.28	125.32	3.39	2.67	785	295		
			12:18:28	37.99	20.28	125.13	1.57	1.03	785	762		
			12:18:29	37.94	20.28	125.28	1.31	0.80	785	982		
			12:18:30	37.81	20.28	125.68	2.43	1.80	785	437		
			12:18:31	37.99	20.28	125.73	2.50	1.86	785	422		
			12:18:32	37.82	20.28	125.99	3.20	2.50	785	315		
			12:18:33	37.85	20.28	126.10	3.72	2.96	785	265		
			12:18:34	37.86	20.28	125.97	3.84	3.07	785	256	347	Discharge plume main body
			12:18:35	37.62	20.28	125.91	3.65	2.89	785	271		
			12:18:36	37.81	20.28	125.88	3.06	2.37	785	331		
			12:18:37	37.73	20.28	125.76	3.18	2.47	785	317		
			12:18:38	37.74	20.28	125.93	2.77	2.11	785	372		
			12:18:39	37.81	20.28	125.95	3.32	2.60	785	302		
			12:18:40	37.80	20.28	125.95	3.60	2.86	785	275		
			12:18:41	37.64	20.28	125.99	3.45	2.71	785	289		

**TABLE D-8**

Transect TRN-01 on September 21, 2022 (1215-1223 hours PDT) located along North MZB (242 feet from Diffuser)

Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>113</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>194</b>	<b>Minimum Average Dilution in Profile</b>
<b>334</b>	<b>Detected Plume Average Dilution</b>
<b>387</b>	<b>Transect Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Transect Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			12:18:42	37.74	20.28	126.10	3.93	3.15	785	249		
			12:18:43	37.72	20.28	126.25	4.19	3.38	785	232		
			12:18:44	37.59	20.28	126.04	3.63	2.88	785	273		
			12:18:45	37.54	20.28	125.91	3.70	2.94	785	267		
			12:18:46	37.57	20.28	125.60	2.50	1.87	785	420		
			12:18:47	37.52	20.27	125.08	1.20	0.69	785	1132		
			12:18:48	37.76	20.27	124.94	0.50	0.07	785	10877		
			12:18:49	37.92	20.27	124.87	0.48	0.06	785	14125		
			12:18:50	38.00	20.27	124.42	0.02	0.02	785	39250		
			12:18:51	38.28	20.27	124.21	0.02	0.02	785	43855		
			12:18:52	38.48	20.27	124.09	0.02	0.02	785	41099		
			12:18:53	38.54	20.26	123.92	0.02	0.02	785	44350		
			12:18:54	38.67	20.26	123.99	0.02	0.02	785	44602		
			12:18:55	38.90	20.26	124.03	0.02	0.02	785	44350		
			12:18:56	38.73	20.26	124.11	0.02	0.02	785	42432		
			12:18:57	38.98	20.26	124.29	0.02	0.02	785	41534		
			12:18:58	38.84	20.27	124.42	0.19	0.19	785	4182		
			12:18:59	38.88	20.27	124.53	0.17	0.17	785	4509		
			12:19:00	38.97	20.27	124.57	0.02	0.02	785	46176		
			12:19:01	38.85	20.27	124.49	0.02	0.02	785	45115		
			12:19:02	38.87	20.27	124.49	0.02	0.02	785	45640		
			12:19:03	38.75	20.27	124.46	0.17	0.17	785	4604		
			12:19:04	38.70	20.27	124.51	0.35	0.35	785	2264		
			12:19:05	38.68	20.27	124.56	0.05	0.05	785	14646		
			12:19:06	38.46	20.27	124.53	0.03	0.03	785	29848		
			12:19:07	38.45	20.27	124.59	0.29	0.29	785	2697		
			12:19:08	38.30	20.27	124.89	0.45	0.03	785	30869		
			12:19:09	38.12	20.27	124.57	0.65	0.20	785	3907		
			12:19:10	38.08	20.27	124.32	0.02	0.02	785	43370		
			12:19:11	37.92	20.27	124.56	0.58	0.14	785	5571		
			12:19:12	37.84	20.27	125.20	2.58	1.94	785	405		Inside discharge plume
			12:19:13	37.71	20.27	125.37	2.31	1.70	785	462		
			12:19:14	37.70	20.26	125.16	1.34	0.82	785	957		
			12:19:15	37.60	20.26	124.94	0.94	0.46	785	1703		
			12:19:16	37.55	20.26	124.96	1.39	0.87	785	906		
			12:19:17	37.76	20.26	125.26	1.25	0.74	785	1055		

**TABLE D-8**

Transect TRN-01 on September 21, 2022 (1215-1223 hours PDT) located along North MZB (242 feet from Diffuser)

Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>113</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>194</b>	<b>Minimum Average Dilution in Profile</b>
<b>334</b>	<b>Detected Plume Average Dilution</b>
<b>387</b>	<b>Transect Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Transect Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			12:19:18	37.69	20.26	124.95	1.16	0.66	785	1190		
			12:19:19	37.79	20.26	125.01	1.90	1.33	785	592		
			12:19:20	37.87	20.26	125.30	2.85	2.18	785	361		
			12:19:21	37.85	20.26	125.61	3.34	2.62	785	300		
			12:19:22	37.77	20.26	125.68	2.92	2.24	785	350		
			12:19:23	37.92	20.26	125.37	2.04	1.45	785	541		
			12:19:24	37.79	20.26	124.90	2.08	1.48	785	529		
			12:19:25	37.76	20.26	125.20	2.65	2.00	785	393		
			12:19:26	37.84	20.26	125.49	3.11	2.41	785	326		
			12:19:27	37.68	20.26	125.49	3.09	2.40	785	327		
			12:19:28	37.70	20.27	125.52	2.68	2.03	785	388		
			12:19:29	37.77	20.27	125.62	3.09	2.39	785	329		
			12:19:30	37.66	20.27	125.83	3.86	3.08	785	254		
			12:19:31	37.56	20.27	125.91	3.45	2.72	785	289		
			12:19:32	37.72	20.27	125.80	3.33	2.61	785	301		
			12:19:33	37.55	20.27	125.86	3.35	2.63	785	299	323	Discharge plume main body
			12:19:34	37.36	20.27	126.08	3.90	3.12	785	252		
			12:19:35	37.44	20.27	126.16	4.45	3.61	785	217		
			12:19:36	37.09	20.27	126.16	4.26	3.45	785	228		
			12:19:37	36.94	20.27	126.23	5.02	4.13	785	190		
			12:19:38	37.01	20.27	126.12	4.05	3.25	785	241		
			12:19:39	37.20	20.27	125.61	2.90	2.22	785	353		
			12:19:40	36.91	20.27	125.26	2.26	1.65	785	477		
			12:19:41	37.42	20.27	125.85	2.91	2.23	785	352		
			12:19:42	37.63	20.27	126.14	4.54	3.69	785	213		
			12:19:43	37.68	20.27	126.30	4.53	3.68	785	213		
			12:19:44	38.21	20.27	126.08	4.08	3.28	785	239		
			12:19:45	38.38	20.26	126.14	4.82	3.94	785	199		
			12:19:46	38.38	20.26	125.73	3.54	2.79	785	281		
			12:19:47	38.84	20.25	125.10	1.20	0.70	785	1127		
			12:19:48	38.81	20.25	125.45	1.64	1.10	785	716		
			12:19:49	38.75	20.25	125.30	1.26	0.75	785	1042		
			12:19:50	39.05	20.25	124.67	0.09	0.09	785	8486		
			12:19:51	38.86	20.25	124.29	0.02	0.02	785	41099		
			12:19:52	38.84	20.25	124.37	1.03	0.54	785	1441		
			12:19:53	38.98	20.25	124.20	0.87	0.41	785	1936		



**TABLE D-8**

Transect TRN-01 on September 21, 2022 (1215-1223 hours PDT) located along North MZB (242 feet from Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>113</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>194</b>	<b>Minimum Average Dilution in Profile</b>
<b>334</b>	<b>Detected Plume Average Dilution</b>
<b>387</b>	<b>Transect Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Transect Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			12:19:54	38.89	20.25	124.03	0.17	0.17	785	4626		
			12:19:55	38.73	20.25	124.41	0.02	0.02	785	43855		
			12:19:56	39.04	20.25	124.98	0.02	0.02	785	46176		
			12:19:57	38.72	20.25	125.62	0.02	0.02	785	41099		
			12:19:58	38.73	20.25	125.32	0.85	0.39	785	2034		
			12:19:59	38.81	20.25	125.30	2.78	2.12	785	371		
			12:20:00	38.71	20.25	126.02	4.13	3.33	785	236		
			12:20:01	38.45	20.26	127.17	8.16	6.94	785	113		
			12:20:02	38.73	20.26	127.31	7.91	6.71	785	117		
			12:20:03	38.56	20.26	127.44	7.58	6.43	785	122		
			12:20:04	38.52	20.26	126.99	7.67	6.50	785	121		
			12:20:05	38.78	20.26	126.62	6.74	5.67	785	138		
			12:20:06	38.48	20.26	126.66	6.63	5.57	785	141		
			12:20:07	38.71	20.26	126.43	5.53	4.58	785	171		
			12:20:08	38.36	20.26	126.47	5.46	4.52	785	174		
			12:20:09	38.61	20.26	126.54	6.04	5.04	785	156		
			12:20:10	38.40	20.26	126.41	5.81	4.84	785	162		
			12:20:11	38.55	20.26	126.50	5.49	4.55	785	172		
			12:20:12	38.44	20.26	126.47	5.37	4.44	785	177		
			12:20:13	38.44	20.26	126.37	5.40	4.46	785	176	194	Discharge plume main body
			12:20:14	38.52	20.26	126.28	4.92	4.04	785	194		
			12:20:15	38.58	20.26	126.06	5.66	4.70	785	167		
			12:20:16	38.41	20.25	125.87	4.85	3.97	785	198		
			12:20:17	38.65	20.25	125.99	3.99	3.20	785	245		
			12:20:18	38.49	20.26	126.06	3.72	2.96	785	265		
			12:20:19	38.52	20.26	126.06	4.03	3.23	785	243		
			12:20:20	38.59	20.25	126.38	4.08	3.28	785	239		
			12:20:21	38.50	20.25	126.62	4.20	3.39	785	232		
			12:20:22	38.52	20.25	126.18	4.08	3.28	785	239		
			12:20:23	38.62	20.25	125.40	3.45	2.72	785	289		
			12:20:24	38.50	20.26	125.03	1.75	1.19	785	658		
			12:20:25	38.65	20.26	124.87	1.36	0.84	785	930		
			12:20:26	38.70	20.26	125.00	1.74	1.19	785	661		
			12:20:27	38.62	20.26	124.77	1.17	0.67	785	1176		
			12:20:28	38.91	20.26	124.65	0.07	0.07	785	11410		
			12:20:29	38.70	20.27	124.51	0.02	0.02	785	41979		

**TABLE D-8**

Transect TRN-01 on September 21, 2022 (1215-1223 hours PDT) located along North MZB (242 feet from Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>113</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>194</b>	<b>Minimum Average Dilution in Profile</b>
<b>334</b>	<b>Detected Plume Average Dilution</b>
<b>387</b>	<b>Transect Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Transect Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			12:20:30	38.83	20.27	124.40	0.02	0.02	785	44350		
			12:20:31	38.86	20.27	124.38	0.02	0.02	785	44350		
			12:20:32	38.81	20.27	124.53	0.02	0.02	785	42896		
			12:20:33	38.90	20.27	124.51	0.02	0.02	785	42896		
			12:20:34	38.79	20.27	124.32	0.02	0.02	785	44602		
			12:20:35	38.83	20.27	124.38	0.02	0.02	785	44350		
			12:20:36	38.70	20.27	124.29	0.03	0.03	785	22953		
			12:20:37	38.83	20.27	124.23	0.02	0.02	785	43855		
			12:20:38	38.61	20.27	124.27	0.02	0.02	785	49063		
			12:20:39	38.76	20.27	124.29	0.02	0.02	785	41099		
			12:20:40	38.68	20.27	124.27	0.02	0.02	785	46176		
			12:20:41	38.65	20.27	124.51	0.21	0.21	785	3790		
			12:20:42	38.66	20.27	125.04	1.64	1.10	785	717		
			12:20:43	38.64	20.27	124.78	0.39	0.39	785	2024		
			12:20:44	38.62	20.27	124.46	0.02	0.02	785	43370		
			12:20:45	38.64	20.27	124.34	0.02	0.02	785	42896		
			12:20:46	38.50	20.27	124.62	0.06	0.06	785	12096		
			12:20:47	38.63	20.27	125.18	0.40	0.40	785	1985		
			12:20:48	38.59	20.26	124.80	0.02	0.02	785	41316		
			12:20:49	38.48	20.27	124.68	0.36	0.36	785	2182		
			12:20:50	38.60	20.27	124.49	0.45	0.03	785	28004		
			12:20:51	38.46	20.27	124.27	0.03	0.03	785	23645		
			12:20:52	38.43	20.27	124.53	0.50	0.07	785	11833		
			12:20:53	38.31	20.27	124.46	0.07	0.07	785	12003		
			12:20:54	38.29	20.27	124.29	0.02	0.02	785	39646		
			12:20:55	38.12	20.27	124.25	0.02	0.02	785	40674		
			12:20:56	37.89	20.27	124.11	0.02	0.02	785	41099		
			12:20:57	37.92	20.27	124.39	0.02	0.02	785	39848		
			12:20:58	37.75	20.27	125.40	2.23	1.62	785	485		
			12:20:59	37.57	20.27	125.25	1.89	1.32	785	596		
			12:21:00	37.66	20.27	124.57	0.06	0.06	785	12744		
			12:21:01	37.52	20.27	124.46	0.07	0.07	785	10948		
			12:21:02	37.51	20.26	124.61	1.05	0.56	785	1390		
			12:21:03	37.53	20.26	124.38	0.53	0.10	785	7754		
			12:21:04	37.51	20.26	124.23	0.04	0.04	785	20550		
			12:21:05	37.23	20.26	124.13	0.19	0.19	785	4178		

**TABLE D-8**

Transect TRN-01 on September 21, 2022 (1215-1223 hours PDT) located along North MZB (242 feet from Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>113</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>194</b>	<b>Minimum Average Dilution in Profile</b>
<b>334</b>	<b>Detected Plume Average Dilution</b>
<b>387</b>	<b>Transect Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Transect Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			12:21:06	37.23	20.26	124.20	0.02	0.02	785	42896		
			12:21:07	37.07	20.26	124.15	0.02	0.02	785	46726		
			12:21:08	36.75	20.26	124.14	0.02	0.02	785	41979		
			12:21:09	36.69	20.26	124.15	0.02	0.02	785	45115		
			12:21:10	36.60	20.27	124.61	0.06	0.06	785	13772		
			12:21:11	36.49	20.27	125.11	1.08	0.59	785	1329		
			12:21:12	36.42	20.27	124.80	0.41	0.41	785	1911		
			12:21:13	36.32	20.26	124.38	0.02	0.02	785	42432		
			12:21:14	36.01	20.26	124.34	0.02	0.02	785	41534		
			12:21:15	35.94	20.26	124.29	0.10	0.10	785	7929		
			12:21:16	36.22	20.27	124.25	0.02	0.02	785	39250		
			12:21:17	36.42	20.27	124.53	0.75	0.29	785	2703		
			12:21:18	36.76	20.27	124.87	1.78	1.22	785	645		
			12:21:19	37.36	20.27	124.80	1.20	0.70	785	1127		
			12:21:20	37.47	20.27	124.76	0.37	0.37	785	2134		
			12:21:21	38.07	20.27	124.95	1.12	0.63	785	1247		
			12:21:22	38.34	20.27	125.07	1.40	0.88	785	894		
			12:21:23	38.41	20.27	125.18	2.01	1.42	785	552		
			12:21:24	38.86	20.27	125.22	1.61	1.06	785	739		
			12:21:25	38.69	20.27	125.07	1.20	0.69	785	1131		
			12:21:26	38.80	20.27	125.18	1.83	1.27	785	620		
			12:21:27	38.89	20.27	125.37	2.93	2.25	785	349		
			12:21:28	38.58	20.26	125.35	2.67	2.02	785	389		
			12:21:29	38.76	20.27	125.28	1.60	1.06	785	740		
			12:21:30	38.66	20.27	125.53	1.90	1.33	785	590		
			12:21:31	38.55	20.27	125.43	2.48	1.85	785	425	436	Discharge plume main body - west
			12:21:32	38.76	20.27	125.52	2.19	1.58	785	496		
			12:21:33	38.61	20.27	126.06	2.73	2.07	785	379		
			12:21:34	38.60	20.26	126.12	3.91	3.13	785	251		
			12:21:35	38.63	20.26	126.14	3.60	2.85	785	276		
			12:21:36	38.40	20.26	126.08	3.87	3.09	785	254		
			12:21:37	38.23	20.26	126.07	3.48	2.74	785	286		
			12:21:38	38.14	20.26	126.04	3.37	2.65	785	297		
			12:21:39	37.88	20.27	125.69	1.39	0.87	785	901		
			12:21:40	37.81	20.27	125.37	1.88	1.31	785	602		
			12:21:41	37.87	20.27	125.39	3.13	2.43	785	324		

**TABLE D-8**

Transect TRN-01 on September 21, 2022 (1215-1223 hours PDT) located along North MZB (242 feet from Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>113</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>194</b>	<b>Minimum Average Dilution in Profile</b>
<b>334</b>	<b>Detected Plume Average Dilution</b>
<b>387</b>	<b>Transect Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Transect Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			12:21:42	37.59	20.27	125.49	3.55	2.80	785	280		
			12:21:43	37.43	20.27	125.51	2.61	1.96	785	400		
			12:21:44	37.27	20.27	125.36	0.31	0.31	785	2516		
			12:21:45	37.18	20.27	124.39	0.02	0.02	785	39447		
			12:21:46	37.15	20.27	124.01	0.02	0.02	785	42896		
			12:21:47	37.18	20.27	124.19	0.02	0.02	785	46176		
			12:21:48	37.23	20.27	124.40	0.02	0.02	785	42896		
			12:21:49	37.26	20.27	124.36	0.02	0.02	785	39848		
			12:21:50	37.16	20.27	124.34	0.02	0.02	785	44857		
			12:21:51	37.28	20.27	124.30	0.02	0.02	785	44602		
			12:21:52	37.07	20.27	124.31	0.03	0.03	785	28136		
			12:21:53	37.06	20.27	124.75	0.40	0.40	785	1982		
			12:21:54	36.97	20.27	124.63	0.02	0.02	785	45115		
			12:21:55	36.73	20.27	124.49	0.02	0.02	785	45640		
			12:21:56	36.56	20.27	124.70	0.87	0.40	785	1970		
			12:21:57	36.50	20.27	125.05	2.10	1.50	785	522		
			12:21:58	36.44	20.27	125.24	1.64	1.09	785	719		
			12:21:59	36.28	20.27	125.28	2.25	1.64	785	479		
			12:22:00	36.22	20.27	125.01	1.72	1.16	785	676		
			12:22:01	36.28	20.27	125.24	2.51	1.87	785	420	704	Discharge plume west edge
			12:22:02	36.27	20.27	125.39	2.25	1.64	785	479		
			12:22:03	36.33	20.27	125.47	1.84	1.27	785	618		
			12:22:04	36.55	20.27	125.20	1.19	0.69	785	1138		
			12:22:05	36.47	20.27	124.85	2.71	2.05	785	382		
			12:22:06	36.53	20.27	125.06	1.03	0.54	785	1445		
			12:22:07	36.74	20.27	125.11	1.43	0.91	785	865		
			12:22:08	36.44	20.27	124.82	0.34	0.34	785	2312		
			12:22:09	36.44	20.27	124.73	0.02	0.02	785	43370		
			12:22:10	36.30	20.26	124.09	0.02	0.02	785	42896		
			12:22:11	36.00	20.26	124.10	0.02	0.02	785	44857		
			12:22:12	35.84	20.26	125.08	1.80	1.24	785	634		
			12:22:13	35.94	20.27	125.37	2.39	1.76	785	445		
			12:22:14	35.79	20.27	125.10	1.09	0.60	785	1306		
			12:22:15	35.97	20.27	124.40	0.36	0.36	785	2193		
			12:22:16	36.05	20.27	124.29	0.02	0.02	785	47289		
			12:22:17	35.98	20.26	124.32	0.02	0.02	785	45906		

**TABLE D-8**

Transect TRN-01 on September 21, 2022 (1215-1223 hours PDT) located along North MZB (242 feet from Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>113</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>194</b>	<b>Minimum Average Dilution in Profile</b>
<b>334</b>	<b>Detected Plume Average Dilution</b>
<b>387</b>	<b>Transect Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Transect Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			12:22:18	36.06	20.26	124.61	0.08	0.08	785	10013		
			12:22:19	36.00	20.26	124.44	0.55	0.12	785	6611		
			12:22:20	35.90	20.27	124.88	1.18	0.68	785	1155		
			12:22:21	35.88	20.27	125.39	2.80	2.13	785	368		
			12:22:22	35.84	20.27	124.92	0.39	0.39	785	2027		
			12:22:23	35.86	20.27	124.49	0.22	0.22	785	3598		
			12:22:24	35.95	20.26	124.02	0.02	0.02	785	43370		
			12:22:25	36.00	20.25	123.79	0.02	0.02	785	49063		
			12:22:26	36.04	20.25	124.31	0.13	0.13	785	6275		
			12:22:27	36.12	20.26	124.59	1.27	0.76	785	1027		
			12:22:28	36.32	20.26	124.06	0.04	0.04	785	18298		Outside Plume - West Edge
			12:22:29	36.42	20.26	123.84	0.02	0.02	785	43855		
			12:22:30	36.57	20.25	123.77	0.02	0.02	785	41099		
			12:22:31	36.47	20.25	123.71	0.02	0.02	785	43855		
			12:22:32	36.50	20.25	123.75	0.02	0.02	785	42896		
			12:22:33	36.42	20.25	123.71	0.02	0.02	785	48457		
			12:22:34	36.51	20.25	123.69	0.02	0.02	785	47289		
			12:22:35	36.80	20.25	123.73	0.02	0.02	785	46726		
			12:22:36	36.96	20.25	123.71	0.02	0.02	785	43370		
			12:22:37	37.39	20.25	123.67	0.02	0.02	785	41979		
			12:22:38	37.64	20.25	123.77	0.02	0.02	785	44602		
			12:22:39	37.95	20.25	123.79	0.02	0.02	785	39250		
			12:22:40	38.31	20.25	123.73	0.02	0.02	785	43370		
			12:22:41	38.52	20.25	123.69	0.02	0.02	785	43855		
			12:22:42	38.60	20.25	123.69	0.02	0.02	785	46726		
			12:22:43	38.91	20.25	123.77	0.02	0.02	785	40051		
			12:22:44	38.84	20.25	123.71	0.02	0.02	785	43370		
			12:22:45	38.88	20.25	123.67	0.02	0.02	785	41534		
			12:22:46	38.96	20.25	123.71	0.02	0.02	785	42896		
			12:22:47	38.73	20.25	123.71	0.02	0.02	785	42896		
			12:22:48	38.88	20.25	123.69	0.02	0.02	785	41979		
			12:22:49	38.75	20.25	123.69	0.02	0.02	785	41979		
			12:22:50	38.75	20.25	123.71	0.02	0.02	785	45640		
			12:22:51	38.75	20.25	123.65	0.02	0.02	785	41534		
			12:22:52	38.73	20.25	123.77	0.02	0.02	785	41979		
			12:22:53	38.80	20.26	123.77	0.02	0.02	785	46176		

**TABLE D-8**

Transect TRN-01 on September 21, 2022 (1215-1223 hours PDT) located along North MZB (242 feet from Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>113</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>194</b>	<b>Minimum Average Dilution in Profile</b>
<b>334</b>	<b>Detected Plume Average Dilution</b>
<b>387</b>	<b>Transect Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Transect Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			12:22:54	38.76	20.26	123.81	0.02	0.02	785	43370		
			12:22:55	38.68	20.26	123.75	0.02	0.02	785	46176		
			12:22:56	38.60	20.25	123.75	0.02	0.02	785	40464		
			12:22:57	38.50	20.25	123.73	0.02	0.02	785	43370		
			12:22:58	38.36	20.25	123.75	0.02	0.02	785	41979		
			12:22:59	38.30	20.26	123.82	0.02	0.02	785	46726		
			12:23:00	38.32	20.26	123.79	0.02	0.02	785	40674		
			12:23:01	38.13	20.26	123.79	0.02	0.02	785	41534		
			12:23:02	38.16	20.26	123.82	0.02	0.02	785	45640		
			12:23:03	38.07	20.26	123.88	0.02	0.02	785	44350		
			12:23:04	38.03	20.26	123.85	0.02	0.02	785	40464		
			12:23:05	37.97	20.26	123.86	0.02	0.02	785	43855		
			12:23:06	37.85	20.26	123.82	0.02	0.02	785	41099		
			12:23:07	37.89	20.26	123.82	0.02	0.02	785	44602		
			12:23:08	37.83	20.25	123.73	0.02	0.02	785	42432		
			12:23:09	37.77	20.25	123.71	0.02	0.02	785	42896		
			12:23:10	37.73	20.25	123.71	0.02	0.02	785	46726		
			12:23:11	37.70	20.26	123.90	0.02	0.02	785	41099		
			12:23:12	37.74	20.27	124.01	0.02	0.02	785	44602		
			12:23:13	37.76	20.28	124.01	0.02	0.02	785	43370		
			12:23:14	37.87	20.28	124.01	0.02	0.02	785	42896		
			12:23:15	37.92	20.28	124.05	0.02	0.02	785	41979		
			12:23:16	37.99	20.28	124.05	0.02	0.02	785	41534		
			12:23:17	38.02	20.28	124.15	0.02	0.02	785	45115		
			12:23:18	38.13	20.29	124.20	0.02	0.02	785	44350		
			12:23:19	38.00	20.29	124.18	0.02	0.02	785	43370		
			12:23:20	38.07	20.28	124.05	0.02	0.02	785	46176		
			12:23:21	38.00	20.28	124.03	0.02	0.02	785	41534		
			12:23:22	37.93	20.27	123.99	0.02	0.02	785	44350		
			12:23:23	37.83	20.27	123.97	0.02	0.02	785	38480		
			12:23:24	37.87	20.27	123.99	0.02	0.02	785	43855		
			12:23:25	37.58	20.27	123.92	0.02	0.02	785	45376		
			12:23:26	37.70	20.27	123.92	0.02	0.02	785	43370		
			12:23:27	37.56	20.26	123.88	0.02	0.02	785	44602		
			12:23:28	37.47	20.26	123.73	0.02	0.02	785	42896		
			12:23:29	37.49	20.25	123.63	0.02	0.02	785	45906		

**TABLE D-8**

Transect TRN-01 on September 21, 2022 (1215-1223 hours PDT) located along North MZB (242 feet from Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>113</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>194</b>	<b>Minimum Average Dilution in Profile</b>
<b>334</b>	<b>Detected Plume Average Dilution</b>
<b>387</b>	<b>Transect Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Transect Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			12:23:30	37.48	20.25	123.71	0.02	0.02	785	43370		
			12:23:31	37.28	20.25	123.69	0.02	0.02	785	43855		
			12:23:32	37.47	20.25	123.73	0.02	0.02	785	40674		
			12:23:33	37.29	20.25	123.65	0.02	0.02	785	43370		
			12:23:34	37.38	20.25	123.71	0.02	0.02	785	43855		
			12:23:35	37.25	20.25	123.69	0.02	0.02	785	43855		
			12:23:36	37.34	20.25	123.67	0.02	0.02	785	44602		
			12:23:37	37.44	20.24	123.63	0.02	0.02	785	41099		

**TABLE D-9**

Profile PRO-06 on September 21, 2022 (1301-1314 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-6 (North Mixing Zone Boundary - 242 ft from Diffuser mid-point)	51 ft	0.09 m/sec 14 deg. (mag.) Reversal to Flood tide	13:01:40	2.67	20.28	124.70	2.16	1.56	852	548	615	Plume present on surface due to tidal current reversal
			13:01:41	2.69	20.26	124.70	2.27	1.66	852	515		
			13:01:42	2.68	20.28	124.79	1.82	1.26	852	678		
			13:01:43	2.70	20.30	124.94	1.78	1.21	852	702		
			13:01:44	2.70	20.32	124.96	1.97	1.39	852	612		
			13:01:45	2.69	20.33	125.01	1.56	1.02	852	833		
			13:01:46	2.70	20.33	125.05	1.99	1.41	852	606		
			13:01:47	2.70	20.33	125.09	2.80	2.14	852	399		
			13:01:48	2.69	20.32	125.09	2.11	1.52	852	562		
			13:01:49	2.68	20.32	125.18	2.22	1.61	852	529		
			13:01:50	2.69	20.32	125.05	2.21	1.60	852	531		
			13:01:51	2.64	20.32	125.22	1.63	1.09	852	783		
			13:01:52	2.65	20.32	125.09	1.69	1.13	852	751		
			13:01:53	2.65	20.32	125.30	2.12	1.52	852	560		
			13:01:54	2.68	20.32	125.35	0.76	0.30	852	2803		
			13:01:55	2.71	20.33	125.30	0.97	0.49	852	1744		
			13:01:56	2.71	20.33	125.22	0.14	0.14	852	6047		
			13:01:57	2.66	20.33	125.24	0.02	0.02	852	44607		
			13:01:58	2.70	20.33	125.20	0.10	0.10	852	8676		
			13:01:59	2.69	20.32	125.11	0.02	0.02	852	44607		
			13:02:00	2.73	20.32	125.07	0.32	0.32	852	2637		
			13:02:01	2.70	20.32	125.05	0.18	0.18	852	4643		
			13:02:02	2.70	20.31	125.05	0.24	0.24	852	3540		
			13:02:03	2.69	20.31	125.01	0.19	0.19	852	4573		
13:02:04	2.68	20.30	125.01	0.39	0.39	852	2170					
13:02:05	2.70	20.30	124.95	0.23	0.23	852	3763					
13:02:06	2.70	20.29	124.95	0.13	0.13	852	6579					
13:02:07	2.68	20.28	124.95	0.07	0.07	852	12548					
13:02:08	2.70	20.27	124.97	0.02	0.02	852	43469					
13:02:09	2.65	20.26	124.92	0.02	0.02	852	45561					
13:02:10	2.66	20.26	124.91	0.02	0.02	852	43469					
13:02:11	2.65	20.25	124.92	0.02	0.02	852	47598					
13:02:12	2.68	20.25	124.95	0.02	0.02	852	45079					
13:02:13	2.71	20.26	124.95	0.02	0.02	852	45319					
13:02:14	2.69	20.26	124.91	0.02	0.02	852	47598					
13:02:15	2.71	20.25	124.85	0.02	0.02	852	42178					
13:02:16	2.67	20.24	124.91	0.02	0.02	852	43918					
13:02:17	2.73	20.23	124.92	0.02	0.02	852	45079					
13:02:18	2.70	20.22	124.88	0.02	0.02	852	46054					



**TABLE D-9**

Profile PRO-06 on September 21, 2022 (1301-1314 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			13:02:19	2.73	20.20	124.92	0.02	0.02	852	46557		
			13:02:20	2.82	20.20	124.98	0.21	0.21	852	3965		
			13:02:21	2.75	20.18	124.93	0.45	0.02	852	35911		
			13:02:22	2.79	20.27	124.51	1.08	0.59	852	1442		
			13:02:23	2.78	20.34	124.82	0.49	0.06	852	13255		
			13:02:24	2.76	20.34	124.82	4.00	3.21	852	265		
			13:02:25	2.84	20.34	124.68	2.49	1.85	852	460		
			13:02:26	2.90	20.34	124.63	0.29	0.29	852	2925		
			13:02:27	2.84	20.34	124.74	0.08	0.08	852	11196		
			13:02:28	2.77	20.34	124.70	0.35	0.35	852	2450		
			13:02:29	2.76	20.34	124.66	1.05	0.56	852	1518		
			13:02:30	2.78	20.34	124.76	0.48	0.06	852	15232		
			13:02:31	2.78	20.34	124.72	0.34	0.34	852	2477		
			13:02:32	2.80	20.34	124.76	0.07	0.07	852	12171		
			13:02:33	2.64	20.34	124.80	1.48	0.95	852	894		
			13:02:34	2.70	20.34	124.92	0.80	0.34	852	2506		
			13:02:35	2.68	20.34	124.96	0.27	0.27	852	3207		
			13:02:36	2.68	20.34	124.94	0.31	0.31	852	2727		
			13:02:37	2.71	20.34	125.05	0.64	0.20	852	4312		
			13:02:38	2.66	20.34	125.13	0.65	0.21	852	4092		
			13:02:39	2.70	20.34	125.24	0.51	0.08	852	11140		
			13:02:40	2.67	20.34	125.22	1.48	0.95	852	894		
			13:02:41	2.71	20.34	125.22	1.34	0.83	852	1032		
			13:02:42	2.76	20.34	125.28	1.63	1.08	852	789		
			13:02:43	2.68	20.34	125.20	1.26	0.76	852	1128		
			13:02:44	2.82	20.34	125.20	1.40	0.88	852	973		
			13:02:45	2.74	20.34	125.18	2.34	1.72	852	495		
			13:02:46	2.76	20.34	125.24	2.04	1.45	852	588		
			13:02:47	2.71	20.34	125.22	1.28	0.77	852	1104		
			13:02:48	2.71	20.34	125.20	1.31	0.79	852	1072		
			13:02:49	2.74	20.34	125.22	1.29	0.78	852	1089		
			13:02:50	2.69	20.34	125.22	2.02	1.43	852	596		
			13:02:51	2.75	20.34	125.24	1.99	1.41	852	604		
			13:02:52	2.68	20.34	125.28	1.35	0.84	852	1018		
			13:02:53	2.83	20.34	125.26	1.94	1.36	852	624		
			13:02:54	2.84	20.34	125.24	2.47	1.84	852	464		
			13:02:55	2.81	20.34	125.26	1.95	1.37	852	623		
			13:02:56	2.83	20.34	125.30	1.74	1.18	852	723		
			13:02:57	2.81	20.34	125.28	1.50	0.97	852	879		

**TABLE D-9**

Profile PRO-06 on September 21, 2022 (1301-1314 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							59	150	398	1675	Instantaneous Minimum Dilution in Profile	
			13:02:58	2.85	20.34	125.28	1.77	1.21	852	702		Plume measurements near surface
			13:02:59	2.79	20.34	125.26	2.09	1.50	852	568		
			13:03:00	2.79	20.34	125.35	1.85	1.28	852	665	598	
			13:03:01	2.78	20.34	125.32	1.94	1.36	852	627		
			13:03:02	2.71	20.34	125.39	1.96	1.38	852	617		
			13:03:03	2.74	20.34	125.39	2.44	1.81	852	471		
			13:03:04	2.74	20.34	125.35	1.86	1.29	852	658		
			13:03:05	2.75	20.34	125.37	2.16	1.56	852	546		
			13:03:06	2.76	20.34	125.39	2.90	2.23	852	383		
			13:03:07	2.81	20.34	125.30	2.40	1.78	852	479		
			13:03:08	2.81	20.34	125.28	2.14	1.54	852	553		
			13:03:09	2.88	20.34	125.35	2.05	1.46	852	584		
			13:03:10	2.87	20.34	125.51	1.36	0.84	852	1018		
			13:03:11	2.89	20.34	125.54	3.52	2.78	852	307		
			13:03:12	2.83	20.34	125.57	2.04	1.45	852	586		
			13:03:13	2.84	20.34	125.47	1.92	1.34	852	636		
			13:03:14	2.85	20.34	125.45	1.80	1.24	852	687		
			13:03:15	2.88	20.34	125.47	3.68	2.92	852	291		
			13:03:16	2.85	20.34	125.49	10.45	8.99	852	95		
			13:03:17	2.88	20.34	125.54	10.11	8.69	852	98		
			13:03:18	2.81	20.34	125.51	16.44	14.37	852	59		
			13:03:19	2.77	20.34	125.49	4.65	3.80	852	224		
			13:03:20	2.71	20.34	125.47	12.28	10.64	852	80		
			13:03:21	2.79	20.34	125.39	16.10	14.07	852	61		
			13:03:22	2.70	20.34	125.43	4.30	3.48	852	245		
			13:03:23	2.76	20.34	125.39	3.87	3.09	852	275		
			13:03:24	2.72	20.34	125.37	5.50	4.56	852	187		
			13:03:25	2.75	20.34	125.35	4.11	3.31	852	257		
			13:03:26	2.74	20.34	125.30	2.94	2.26	852	377		
			13:03:27	2.72	20.34	125.24	3.07	2.38	852	358		
			13:03:28	2.73	20.34	125.28	3.64	2.89	852	295		
			13:03:29	2.71	20.34	125.28	4.72	3.86	852	221	297	
			13:03:30	2.78	20.34	125.39	2.86	2.19	852	389		
			13:03:31	2.86	20.34	125.56	2.64	1.99	852	429		
			13:03:32	2.95	20.34	125.55	2.07	1.48	852	576		
			13:03:33	2.93	20.34	125.56	2.55	1.91	852	447		
			13:03:34	2.94	20.34	125.63	2.74	2.08	852	410		
			13:03:35	2.86	20.33	125.78	2.69	2.04	852	418		
			13:03:36	2.93	20.33	125.70	2.38	1.75	852	486		

**TABLE D-9**

Profile PRO-06 on September 21, 2022 (1301-1314 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			13:03:37	2.92	20.33	125.83	3.28	2.57	852	332		
			13:03:38	2.95	20.33	125.76	4.95	4.06	852	210		
			13:03:39	2.89	20.33	125.80	3.52	2.78	852	307		
			13:03:40	2.95	20.33	125.72	2.92	2.24	852	381		
			13:03:41	2.94	20.34	125.85	3.51	2.77	852	307		
			13:03:42	2.91	20.34	125.76	3.36	2.64	852	323		
			13:03:43	2.95	20.34	125.66	3.05	2.36	852	361		
			13:03:44	2.94	20.34	125.59	3.19	2.49	852	343		
			13:03:45	2.95	20.34	125.56	3.14	2.44	852	349		
			13:03:46	2.85	20.34	125.54	3.22	2.51	852	339		
			13:03:47	2.86	20.34	125.54	3.68	2.92	852	292		
			13:03:48	2.84	20.34	125.51	3.11	2.41	852	353		
			13:03:49	2.86	20.34	125.55	2.92	2.24	852	380		
			13:03:50	2.90	20.34	125.45	2.77	2.11	852	404		
			13:03:51	2.89	20.34	125.51	2.51	1.87	852	455		
			13:03:52	2.87	20.35	125.49	3.37	2.65	852	322		
			13:03:53	2.91	20.35	125.49	2.94	2.25	852	378		
			13:03:54	2.87	20.35	125.55	3.96	3.17	852	269		
			13:03:55	2.87	20.35	125.63	3.58	2.84	852	300		
			13:03:56	2.84	20.35	125.68	4.14	3.33	852	256		
			13:03:57	2.78	20.34	125.80	4.17	3.36	852	253		
			13:03:58	2.74	20.34	125.89	5.25	4.33	852	197		
			13:03:59	2.62	20.35	125.93	3.76	2.99	852	285		
			13:04:00	2.49	20.35	125.78	4.09	3.29	852	259		
			13:04:01	2.57	20.34	125.87	7.57	6.41	852	133		
			13:04:02	2.50	20.34	125.89	7.05	5.94	852	143		
			13:04:03	2.53	20.33	125.80	5.18	4.27	852	200		
			13:04:04	2.51	20.33	125.78	5.24	4.32	852	197		
			13:04:05	2.53	20.32	125.11	3.81	3.04	852	280		
			13:04:06	2.50	20.32	125.09	2.57	1.93	852	442		
			13:04:07	2.51	20.32	125.11	2.59	1.94	852	438		
			13:04:08	2.54	20.32	125.07	1.27	0.76	852	1122		
			13:04:09	2.55	20.32	124.82	1.39	0.87	852	984		
			13:04:10	2.50	20.31	124.53	1.36	0.84	852	1015		
			13:04:11	2.51	20.30	124.31	0.94	0.47	852	1826		
			13:04:12	2.52	20.30	124.51	0.67	0.22	852	3795		
			13:04:13	2.52	20.31	124.55	1.54	1.00	852	851		
			13:04:14	2.52	20.31	124.29	2.31	1.70	852	502		
			13:04:15	2.47	20.30	124.27	1.95	1.37	852	623		

**TABLE D-9**

Profile PRO-06 on September 21, 2022 (1301-1314 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			13:04:16	2.54	20.31	124.28	1.75	1.19	852	714		Plume measurements near surface
			13:04:17	2.46	20.30	124.24	0.88	0.41	852	2069		
			13:04:18	2.52	20.30	124.26	1.58	1.04	852	822		
			13:04:19	2.51	20.30	124.20	6.80	5.72	852	149		
			13:04:20	2.56	20.30	124.13	5.15	4.24	852	201		
			13:04:21	2.51	20.30	124.15	8.63	7.36	852	116		
			13:04:22	2.58	20.30	124.20	8.16	6.94	852	123		
			13:04:23	2.72	20.30	124.37	9.58	8.22	852	104	150	
			13:04:24	2.74	20.31	124.32	3.47	2.73	852	312		
			13:04:25	3.16	20.30	124.70	8.07	6.86	852	124		
			13:04:26	3.38	20.30	124.82	8.35	7.11	852	120		
			13:04:27	4.08	20.30	124.68	9.64	8.27	852	103		
			13:04:28	7.31	20.30	124.11	0.95	0.48	852	1791		
			13:04:29	8.78	20.30	124.13	0.02	0.02	852	45079		
			13:04:30	9.00	20.30	124.09	0.02	0.02	852	48136		
			13:04:31	9.20	20.30	124.13	0.02	0.02	852	45561		
			13:04:32	9.18	20.30	124.09	0.02	0.02	852	48686		
			13:04:33	9.14	20.30	124.23	0.02	0.02	852	48136		
			13:04:34	9.20	20.31	124.27	0.02	0.02	852	46054		
			13:04:35	9.18	20.31	124.32	0.04	0.04	852	22130		
			13:04:36	9.27	20.31	124.51	0.02	0.02	852	48136		
			13:04:37	9.26	20.32	124.46	0.02	0.02	852	46557		
			13:04:38	9.23	20.32	124.44	0.18	0.18	852	4620		
			13:04:39	9.26	20.31	124.51	0.02	0.02	852	47072		
			13:04:40	9.26	20.31	124.44	0.02	0.02	852	49825		
			13:04:41	9.19	20.31	124.40	0.02	0.02	852	45561		
			13:04:42	9.34	20.31	124.46	0.02	0.02	852	47072		
			13:04:43	9.23	20.31	124.57	0.09	0.09	852	9467		
			13:04:44	9.24	20.29	124.94	1.14	0.65	852	1318		
			13:04:45	9.28	20.28	125.07	2.53	1.89	852	451		
			13:04:46	9.28	20.27	125.00	2.73	2.07	852	412		
			13:04:47	9.32	20.27	124.95	1.54	1.00	852	848		
			13:04:48	9.32	20.28	124.94	1.98	1.40	852	611	617	
			13:04:49	9.29	20.28	124.99	2.14	1.54	852	553	Plume measurements at 9 ft depth	
			13:04:50	9.23	20.28	124.89	2.07	1.48	852	577		
			13:04:51	9.16	20.27	124.59	1.68	1.13	852	754		
			13:04:52	9.20	20.27	124.25	1.72	1.16	852	732		
			13:04:53	9.16	20.27	124.34	1.16	0.66	852	1283		
			13:04:54	9.24	20.27	124.34	1.76	1.21	852	707		

**TABLE D-9**

Profile PRO-06 on September 21, 2022 (1301-1314 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			13:04:55	9.17	20.27	124.30	0.86	0.39	852	2163		Plume measurements at 9 ft depth
			13:04:56	9.20	20.27	124.15	0.47	0.04	852	20359		
			13:04:57	9.20	20.27	124.09	0.75	0.30	852	2871		
			13:04:58	9.16	20.27	124.29	0.85	0.39	852	2195		
			13:04:59	9.24	20.27	124.57	0.92	0.45	852	1906		
			13:05:00	9.20	20.28	124.51	0.67	0.22	852	3893	2542	
			13:05:01	9.17	20.28	124.38	0.73	0.27	852	3106		
			13:05:02	9.19	20.27	124.58	0.85	0.38	852	2230		
			13:05:03	9.19	20.27	124.65	1.02	0.54	852	1590		
			13:05:04	9.20	20.28	124.55	0.28	0.28	852	2996		
			13:05:05	9.17	20.29	124.51	0.07	0.07	852	12034		
			13:05:06	9.15	20.30	124.49	0.12	0.12	852	7136		
			13:05:07	9.16	20.31	124.49	0.46	0.04	852	23480		
			13:05:08	9.17	20.31	124.49	0.02	0.02	852	50714		
			13:05:09	9.19	20.30	124.42	0.03	0.03	852	27134		
			13:05:10	9.16	20.30	124.30	0.02	0.02	852	46557		
			13:05:11	9.20	20.28	124.42	0.17	0.17	852	4936		
			13:05:12	9.29	20.28	124.17	0.52	0.08	852	10066		
			13:05:13	9.30	20.27	124.45	0.24	0.24	852	3603		
			13:05:14	9.30	20.27	124.46	0.16	0.16	852	5427		
			13:05:15	9.35	20.28	124.38	0.02	0.02	852	50118		
			13:05:16	9.30	20.29	124.38	0.02	0.02	852	48409		
			13:05:17	9.34	20.29	124.38	0.02	0.02	852	47865		
			13:05:18	9.32	20.30	124.34	0.02	0.02	852	48966		
			13:05:19	9.37	20.30	124.38	0.02	0.02	852	48409		
			13:05:20	9.28	20.30	124.36	0.02	0.02	852	47598		
			13:05:21	9.36	20.30	124.32	0.02	0.02	852	46557		
			13:05:22	9.23	20.30	124.38	0.02	0.02	852	51325		
			13:05:23	9.39	20.30	124.53	0.23	0.23	852	3773		
			13:05:24	9.29	20.30	124.42	0.39	0.39	852	2176		
			13:05:25	9.30	20.30	124.46	0.95	0.47	852	1815		
			13:05:26	9.26	20.30	124.55	1.84	1.27	852	669	3051	
			13:05:27	9.23	20.30	124.40	0.69	0.24	852	3489	Plume measurements at 9 ft depth	
			13:05:28	9.27	20.30	124.31	0.13	0.13	852	6382		
			13:05:29	9.25	20.30	124.24	0.02	0.02	852	44607		
			13:05:30	9.26	20.29	124.15	0.02	0.02	852	50118		
			13:05:31	9.32	20.29	124.20	0.02	0.02	852	44145		
			13:05:32	9.32	20.29	124.18	0.05	0.05	852	18725		
			13:05:33	9.30	20.29	123.98	0.02	0.02	852	49249		

**TABLE D-9**

Profile PRO-06 on September 21, 2022 (1301-1314 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			13:05:34	9.30	20.28	124.05	0.02	0.02	852	47865		
			13:05:35	9.30	20.28	124.03	0.02	0.02	852	50118		
			13:05:36	9.22	20.28	124.05	0.29	0.29	852	2978		
			13:05:37	9.27	20.28	124.01	0.10	0.10	852	8478		
			13:05:38	9.18	20.28	124.09	0.02	0.02	852	45561		
			13:05:39	9.20	20.28	124.15	0.02	0.02	852	46557		
			13:05:40	9.16	20.29	124.14	0.02	0.02	852	46557		
			13:05:41	9.10	20.29	124.15	0.02	0.02	852	47072		
			13:05:42	9.13	20.30	124.18	0.03	0.03	852	28784		
			13:05:43	9.10	20.30	124.13	0.05	0.05	852	16291		
			13:05:44	9.12	20.29	124.09	0.02	0.02	852	50714		
			13:05:45	9.17	20.29	124.03	0.02	0.02	852	46054		
			13:05:46	9.08	20.28	124.03	0.02	0.02	852	49249		
			13:05:47	9.17	20.28	123.92	0.02	0.02	852	52593		
			13:05:48	9.05	20.28	123.92	0.39	0.39	852	2163		
			13:05:49	9.16	20.29	124.07	0.09	0.09	852	9425		
			13:05:50	9.08	20.30	124.06	0.02	0.02	852	46054		
			13:05:51	9.11	20.30	124.13	0.02	0.02	852	46557		
			13:05:52	9.22	20.30	124.15	0.02	0.02	852	48136		
			13:05:53	9.26	20.30	124.05	0.02	0.02	852	47598		
			13:05:54	9.37	20.29	123.92	0.02	0.02	852	46054		
			13:05:55	9.44	20.28	123.90	0.02	0.02	852	48409		
			13:05:56	9.45	20.28	123.90	0.02	0.02	852	50714		
			13:05:57	9.47	20.28	123.88	0.02	0.02	852	50714		
			13:05:58	9.51	20.28	123.92	0.02	0.02	852	53250		
			13:05:59	9.49	20.28	124.01	0.02	0.02	852	44607		
			13:06:00	9.45	20.29	124.03	0.02	0.02	852	48686		
			13:06:01	9.52	20.30	124.18	0.02	0.02	852	45079		
			13:06:02	9.42	20.30	124.13	0.02	0.02	852	44145		
			13:06:03	9.49	20.30	124.13	0.02	0.02	852	47598		
			13:06:04	9.47	20.30	124.13	0.02	0.02	852	42178		
			13:06:05	9.48	20.30	124.15	0.02	0.02	852	48966		
			13:06:06	9.38	20.30	124.11	0.02	0.02	852	44145		
			13:06:07	9.36	20.30	124.09	0.02	0.02	852	45079		
			13:06:08	9.23	20.30	124.09	0.02	0.02	852	48136		
			13:06:09	9.33	20.30	124.01	0.02	0.02	852	47598		
			13:06:10	9.21	20.30	124.01	0.02	0.02	852	48409		
			13:06:11	9.18	20.30	123.98	0.02	0.02	852	47598		
			13:06:12	9.18	20.30	123.96	0.02	0.02	852	43030		

**TABLE D-9**

Profile PRO-06 on September 21, 2022 (1301-1314 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			13:06:13	9.24	20.30	123.98	0.02	0.02	852	49249		Plume measurements at 10 ft depth
			13:06:14	9.16	20.30	123.98	0.02	0.02	852	43918		
			13:06:15	9.17	20.30	123.98	0.02	0.02	852	44145		
			13:06:16	9.13	20.30	123.96	0.02	0.02	852	46557		
			13:06:17	9.15	20.29	123.98	0.02	0.02	852	50118		
			13:06:18	9.17	20.29	124.03	0.02	0.02	852	46054		
			13:06:19	9.16	20.29	123.99	0.02	0.02	852	47598		
			13:06:20	9.12	20.29	123.98	0.02	0.02	852	48136		
			13:06:21	9.16	20.29	124.07	0.02	0.02	852	48409		
			13:06:22	9.18	20.29	124.11	0.02	0.02	852	46557		
			13:06:23	9.24	20.29	124.25	0.02	0.02	852	48409		
			13:06:24	9.69	20.29	124.74	0.27	0.27	852	3186		
			13:06:25	9.91	20.29	124.75	0.59	0.15	852	5504	2352	
			13:06:26	10.21	20.29	124.42	0.90	0.43	852	1998		
			13:06:27	10.74	20.29	125.01	1.70	1.15	852	742		
			13:06:28	13.60	20.29	124.53	3.32	2.60	852	328		
			13:06:29	14.58	20.27	124.14	0.43	0.01	852	119548		
			13:06:30	14.72	20.28	124.45	0.63	0.18	852	4636		
			13:06:31	14.76	20.28	125.14	0.63	0.18	852	4607		
			13:06:32	14.78	20.28	124.22	0.02	0.02	852	44607		
			13:06:33	14.75	20.27	123.84	0.02	0.02	852	45561		
			13:06:34	14.70	20.27	123.86	0.02	0.02	852	45561		
			13:06:35	14.73	20.27	123.92	0.02	0.02	852	51951		
			13:06:36	14.74	20.27	123.88	0.02	0.02	852	46557		
			13:06:37	14.79	20.27	123.88	0.02	0.02	852	46557		
			13:06:38	14.77	20.27	123.94	0.02	0.02	852	48409		
			13:06:39	14.78	20.27	123.97	0.02	0.02	852	49825		
			13:06:40	14.89	20.27	123.94	0.02	0.02	852	48136		
			13:06:41	14.70	20.27	123.90	0.02	0.02	852	44145		
			13:06:42	14.79	20.27	123.86	0.02	0.02	852	49535		
			13:06:43	14.67	20.27	123.84	0.02	0.02	852	47072		
			13:06:44	14.71	20.27	123.88	0.02	0.02	852	47598		
			13:06:45	14.74	20.27	123.99	0.02	0.02	852	38904		
			13:06:46	14.69	20.27	124.03	0.08	0.08	852	11166		
			13:06:47	14.74	20.27	124.03	0.05	0.05	852	16198		
			13:06:48	14.72	20.27	123.89	0.02	0.02	852	46557		
			13:06:49	14.74	20.27	123.92	0.02	0.02	852	49535		
			13:06:50	14.75	20.27	123.92	0.02	0.02	852	50118		
			13:06:51	14.64	20.27	123.96	0.02	0.02	852	45561		

**TABLE D-9**

Profile PRO-06 on September 21, 2022 (1301-1314 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			13:06:52	14.80	20.27	124.01	0.02	0.02	852	44145		
			13:06:53	14.66	20.27	124.01	0.02	0.02	852	47598		
			13:06:54	14.76	20.27	123.92	0.02	0.02	852	49249		
			13:06:55	14.70	20.27	123.88	0.05	0.05	852	16291		
			13:06:56	14.70	20.27	123.90	0.02	0.02	852	47072		
			13:06:57	14.75	20.27	123.84	0.02	0.02	852	45079		
			13:06:58	14.68	20.27	123.85	0.02	0.02	852	47333		
			13:06:59	14.77	20.27	123.86	0.02	0.02	852	42600		
			13:07:00	14.71	20.27	123.84	0.02	0.02	852	43918		
			13:07:01	14.72	20.27	123.86	0.02	0.02	852	43030		
			13:07:02	14.74	20.27	123.84	0.02	0.02	852	48136		
			13:07:03	14.72	20.27	123.77	0.02	0.02	852	43692		
			13:07:04	14.72	20.27	123.73	0.02	0.02	852	41765		
			13:07:05	14.71	20.27	123.75	0.02	0.02	852	43918		
			13:07:06	14.73	20.27	123.77	0.02	0.02	852	47072		
			13:07:07	14.76	20.26	123.65	0.02	0.02	852	50714		
			13:07:08	14.72	20.26	123.67	0.02	0.02	852	48136		
			13:07:09	14.70	20.26	123.67	0.02	0.02	852	45561		
			13:07:10	14.72	20.26	123.77	0.02	0.02	852	48136		
			13:07:11	14.69	20.26	123.65	0.02	0.02	852	48409		
			13:07:12	14.72	20.27	123.79	0.02	0.02	852	46557		
			13:07:13	14.72	20.27	123.75	0.02	0.02	852	45561		
			13:07:14	14.72	20.28	123.79	0.02	0.02	852	48686		
			13:07:15	14.75	20.28	123.90	0.02	0.02	852	47333		
			13:07:16	14.65	20.29	123.88	0.09	0.09	852	9737		
			13:07:17	14.78	20.29	124.01	0.02	0.02	852	45561		
			13:07:18	14.81	20.30	123.97	0.02	0.02	852	46557		
			13:07:19	14.82	20.30	123.99	0.02	0.02	852	45561		
			13:07:20	14.86	20.30	124.01	0.02	0.02	852	45561		
			13:07:21	14.89	20.30	123.99	0.02	0.02	852	51325		
			13:07:22	14.85	20.30	124.03	0.02	0.02	852	46054		
			13:07:23	14.83	20.30	123.99	0.02	0.02	852	45079		
			13:07:24	14.86	20.30	124.03	0.02	0.02	852	48409		
			13:07:25	14.85	20.30	123.96	0.02	0.02	852	51325		
			13:07:26	14.92	20.30	123.96	0.02	0.02	852	46054		
			13:07:27	14.87	20.30	123.99	0.02	0.02	852	46054		
			13:07:28	14.88	20.30	123.96	0.02	0.02	852	45561		
			13:07:29	14.84	20.29	123.94	0.02	0.02	852	45079		
			13:07:30	14.84	20.29	123.96	0.02	0.02	852	47598		



**TABLE D-9**

Profile PRO-06 on September 21, 2022 (1301-1314 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			13:07:31	14.92	20.29	123.92	0.02	0.02	852	51325		
			13:07:32	14.83	20.29	123.92	0.02	0.02	852	46557		
			13:07:33	14.85	20.29	123.94	0.02	0.02	852	43918		
			13:07:34	14.79	20.29	123.94	0.02	0.02	852	51325		
			13:07:35	14.86	20.29	123.90	0.02	0.02	852	46557		
			13:07:36	14.81	20.29	123.90	0.02	0.02	852	48686		
			13:07:37	14.93	20.29	123.89	0.02	0.02	852	50118		
			13:07:38	15.27	20.29	123.94	0.02	0.02	852	45561		
			13:07:39	15.47	20.29	124.01	0.02	0.02	852	46557		
			13:07:40	16.16	20.30	124.15	0.02	0.02	852	46054		
			13:07:41	18.83	20.31	124.13	0.02	0.02	852	45561		
			13:07:42	20.42	20.31	124.11	0.02	0.02	852	45561		
			13:07:43	20.53	20.31	124.11	0.02	0.02	852	46557		
			13:07:44	20.69	20.31	124.11	0.02	0.02	852	43469		
			13:07:45	20.83	20.31	124.09	0.02	0.02	852	45561		
			13:07:46	20.79	20.31	124.13	0.02	0.02	852	51325		
			13:07:47	20.89	20.31	124.14	0.02	0.02	852	49249		
			13:07:48	20.88	20.31	124.11	0.02	0.02	852	53924		
			13:07:49	20.96	20.31	124.09	0.02	0.02	852	45561		
			13:07:50	20.88	20.31	124.11	0.02	0.02	852	44145		
			13:07:51	20.85	20.31	124.09	0.02	0.02	852	49825		
			13:07:52	20.91	20.31	124.07	0.02	0.02	852	46054		
			13:07:53	20.92	20.31	124.05	0.02	0.02	852	51325		
			13:07:54	20.87	20.31	124.09	0.02	0.02	852	49535		
			13:07:55	20.90	20.31	124.01	0.02	0.02	852	46557		
			13:07:56	20.90	20.31	123.99	0.02	0.02	852	44607		
			13:07:57	20.85	20.31	124.05	0.02	0.02	852	51325		
			13:07:58	20.97	20.31	124.01	0.02	0.02	852	50118		
			13:07:59	20.88	20.31	123.96	0.02	0.02	852	46557		
			13:08:00	20.88	20.31	123.99	0.02	0.02	852	47072		
			13:08:01	20.96	20.30	123.99	0.02	0.02	852	49535		
			13:08:02	20.86	20.30	123.96	0.02	0.02	852	47598		
			13:08:03	20.83	20.30	123.99	0.02	0.02	852	46054		
			13:08:04	20.92	20.30	123.96	0.02	0.02	852	47072		
			13:08:05	20.85	20.30	124.01	0.02	0.02	852	50118		
			13:08:06	20.85	20.31	123.99	0.02	0.02	852	44145		
			13:08:07	20.82	20.31	124.13	0.02	0.02	852	46054		
			13:08:08	20.80	20.32	124.11	0.02	0.02	852	43030		
			13:08:09	20.85	20.32	124.11	0.02	0.02	852	46054		

**TABLE D-9**

Profile PRO-06 on September 21, 2022 (1301-1314 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			13:08:10	20.82	20.33	124.18	0.02	0.02	852	43692		
			13:08:11	20.87	20.33	124.15	0.02	0.02	852	45561		
			13:08:12	20.80	20.33	124.15	0.02	0.02	852	46054		
			13:08:13	20.77	20.32	124.13	0.02	0.02	852	45079		
			13:08:14	20.83	20.32	124.09	0.02	0.02	852	45319		
			13:08:15	20.81	20.31	124.11	0.02	0.02	852	49249		
			13:08:16	20.85	20.31	124.08	0.02	0.02	852	46557		
			13:08:17	20.85	20.31	124.01	0.02	0.02	852	47598		
			13:08:18	20.76	20.31	124.07	0.02	0.02	852	44145		
			13:08:19	20.86	20.31	124.01	0.02	0.02	852	47598		
			13:08:20	20.81	20.31	124.05	0.02	0.02	852	49249		
			13:08:21	20.82	20.31	124.03	0.02	0.02	852	45319		
			13:08:22	20.83	20.31	124.03	0.02	0.02	852	46054		
			13:08:23	20.80	20.31	124.05	0.02	0.02	852	46054		
			13:08:24	20.87	20.31	124.01	0.02	0.02	852	50118		
			13:08:25	20.77	20.31	124.05	0.02	0.02	852	43469		
			13:08:26	20.85	20.31	124.06	0.02	0.02	852	47072		
			13:08:27	20.78	20.31	124.05	0.02	0.02	852	48966		
			13:08:28	20.87	20.31	124.05	0.02	0.02	852	43249		
			13:08:29	20.85	20.31	124.05	0.02	0.02	852	46557		
			13:08:30	20.81	20.31	124.05	0.02	0.02	852	50714		
			13:08:31	20.86	20.31	124.01	0.02	0.02	852	45561		
			13:08:32	20.82	20.30	124.01	0.02	0.02	852	49535		
			13:08:33	20.81	20.30	124.03	0.02	0.02	852	48136		
			13:08:34	20.87	20.30	124.01	0.02	0.02	852	46054		
			13:08:35	20.72	20.30	124.08	0.02	0.02	852	50118		
			13:08:36	20.80	20.31	124.01	0.02	0.02	852	43030		
			13:08:37	20.83	20.31	124.03	0.02	0.02	852	47865		
			13:08:38	20.80	20.31	124.03	0.02	0.02	852	50118		
			13:08:39	20.89	20.30	124.03	0.02	0.02	852	45561		
			13:08:40	20.75	20.31	124.03	0.02	0.02	852	43030		
			13:08:41	20.84	20.31	124.07	0.02	0.02	852	47072		
			13:08:42	20.73	20.32	124.11	0.02	0.02	852	45079		
			13:08:43	20.81	20.32	124.07	0.02	0.02	852	45561		
			13:08:44	20.77	20.31	124.09	0.02	0.02	852	46557		
			13:08:45	20.77	20.31	124.08	0.02	0.02	852	47072		
			13:08:46	20.81	20.32	124.11	0.02	0.02	852	47598		
			13:08:47	20.80	20.32	124.07	0.02	0.02	852	47865		
			13:08:48	20.81	20.32	124.09	0.02	0.02	852	51951		

**TABLE D-9**

Profile PRO-06 on September 21, 2022 (1301-1314 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			13:08:49	20.78	20.32	124.13	0.02	0.02	852	44145		
			13:08:50	20.79	20.32	124.11	0.02	0.02	852	46557		
			13:08:51	20.77	20.32	124.11	0.02	0.02	852	46557		
			13:08:52	20.80	20.32	124.11	0.02	0.02	852	51325		
			13:08:53	20.85	20.32	124.07	0.02	0.02	852	46557		
			13:08:54	20.82	20.31	124.09	0.02	0.02	852	45561		
			13:08:55	20.85	20.31	124.06	0.02	0.02	852	48966		
			13:08:56	20.73	20.31	124.09	0.02	0.02	852	48686		
			13:08:57	20.79	20.31	124.01	0.02	0.02	852	47865		
			13:08:58	20.80	20.29	123.88	0.02	0.02	852	48136		
			13:08:59	20.83	20.28	123.75	0.02	0.02	852	51325		
			13:09:00	20.85	20.26	123.67	0.02	0.02	852	43469		
			13:09:01	21.18	20.24	123.60	0.02	0.02	852	47598		
			13:09:02	21.23	20.25	123.71	0.02	0.02	852	46557		
			13:09:03	22.51	20.27	123.75	0.02	0.02	852	46557		
			13:09:04	25.51	20.27	123.77	0.02	0.02	852	47598		
			13:09:05	26.00	20.27	123.77	0.02	0.02	852	40571		
			13:09:06	26.16	20.28	123.92	0.02	0.02	852	48966		
			13:09:07	26.19	20.29	124.17	0.02	0.02	852	49535		
			13:09:08	26.14	20.31	124.30	0.02	0.02	852	49825		
			13:09:09	26.17	20.31	124.30	0.02	0.02	852	51951		
			13:09:10	26.15	20.32	124.32	0.02	0.02	852	50714		
			13:09:11	26.15	20.32	124.32	0.02	0.02	852	47598		
			13:09:12	26.14	20.32	124.29	0.02	0.02	852	49535		
			13:09:13	26.13	20.32	124.11	0.02	0.02	852	50118		
			13:09:14	26.16	20.32	124.18	0.02	0.02	852	48686		
			13:09:15	26.15	20.32	124.13	0.02	0.02	852	48686		
			13:09:16	26.11	20.31	124.20	0.02	0.02	852	45079		
			13:09:17	26.19	20.32	124.15	0.02	0.02	852	50714		
			13:09:18	26.09	20.32	124.18	0.02	0.02	852	48136		
			13:09:19	26.11	20.32	124.20	0.02	0.02	852	47598		
			13:09:20	26.12	20.32	124.25	0.02	0.02	852	46054		
			13:09:21	26.15	20.32	124.31	0.02	0.02	852	48136		
			13:09:22	26.11	20.31	124.23	0.02	0.02	852	47072		
			13:09:23	26.16	20.31	124.26	0.02	0.02	852	45561		
			13:09:24	26.12	20.31	124.40	0.02	0.02	852	47598		
			13:09:25	26.17	20.31	124.46	0.02	0.02	852	40571		
			13:09:26	26.12	20.31	124.51	0.02	0.02	852	46557		
			13:09:27	26.27	20.32	124.40	0.02	0.02	852	38206		

**TABLE D-9**

Profile PRO-06 on September 21, 2022 (1301-1314 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			13:09:28	26.24	20.31	124.21	0.02	0.02	852	43918		
			13:09:29	26.26	20.30	124.20	0.07	0.07	852	11784		
			13:09:30	26.22	20.30	124.13	0.02	0.02	852	49535		
			13:09:31	26.22	20.29	124.05	0.02	0.02	852	46557		
			13:09:32	26.25	20.29	124.01	0.02	0.02	852	48686		
			13:09:33	26.17	20.29	124.11	0.02	0.02	852	45561		
			13:09:34	26.16	20.29	124.27	0.02	0.02	852	47598		
			13:09:35	26.14	20.30	124.49	0.47	0.04	852	21561		
			13:09:36	26.16	20.31	124.59	0.22	0.22	852	3864		
			13:09:37	26.21	20.32	124.51	0.03	0.03	852	30213		
			13:09:38	26.15	20.32	124.38	0.02	0.02	852	48136		
			13:09:39	26.15	20.32	124.34	0.02	0.02	852	46557		
			13:09:40	26.15	20.32	124.34	0.02	0.02	852	45079		
			13:09:41	26.20	20.33	124.30	0.02	0.02	852	47598		
			13:09:42	26.16	20.33	124.34	0.02	0.02	852	44607		
			13:09:43	26.17	20.33	124.29	0.02	0.02	852	46557		
			13:09:44	26.21	20.33	124.27	0.02	0.02	852	48966		
			13:09:45	26.21	20.32	124.24	0.02	0.02	852	49249		
			13:09:46	26.15	20.32	124.24	0.02	0.02	852	51325		
			13:09:47	26.17	20.32	124.22	0.02	0.02	852	48136		
			13:09:48	26.21	20.32	124.15	0.02	0.02	852	50118		
			13:09:49	26.13	20.32	124.13	0.02	0.02	852	50118		
			13:09:50	26.17	20.32	124.13	0.02	0.02	852	48136		
			13:09:51	26.09	20.31	124.07	0.02	0.02	852	48136		
			13:09:52	26.19	20.31	124.07	0.03	0.03	852	28306		
			13:09:53	26.08	20.30	123.99	0.02	0.02	852	47598		
			13:09:54	26.10	20.30	123.94	0.02	0.02	852	46054		
			13:09:55	26.16	20.29	123.90	0.02	0.02	852	47598		
			13:09:56	26.12	20.28	123.79	0.02	0.02	852	48136		
			13:09:57	26.22	20.27	123.77	0.02	0.02	852	47072		
			13:09:58	26.13	20.28	123.82	0.02	0.02	852	53250		
			13:09:59	26.18	20.28	123.88	0.02	0.02	852	48966		
			13:10:00	26.11	20.28	124.05	0.02	0.02	852	45561		
			13:10:01	26.16	20.29	124.13	0.02	0.02	852	48136		
			13:10:02	26.18	20.30	124.20	0.02	0.02	852	45561		
			13:10:03	26.12	20.31	124.32	0.02	0.02	852	45079		
			13:10:04	26.20	20.31	124.27	0.02	0.02	852	48136		
			13:10:05	26.18	20.30	124.11	0.02	0.02	852	50118		
			13:10:06	26.17	20.29	124.11	0.02	0.02	852	49825		

**TABLE D-9**

Profile PRO-06 on September 21, 2022 (1301-1314 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			13:10:07	26.18	20.29	124.09	0.02	0.02	852	48136		Plume measurements at 26 ft depth
			13:10:08	26.17	20.29	124.07	0.02	0.02	852	44145		
			13:10:09	26.23	20.29	124.11	0.02	0.02	852	46557		
			13:10:10	26.15	20.30	124.15	0.02	0.02	852	48136		
			13:10:11	26.20	20.30	124.24	0.02	0.02	852	46054		
			13:10:12	26.13	20.31	124.46	0.02	0.02	852	47072		
			13:10:13	26.17	20.31	124.57	0.02	0.02	852	50118		
			13:10:14	26.14	20.31	124.78	0.02	0.02	852	48409		
			13:10:15	26.21	20.31	124.85	0.02	0.02	852	45561		
			13:10:16	26.13	20.30	124.80	0.02	0.02	852	44145		
			13:10:17	26.19	20.30	124.76	0.02	0.02	852	48136		
			13:10:18	26.21	20.31	124.70	0.02	0.02	852	38904		
			13:10:19	26.17	20.31	124.68	0.07	0.07	852	12948		
			13:10:20	26.22	20.31	124.63	0.31	0.31	852	2735		
			13:10:21	26.18	20.31	124.55	0.24	0.24	852	3603	4043	
			13:10:22	26.22	20.31	124.61	0.10	0.10	852	8950		
			13:10:23	26.03	20.31	124.55	0.30	0.30	852	2871		
			13:10:24	26.20	20.31	124.59	0.41	0.41	852	2057		
			13:10:25	26.17	20.31	124.59	0.04	0.04	852	20985		
			13:10:26	26.70	20.31	124.80	0.07	0.07	852	12068		
			13:10:27	27.75	20.31	124.84	0.85	0.38	852	2236		
			13:10:28	30.64	20.31	124.32	0.43	0.01	852	113817		
			13:10:29	32.01	20.31	124.32	0.02	0.02	852	47072		
			13:10:30	32.09	20.31	124.32	0.02	0.02	852	45561		
			13:10:31	32.22	20.31	124.34	0.05	0.05	852	16167		
			13:10:32	32.21	20.31	124.34	0.02	0.02	852	47072		
			13:10:33	32.28	20.31	124.34	0.02	0.02	852	47072		
			13:10:34	32.18	20.31	124.36	0.08	0.08	852	10798		
			13:10:35	32.25	20.31	124.34	0.06	0.06	852	13333		
			13:10:36	32.28	20.31	124.34	0.02	0.02	852	44607		
			13:10:37	32.27	20.31	124.34	0.02	0.02	852	46054		
			13:10:38	32.24	20.31	124.34	0.02	0.02	852	48966		
			13:10:39	32.24	20.31	124.34	0.02	0.02	852	45079		
			13:10:40	32.28	20.31	124.38	0.02	0.02	852	46557		
			13:10:41	32.26	20.31	124.44	0.02	0.02	852	42600		
			13:10:42	32.25	20.31	124.49	0.02	0.02	852	50118		
			13:10:43	32.30	20.31	124.44	0.03	0.03	852	30870		
			13:10:44	32.32	20.31	124.44	0.17	0.17	852	5123		
			13:10:45	32.23	20.31	124.53	0.02	0.02	852	40189		

**TABLE D-9**

Profile PRO-06 on September 21, 2022 (1301-1314 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			13:10:46	32.22	20.31	124.49	0.02	0.02	852	46054		Plume measurements at 32 ft depth
			13:10:47	32.22	20.31	124.49	0.19	0.19	852	4472		
			13:10:48	32.23	20.31	124.44	0.10	0.10	852	8623	5331	
			13:10:49	32.24	20.31	124.49	0.24	0.24	852	3544		
			13:10:50	32.23	20.31	124.40	0.17	0.17	852	4908		
			13:10:51	32.23	20.31	124.42	0.17	0.17	852	5105		
			13:10:52	32.21	20.31	124.40	0.07	0.07	852	11950		
			13:10:53	32.23	20.31	124.40	0.02	0.02	852	46054		
			13:10:54	32.21	20.31	124.36	0.02	0.02	852	51951		
			13:10:55	32.20	20.31	124.42	0.04	0.04	852	19189		
			13:10:56	32.25	20.31	124.38	0.02	0.02	852	48136		
			13:10:57	32.21	20.31	124.39	0.02	0.02	852	50714		
			13:10:58	32.18	20.30	124.15	0.02	0.02	852	45561		
			13:10:59	32.26	20.28	123.94	0.02	0.02	852	45561		
			13:11:00	32.26	20.27	123.86	0.02	0.02	852	47598		
			13:11:01	32.34	20.26	123.77	0.02	0.02	852	45079		
			13:11:02	32.29	20.25	123.61	0.02	0.02	852	51325		
			13:11:03	32.27	20.25	123.60	0.02	0.02	852	49535		
			13:11:04	32.31	20.24	123.55	0.02	0.02	852	49535		
			13:11:05	32.22	20.24	123.52	0.02	0.02	852	46557		
			13:11:06	32.27	20.23	123.48	0.02	0.02	852	48686		
			13:11:07	32.29	20.23	123.51	0.02	0.02	852	48686		
			13:11:08	32.31	20.23	123.53	0.02	0.02	852	45561		
			13:11:09	32.29	20.24	123.57	0.02	0.02	852	47072		
			13:11:10	32.22	20.24	123.52	0.02	0.02	852	50118		
			13:11:11	32.13	20.23	123.44	0.02	0.02	852	49249		
			13:11:12	32.22	20.23	123.46	0.02	0.02	852	46557		
			13:11:13	32.15	20.23	123.53	0.02	0.02	852	48409		
			13:11:14	32.16	20.23	123.46	0.02	0.02	852	47072		
			13:11:15	32.22	20.23	123.48	0.02	0.02	852	46054		
			13:11:16	32.29	20.23	123.46	0.02	0.02	852	46557		
			13:11:17	32.49	20.22	123.44	0.02	0.02	852	51325		
			13:11:18	33.72	20.22	123.46	0.02	0.02	852	44607		
			13:11:19	36.24	20.22	123.40	0.02	0.02	852	51951		
			13:11:20	37.25	20.22	123.40	0.02	0.02	852	47072		
			13:11:21	37.88	20.22	123.40	0.02	0.02	852	49535		
			13:11:22	38.34	20.22	123.36	0.02	0.02	852	52593		
			13:11:23	38.66	20.22	123.42	0.02	0.02	852	46557		
			13:11:24	38.57	20.22	123.38	0.02	0.02	852	44607		

**TABLE D-9**

Profile PRO-06 on September 21, 2022 (1301-1314 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			13:11:25	38.68	20.22	123.40	0.02	0.02	852	45079		
			13:11:26	38.59	20.22	123.40	0.02	0.02	852	46054		
			13:11:27	38.64	20.22	123.42	0.02	0.02	852	47865		
			13:11:28	38.59	20.22	123.42	0.02	0.02	852	48966		
			13:11:29	38.52	20.22	123.38	0.02	0.02	852	47598		
			13:11:30	38.54	20.22	123.39	0.02	0.02	852	49535		
			13:11:31	38.50	20.22	123.42	0.02	0.02	852	48136		
			13:11:32	38.56	20.22	123.38	0.02	0.02	852	47072		
			13:11:33	38.50	20.22	123.40	0.02	0.02	852	48136		
			13:11:34	38.55	20.22	123.38	0.02	0.02	852	48686		
			13:11:35	38.58	20.22	123.40	0.02	0.02	852	43692		
			13:11:36	38.54	20.22	123.38	0.02	0.02	852	47072		
			13:11:37	38.51	20.22	123.40	0.02	0.02	852	50714		
			13:11:38	38.52	20.22	123.36	0.02	0.02	852	48136		
			13:11:39	38.52	20.22	123.40	0.02	0.02	852	50118		
			13:11:40	38.60	20.22	123.39	0.02	0.02	852	47598		
			13:11:41	38.51	20.22	123.42	0.02	0.02	852	49249		
			13:11:42	38.61	20.22	123.38	0.02	0.02	852	51325		
			13:11:43	38.51	20.22	123.38	0.02	0.02	852	46054		
			13:11:44	38.57	20.22	123.40	0.02	0.02	852	47072		
			13:11:45	38.55	20.22	123.38	0.02	0.02	852	50118		
			13:11:46	38.52	20.22	123.44	0.02	0.02	852	47072		
			13:11:47	38.55	20.22	123.44	0.02	0.02	852	48136		
			13:11:48	38.52	20.22	123.48	0.02	0.02	852	45079		
			13:11:49	38.57	20.23	123.48	0.02	0.02	852	48136		
			13:11:50	38.55	20.23	123.54	0.02	0.02	852	46054		
			13:11:51	38.56	20.23	123.54	0.02	0.02	852	47598		
			13:11:52	38.55	20.23	123.53	0.02	0.02	852	48966		
			13:11:53	38.58	20.23	123.50	0.02	0.02	852	46557		
			13:11:54	38.59	20.23	123.56	0.02	0.02	852	47072		
			13:11:55	38.53	20.23	123.54	0.02	0.02	852	47072		
			13:11:56	38.55	20.23	123.52	0.02	0.02	852	44145		
			13:11:57	38.57	20.23	123.51	0.02	0.02	852	48136		
			13:11:58	38.55	20.23	123.56	0.02	0.02	852	44145		
			13:11:59	38.62	20.23	123.58	0.02	0.02	852	47598		
			13:12:00	38.53	20.23	123.54	0.02	0.02	852	47333		
			13:12:01	38.54	20.23	123.54	0.02	0.02	852	49249		
			13:12:02	38.59	20.23	123.57	0.02	0.02	852	51325		
			13:12:03	38.55	20.23	123.63	0.02	0.02	852	50118		

**TABLE D-9**

Profile PRO-06 on September 21, 2022 (1301-1314 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			13:12:04	38.64	20.23	123.63	0.02	0.02	852	48966		
			13:12:05	38.59	20.23	123.77	0.02	0.02	852	44607		
			13:12:06	38.63	20.23	123.84	0.02	0.02	852	49535		
			13:12:07	38.60	20.23	123.79	0.02	0.02	852	49825		
			13:12:08	38.63	20.23	123.82	0.02	0.02	852	48686		
			13:12:09	38.63	20.23	123.71	0.09	0.09	852	9301		
			13:12:10	38.59	20.22	123.59	0.02	0.02	852	46054		
			13:12:11	38.62	20.22	123.60	0.02	0.02	852	48409		
			13:12:12	38.53	20.22	123.53	0.02	0.02	852	45561		
			13:12:13	38.63	20.22	123.71	0.02	0.02	852	51951		
			13:12:14	38.60	20.23	123.84	0.02	0.02	852	48136		
			13:12:15	38.57	20.23	123.73	0.02	0.02	852	46557		
			13:12:16	38.55	20.23	123.65	0.02	0.02	852	50118		
			13:12:17	38.57	20.22	123.58	0.02	0.02	852	50714		
			13:12:18	38.56	20.22	123.58	0.03	0.03	852	26296		
			13:12:19	38.63	20.22	123.56	0.02	0.02	852	48966		
			13:12:20	39.09	20.22	123.46	0.02	0.02	852	46557		
			13:12:21	39.66	20.22	123.42	0.02	0.02	852	50714		
			13:12:22	41.06	20.22	123.42	0.02	0.02	852	46557		
			13:12:23	44.02	20.22	123.73	0.02	0.02	852	45079		
			13:12:24	44.52	20.22	123.71	0.19	0.19	852	4554		
			13:12:25	44.69	20.22	123.67	0.02	0.02	852	51951		
			13:12:26	44.64	20.22	123.63	0.02	0.02	852	48966		
			13:12:27	44.65	20.22	123.63	0.02	0.02	852	45561		
			13:12:28	44.64	20.22	123.71	0.06	0.06	852	15242		
			13:12:29	44.59	20.22	123.71	0.30	0.30	852	2832		
			13:12:30	44.63	20.22	123.73	0.05	0.05	852	18362		
			13:12:31	44.74	20.23	123.86	0.14	0.14	852	6292		
			13:12:32	44.50	20.23	123.90	0.16	0.16	852	5427		
			13:12:33	44.66	20.23	124.05	0.02	0.02	852	45079		
			13:12:34	44.62	20.23	124.25	0.02	0.02	852	45319		
			13:12:35	44.58	20.23	124.34	0.02	0.02	852	48409		
			13:12:36	44.52	20.23	124.37	0.02	0.02	852	49249		
			13:12:37	44.66	20.23	124.22	0.50	0.07	852	12060		
			13:12:38	44.60	20.23	124.46	1.16	0.66	852	1288		
			13:12:39	44.60	20.23	124.53	1.30	0.79	852	1083		
			13:12:40	44.71	20.24	124.63	0.41	0.41	852	2091		
			13:12:41	44.69	20.24	124.90	1.12	0.63	852	1360		
			13:12:42	44.65	20.24	125.26	0.95	0.47	852	1798		



**TABLE D-9**

Profile PRO-06 on September 21, 2022 (1301-1314 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			13:12:43	44.67	20.25	125.45	0.81	0.35	852	2466		Plume measurements at 45 ft depth
			13:12:44	44.64	20.25	125.28	1.92	1.35	852	633		
			13:12:45	44.64	20.25	125.47	2.12	1.53	852	559		
			13:12:46	44.68	20.25	125.87	2.93	2.25	852	379		
			13:12:47	44.70	20.26	126.25	2.68	2.03	852	420		
			13:12:48	44.68	20.26	126.44	2.90	2.22	852	384		
			13:12:49	44.63	20.26	126.56	2.91	2.23	852	382		
			13:12:50	44.76	20.26	126.62	3.36	2.63	852	323		
			13:12:51	44.70	20.26	126.69	3.34	2.61	852	326		
			13:12:52	44.69	20.26	126.66	3.74	2.98	852	286		
			13:12:53	44.84	20.26	126.62	5.40	4.47	852	191		
			13:12:54	44.80	20.26	126.64	6.24	5.22	852	163		
			13:12:55	44.79	20.26	126.64	6.44	5.40	852	158		
			13:12:56	44.80	20.26	126.66	6.62	5.56	852	153	258	
			13:12:57	44.80	20.26	126.69	6.27	5.25	852	162		
			13:12:58	44.74	20.26	126.66	6.42	5.38	852	158		
			13:12:59	44.78	20.26	126.64	6.53	5.48	852	155		
			13:13:00	44.81	20.26	126.62	6.44	5.40	852	158		
			13:13:01	44.76	20.26	126.62	6.46	5.41	852	157		
			13:13:02	44.82	20.26	126.75	7.23	6.11	852	140		
			13:13:03	44.78	20.26	126.73	6.63	5.57	852	153		
			13:13:04	44.80	20.26	126.71	6.83	5.75	852	148		
			13:13:05	44.80	20.26	126.66	7.33	6.20	852	137		
			13:13:06	44.74	20.26	126.66	6.93	5.84	852	146		
			13:13:07	44.78	20.26	126.66	7.75	6.58	852	130		
			13:13:08	44.81	20.26	126.62	7.31	6.18	852	138		
			13:13:09	44.79	20.26	126.66	7.22	6.10	852	140		
			13:13:10	44.83	20.26	126.62	7.01	5.91	852	144		
			13:13:11	44.71	20.26	125.85	6.87	5.78	852	147		
			13:13:12	44.63	20.25	125.66	6.58	5.53	852	154		
			13:13:13	44.60	20.25	125.62	6.87	5.79	852	147		
			13:13:14	44.60	20.25	125.16	6.98	5.89	852	145		
			13:13:15	44.58	20.24	124.97	6.70	5.63	852	151		
			13:13:16	44.68	20.24	124.90	6.07	5.07	852	168		
			13:13:17	44.59	20.24	124.70	5.89	4.91	852	174		
			13:13:18	44.64	20.24	124.70	5.59	4.64	852	184		
			13:13:19	44.66	20.24	124.78	4.99	4.10	852	208		
			13:13:20	44.55	20.24	124.68	4.66	3.81	852	224		
			13:13:21	44.65	20.24	124.76	5.71	4.74	852	180		

**TABLE D-9**

Profile PRO-06 on September 21, 2022 (1301-1314 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			13:13:22	44.61	20.24	124.94	5.50	4.56	852	187		
			13:13:23	44.64	20.24	124.80	4.31	3.49	852	244		
			13:13:24	44.68	20.24	124.78	3.12	2.42	852	352		
			13:13:25	44.63	20.24	124.87	3.25	2.53	852	336		
			13:13:26	44.72	20.24	124.63	3.37	2.65	852	322		
			13:13:27	44.62	20.24	124.94	2.91	2.23	852	382		
			13:13:28	44.73	20.24	124.76	2.40	1.78	852	480		
			13:13:29	44.64	20.24	124.85	3.37	2.65	852	322		
			13:13:30	44.71	20.24	124.86	3.29	2.58	852	331		
			13:13:31	44.65	20.24	124.78	2.73	2.07	852	412		
			13:13:32	44.63	20.24	124.86	2.59	1.95	852	437		
			13:13:33	44.75	20.24	124.76	2.25	1.64	852	519		
			13:13:34	44.64	20.24	124.86	2.60	1.96	852	436		
			13:13:35	44.75	20.24	124.87	2.61	1.96	852	435		
			13:13:36	44.61	20.24	124.94	3.51	2.77	852	307		
			13:13:37	44.75	20.24	124.94	3.26	2.55	852	334		
			13:13:38	44.71	20.24	125.01	2.72	2.06	852	414		
			13:13:39	44.73	20.24	125.03	2.16	1.56	852	545		
			13:13:40	44.64	20.24	125.05	2.50	1.86	852	457		
			13:13:41	44.64	20.24	125.09	3.28	2.57	852	332		
			13:13:42	44.61	20.24	125.13	3.25	2.54	852	335		
			13:13:43	44.64	20.24	125.16	3.13	2.43	852	350		
			13:13:44	44.63	20.24	125.35	3.05	2.36	852	361		
			13:13:45	44.76	20.24	125.36	3.74	2.98	852	286		
			13:13:46	44.70	20.25	125.57	3.76	2.99	852	285		
			13:13:47	44.63	20.25	125.59	4.71	3.85	852	221	252	Plume measurements at 45 ft depth
			13:13:48	44.74	20.25	125.68	5.52	4.58	852	186		
			13:13:49	44.60	20.25	125.72	5.87	4.89	852	174		
			13:13:50	44.79	20.25	125.72	6.04	5.04	852	169		
			13:13:51	44.64	20.25	125.76	6.44	5.40	852	158		
			13:13:52	44.64	20.25	125.72	5.66	4.70	852	181		
			13:13:53	44.58	20.25	125.72	5.35	4.42	852	193		
			13:13:54	44.63	20.25	125.76	5.24	4.32	852	197		
			13:13:55	44.55	20.25	125.78	5.13	4.22	852	202		
			13:13:56	44.62	20.25	125.91	4.70	3.83	852	222		
			13:13:57	44.50	20.25	125.95	4.89	4.01	852	213		
			13:13:58	44.58	20.25	125.99	5.02	4.13	852	206		
			13:13:59	44.51	20.25	126.04	5.17	4.26	852	200		
			13:14:00	44.67	20.25	126.02	5.43	4.50	852	189		

**TABLE D-9**

Profile PRO-06 on September 21, 2022 (1301-1314 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

59	Instantaneous Minimum Dilution in Profile
150	Minimum Average Dilution in Profile
398	Detected Plume Average Dilution
1675	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:14:01	44.66	20.25	125.99	5.52	4.58	852	186		
			13:14:02	44.82	20.26	126.04	5.07	4.17	852	204		

**TABLE D-10**

Profile PRO-07 on September 21, 2022 (1332-1341 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>314</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>994</b>	<b>Minimum Average Dilution in Profile</b>
<b>994</b>	<b>Detected Plume Average Dilution</b>
<b>3571</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-7 (North Mixing Zone Boundary - 242 ft from Diffuser mid-point)	49 ft	0.04 m/sec 175 deg. (mag.) Early Flood tide	13:32:19	2.80	20.29	124.63	0.14	0.14	831	5763	3086	Possible plume traces near surface
			13:32:20	2.75	20.29	124.70	0.02	0.02	831	45912		
			13:32:21	2.75	20.27	124.44	0.21	0.21	831	3982		
			13:32:22	2.62	20.29	124.57	0.84	0.38	831	2189		
			13:32:23	1.97	20.31	124.61	0.02	0.02	831	33780		
			13:32:24	2.13	20.34	124.68	0.48	0.05	831	15426		
			13:32:25	1.96	20.32	124.61	0.09	0.09	831	9475		
			13:32:26	2.05	20.33	124.68	0.14	0.14	831	5919		
			13:32:27	2.10	20.33	124.63	0.08	0.08	831	10036		
			13:32:28	2.01	20.34	124.63	0.02	0.02	831	44919		
			13:32:29	2.18	20.34	124.65	0.08	0.08	831	10519		
			13:32:30	1.94	20.33	124.65	0.05	0.05	831	16199		
			13:32:31	2.16	20.34	124.68	0.02	0.02	831	45410		
			13:32:32	2.02	20.33	124.63	0.29	0.29	831	2914		
			13:32:33	2.06	20.34	124.72	0.10	0.10	831	8269		
			13:32:34	2.09	20.35	124.74	0.28	0.28	831	2972		
			13:32:35	2.07	20.35	124.70	0.10	0.10	831	7937		
			13:32:36	2.10	20.35	124.74	0.09	0.09	831	9663		
			13:32:37	2.10	20.34	124.72	0.06	0.06	831	13005		
			13:32:38	2.07	20.32	124.70	0.02	0.02	831	38651		
			13:32:39	2.15	20.32	124.70	0.02	0.02	831	43968		
			13:32:40	2.03	20.31	124.70	0.03	0.03	831	24955		
			13:32:41	2.14	20.31	124.70	0.02	0.02	831	42835		
			13:32:42	2.02	20.32	124.68	0.02	0.02	831	43968		
			13:32:43	2.08	20.31	124.65	0.02	0.02	831	44439		
13:32:44	2.11	20.31	124.63	0.08	0.08	831	10709					
13:32:45	2.04	20.32	124.65	0.02	0.02	831	44439					
13:32:46	2.12	20.31	124.70	0.02	0.02	831	41970					
13:32:47	2.08	20.32	124.70	0.02	0.02	831	43508					
13:32:48	2.11	20.32	124.70	0.02	0.02	831	38832					
13:32:49	2.07	20.32	124.70	0.02	0.02	831	47216					
13:32:50	2.10	20.32	124.68	0.15	0.15	831	5680					
13:32:51	2.11	20.32	124.72	0.02	0.02	831	45912					
13:32:52	2.08	20.32	124.70	0.08	0.08	831	10891					
13:32:53	2.02	20.32	124.65	0.02	0.02	831	41970					
13:32:54	2.05	20.32	124.70	0.02	0.02	831	43508					
13:32:55	2.05	20.32	124.72	0.06	0.06	831	14427					

**TABLE D-10**

Profile PRO-07 on September 21, 2022 (1332-1341 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

314	Instantaneous Minimum Dilution in Profile
994	Minimum Average Dilution in Profile
994	Detected Plume Average Dilution
3571	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:32:56	2.10	20.32	124.72	0.02	0.02	831	46949		
			13:32:57	2.05	20.33	124.75	0.02	0.02	831	42398		
			13:32:58	2.06	20.33	124.70	0.02	0.02	831	42398		
			13:32:59	1.99	20.32	124.74	0.02	0.02	831	44439		
			13:33:00	1.93	20.32	124.72	0.02	0.02	831	41759		
			13:33:01	2.04	20.34	124.98	0.02	0.02	831	43968		
			13:33:02	1.98	20.50	125.22	0.02	0.02	831	45410		
			13:33:03	2.07	20.52	125.13	0.02	0.02	831	41139		
			13:33:04	2.01	20.51	125.16	0.02	0.02	831	46949		
			13:33:05	2.09	20.51	125.13	0.02	0.02	831	44439		
			13:33:06	2.00	20.51	125.16	0.02	0.02	831	48882		
			13:33:07	2.05	20.50	125.05	0.02	0.02	831	43057		
			13:33:08	2.03	20.49	125.09	0.05	0.05	831	15620		
			13:33:09	1.95	20.51	125.22	0.02	0.02	831	47486		
			13:33:10	2.05	20.53	125.24	0.04	0.04	831	20932		
			13:33:11	1.94	20.55	125.35	0.02	0.02	831	43508		
			13:33:12	2.02	20.56	125.35	0.02	0.02	831	37602		
			13:33:13	2.00	20.55	125.24	0.02	0.02	831	44919		
			13:33:14	1.99	20.54	125.26	0.28	0.28	831	2926		Possible plume traces near surface
			13:33:15	2.01	20.53	125.18	0.02	0.02	831	42183		
			13:33:16	2.03	20.53	125.24	0.09	0.09	831	8984		
			13:33:17	2.00	20.53	125.20	0.02	0.02	831	46425		
			13:33:18	2.06	20.52	125.24	0.02	0.02	831	42398		
			13:33:19	2.03	20.53	125.16	0.02	0.02	831	43057		
			13:33:20	2.04	20.52	125.18	0.02	0.02	831	43968		
			13:33:21	2.00	20.51	125.13	0.02	0.02	831	46685		
			13:33:22	2.02	20.52	125.18	0.02	0.02	831	43508		
			13:33:23	2.02	20.52	125.18	0.02	0.02	831	41970		
			13:33:24	2.06	20.53	125.20	0.02	0.02	831	44439		
			13:33:25	2.03	20.53	125.25	0.02	0.02	831	44439		
			13:33:26	1.99	20.53	125.18	0.02	0.02	831	42835		
			13:33:27	2.04	20.53	125.18	0.02	0.02	831	46425		
			13:33:28	1.98	20.52	125.16	0.03	0.03	831	30218		
			13:33:29	1.98	20.51	125.09	0.03	0.03	831	25182		
			13:33:30	2.15	20.49	125.03	0.02	0.02	831	44439		
			13:33:31	2.41	20.47	124.99	0.02	0.02	831	44439		
			13:33:32	2.65	20.46	124.90	0.02	0.02	831	42398		

**TABLE D-10**

Profile PRO-07 on September 21, 2022 (1332-1341 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

314	Instantaneous Minimum Dilution in Profile
994	Minimum Average Dilution in Profile
994	Detected Plume Average Dilution
3571	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:33:33	3.04	20.42	124.82	0.02	0.02	831	41139		
			13:33:34	5.09	20.40	124.72	0.02	0.02	831	46425		
			13:33:35	7.67	20.37	124.67	0.02	0.02	831	47216		
			13:33:36	7.87	20.36	124.72	0.02	0.02	831	45912		
			13:33:37	7.99	20.36	124.68	0.02	0.02	831	45410		
			13:33:38	7.93	20.36	124.65	0.02	0.02	831	45912		
			13:33:39	7.93	20.36	124.65	0.02	0.02	831	48596		
			13:33:40	7.98	20.36	124.65	0.02	0.02	831	45912		
			13:33:41	8.00	20.36	124.68	0.02	0.02	831	46425		
			13:33:42	7.88	20.36	124.63	0.02	0.02	831	43057		
			13:33:43	8.07	20.36	124.65	0.02	0.02	831	44919		
			13:33:44	7.94	20.36	124.61	0.02	0.02	831	42835		
			13:33:45	8.08	20.36	124.65	0.02	0.02	831	48882		
			13:33:46	8.00	20.36	124.63	0.02	0.02	831	42183		
			13:33:47	8.05	20.36	124.63	0.02	0.02	831	41139		
			13:33:48	8.00	20.35	124.65	0.02	0.02	831	49464		
			13:33:49	8.02	20.35	124.68	0.02	0.02	831	43968		
			13:33:50	8.05	20.35	124.65	0.02	0.02	831	46425		
			13:33:51	8.04	20.35	124.63	0.02	0.02	831	46425		
			13:33:52	8.03	20.36	124.63	0.04	0.04	831	21145		
			13:33:53	8.01	20.35	124.65	0.02	0.02	831	45912		
			13:33:54	8.06	20.35	124.68	0.02	0.02	831	41970		
			13:33:55	8.04	20.35	124.68	0.02	0.02	831	46425		
			13:33:56	7.97	20.35	124.65	0.02	0.02	831	46949		
			13:33:57	8.33	20.35	124.72	0.02	0.02	831	45410		
			13:33:58	8.92	20.34	124.63	0.02	0.02	831	49464		
			13:33:59	10.87	20.34	124.70	0.11	0.11	831	7603		
			13:34:00	13.53	20.33	124.74	0.08	0.08	831	11007		
			13:34:01	13.78	20.33	124.72	0.19	0.19	831	4292		
			13:34:02	13.87	20.32	124.74	0.26	0.26	831	3148		Possible plume traces at 14 ft
			13:34:03	13.85	20.32	124.76	0.06	0.06	831	14973		
			13:34:04	13.96	20.32	124.65	0.35	0.35	831	2396		
			13:34:05	13.89	20.31	124.59	0.22	0.22	831	3705		
			13:34:06	13.92	20.30	124.51	0.05	0.05	831	15164		
			13:34:07	13.89	20.30	124.55	0.46	0.04	831	22789		
			13:34:08	13.95	20.30	124.44	0.28	0.28	831	2972		
			13:34:09	13.90	20.30	124.44	0.16	0.16	831	5174		

**TABLE D-10**

Profile PRO-07 on September 21, 2022 (1332-1341 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>314</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>994</b>	<b>Minimum Average Dilution in Profile</b>
<b>994</b>	<b>Detected Plume Average Dilution</b>
<b>3571</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:34:10	13.94	20.30	124.44	0.13	0.13	831	6643	4287	Possible plume traces at 14 ft
			13:34:11	13.92	20.30	124.46	0.35	0.35	831	2359		
			13:34:12	13.94	20.30	124.46	0.06	0.06	831	13005		
			13:34:13	13.95	20.30	124.44	0.08	0.08	831	10196		
			13:34:14	13.95	20.30	124.44	0.06	0.06	831	14973		
			13:34:15	13.93	20.30	124.53	0.07	0.07	831	11322		
			13:34:16	13.92	20.30	124.55	0.05	0.05	831	15389		
			13:34:17	13.95	20.30	124.51	0.08	0.08	831	10863		
			13:34:18	13.90	20.31	124.57	0.32	0.32	831	2594		
			13:34:19	13.95	20.31	124.57	0.70	0.25	831	3382		
			13:34:20	13.91	20.31	124.61	0.39	0.39	831	2131	2573	
			13:34:21	13.94	20.31	124.63	0.38	0.38	831	2185		
			13:34:22	13.96	20.31	124.59	0.06	0.06	831	15082		
			13:34:23	13.90	20.31	124.64	0.05	0.05	831	16012		
			13:34:24	13.94	20.31	124.63	0.03	0.03	831	25335		
			13:34:25	13.93	20.31	124.59	0.05	0.05	831	18304		
			13:34:26	13.94	20.31	124.59	0.20	0.20	831	4132		
			13:34:27	13.94	20.31	124.70	0.22	0.22	831	3808		
			13:34:28	13.93	20.31	124.63	0.17	0.17	831	4751		
			13:34:29	13.96	20.31	124.61	0.06	0.06	831	14656		
			13:34:30	13.94	20.31	124.61	0.17	0.17	831	4820		
			13:34:31	13.93	20.31	124.63	0.21	0.21	831	3986		
			13:34:32	13.96	20.32	124.65	0.53	0.09	831	8962		
			13:34:33	13.94	20.31	124.58	3.37	2.65	831	314		
			13:34:34	13.95	20.31	124.61	1.94	1.36	831	611		
			13:34:35	13.95	20.31	124.57	1.46	0.93	831	896	994	
			13:34:36	13.95	20.30	124.53	0.39	0.39	831	2157		
			13:34:37	13.98	20.30	124.55	0.02	0.02	831	47486		
			13:34:38	13.94	20.30	124.46	0.35	0.35	831	2373		
			13:34:39	13.94	20.30	124.53	0.10	0.10	831	8523		
			13:34:40	13.93	20.31	124.53	0.04	0.04	831	19103		
			13:34:41	13.94	20.31	124.59	0.19	0.19	831	4353		
			13:34:42	13.95	20.31	124.49	0.06	0.06	831	13128		
			13:34:43	13.90	20.30	124.46	0.24	0.24	831	3425		
			13:34:44	13.92	20.31	124.51	0.72	0.26	831	3155		
			13:34:45	13.91	20.31	124.53	0.09	0.09	831	8850		
			13:34:46	13.97	20.32	124.55	0.02	0.02	831	48882		

**TABLE D-10**

Profile PRO-07 on September 21, 2022 (1332-1341 hours PDT) located at North MZB (242 feet from Outfall Diffuser)

Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

314	Instantaneous Minimum Dilution in Profile
994	Minimum Average Dilution in Profile
994	Detected Plume Average Dilution
3571	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:34:47	13.89	20.32	124.57	0.05	0.05	831	16455		
			13:34:48	13.90	20.32	124.59	0.17	0.17	831	4779		
			13:34:49	13.94	20.32	124.65	0.02	0.02	831	45912		
			13:34:50	13.89	20.33	124.61	0.33	0.33	831	2508		
			13:34:51	13.95	20.32	124.59	0.15	0.15	831	5438		
			13:34:52	13.98	20.33	124.63	0.02	0.02	831	39952		
			13:34:53	13.93	20.33	124.61	0.21	0.21	831	3890		
			13:34:54	13.90	20.33	124.59	0.02	0.02	831	41139		
			13:34:55	13.88	20.33	124.59	0.02	0.02	831	43968		
			13:34:56	13.92	20.32	124.53	0.08	0.08	831	9988		
			13:34:57	13.86	20.32	124.53	0.15	0.15	831	5482		
			13:34:58	13.93	20.31	124.57	0.16	0.16	831	5168		
			13:34:59	13.89	20.31	124.51	0.43	0.01	831	113738		
			13:35:00	13.93	20.31	124.53	0.72	0.27	831	3113		
			13:35:01	13.98	20.32	124.57	1.14	0.64	831	1292		
			13:35:02	13.92	20.32	124.56	0.13	0.13	831	6427		
			13:35:03	13.93	20.33	124.59	0.09	0.09	831	9023		
			13:35:04	13.98	20.33	124.61	0.02	0.02	831	45912		
			13:35:05	13.88	20.32	124.57	0.10	0.10	831	8377		
			13:35:06	14.00	20.32	124.57	0.28	0.28	831	2957		
			13:35:07	13.99	20.32	124.55	0.02	0.02	831	46949		
			13:35:08	14.47	20.32	124.55	0.04	0.04	831	20569		
			13:35:09	15.08	20.31	124.55	0.06	0.06	831	13232		
			13:35:10	17.40	20.31	124.63	0.11	0.11	831	7617		
			13:35:11	19.84	20.33	124.73	0.35	0.35	831	2389		
			13:35:12	20.08	20.33	124.72	0.46	0.04	831	21978		
			13:35:13	20.18	20.33	124.70	0.38	0.38	831	2166		
			13:35:14	20.22	20.33	124.76	0.44	0.02	831	40546		
			13:35:15	20.15	20.33	124.74	0.23	0.23	831	3674		
			13:35:16	20.22	20.33	124.76	0.19	0.19	831	4432		
			13:35:17	20.20	20.33	124.78	0.09	0.09	831	9192		
			13:35:18	20.18	20.33	124.61	0.02	0.02	831	43508		
			13:35:19	20.28	20.32	124.63	0.07	0.07	831	11230		
			13:35:20	20.20	20.33	124.70	0.03	0.03	831	25030		
			13:35:21	20.28	20.33	124.68	0.12	0.12	831	6762		
			13:35:22	20.23	20.33	124.65	0.39	0.39	831	2111		
			13:35:23	20.26	20.33	124.65	0.02	0.02	831	42835		



**TABLE D-10**

Profile PRO-07 on September 21, 2022 (1332-1341 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

314	Instantaneous Minimum Dilution in Profile
994	Minimum Average Dilution in Profile
994	Detected Plume Average Dilution
3571	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:35:24	20.24	20.33	124.68	0.02	0.02	831	45912		
			13:35:25	20.24	20.33	124.72	0.02	0.02	831	43057		
			13:35:26	20.22	20.33	124.70	0.02	0.02	831	38295		
			13:35:27	20.23	20.33	124.72	0.18	0.18	831	4586		
			13:35:28	20.22	20.33	124.74	0.09	0.09	831	9497		
			13:35:29	20.24	20.33	124.68	0.08	0.08	831	9988		
			13:35:30	20.23	20.33	124.75	0.15	0.15	831	5529		
			13:35:31	20.24	20.33	124.74	1.47	0.94	831	887		
			13:35:32	20.31	20.33	124.72	0.10	0.10	831	8702		
			13:35:33	20.24	20.33	124.78	0.18	0.18	831	4571		
			13:35:34	20.24	20.33	124.76	0.23	0.23	831	3587		
			13:35:35	20.18	20.33	124.74	0.41	0.41	831	2041		
			13:35:36	20.21	20.33	124.76	0.41	0.41	831	2046		
			13:35:37	20.19	20.33	124.74	0.28	0.28	831	2942		
			13:35:38	20.12	20.33	124.74	0.11	0.11	831	7264		
			13:35:39	20.15	20.33	124.74	0.19	0.19	831	4482	4001	Plume traces at 20 ft
			13:35:40	20.14	20.33	124.67	0.17	0.17	831	4973		
			13:35:41	20.06	20.33	124.70	0.30	0.30	831	2788		
			13:35:42	20.18	20.33	124.70	0.12	0.12	831	7189		
			13:35:43	20.06	20.33	124.68	0.26	0.26	831	3173		
			13:35:44	20.16	20.33	124.72	0.37	0.37	831	2241		
			13:35:45	20.16	20.33	124.70	0.18	0.18	831	4722		
			13:35:46	20.07	20.33	124.68	0.02	0.02	831	46425		
			13:35:47	20.20	20.32	124.61	0.07	0.07	831	12668		
			13:35:48	20.06	20.32	124.65	0.11	0.11	831	7687		
			13:35:49	20.19	20.32	124.57	0.07	0.07	831	12167		
			13:35:50	20.13	20.32	124.63	0.28	0.28	831	2972		
			13:35:51	20.16	20.32	124.63	0.25	0.25	831	3313		
			13:35:52	20.21	20.32	124.63	0.30	0.30	831	2802		
			13:35:53	20.12	20.32	124.63	0.22	0.22	831	3705		
			13:35:54	20.16	20.32	124.57	0.44	0.02	831	42993		
			13:35:55	20.21	20.32	124.61	0.20	0.20	831	4157		
			13:35:56	20.16	20.32	124.59	0.09	0.09	831	9172		
			13:35:57	20.19	20.31	124.59	0.07	0.07	831	12459		
			13:35:58	20.14	20.31	124.55	0.18	0.18	831	4711		
			13:35:59	20.19	20.31	124.56	0.05	0.05	831	15650		
			13:36:00	20.12	20.31	124.49	0.02	0.02	831	39952		

**TABLE D-10**

Profile PRO-07 on September 21, 2022 (1332-1341 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>314</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>994</b>	<b>Minimum Average Dilution in Profile</b>
<b>994</b>	<b>Detected Plume Average Dilution</b>
<b>3571</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:36:01	20.18	20.31	124.55	0.02	0.02	831	39571		
			13:36:02	20.14	20.31	124.53	0.02	0.02	831	43057		
			13:36:03	20.17	20.31	124.55	0.10	0.10	831	8236		
			13:36:04	20.21	20.31	124.53	0.27	0.27	831	3096		
			13:36:05	20.15	20.31	124.55	0.15	0.15	831	5570		
			13:36:06	20.19	20.31	124.57	0.06	0.06	831	14109		
			13:36:07	20.11	20.31	124.55	0.02	0.02	831	46425		
			13:36:08	20.17	20.31	124.51	0.10	0.10	831	8394		
			13:36:09	20.19	20.31	124.44	0.03	0.03	831	27426		
			13:36:10	20.17	20.30	124.42	0.02	0.02	831	45410		
			13:36:11	20.19	20.30	124.40	0.02	0.02	831	47486		
			13:36:12	20.16	20.30	124.38	0.60	0.16	831	5261		
			13:36:13	20.18	20.30	124.44	0.24	0.24	831	3438		
			13:36:14	20.18	20.30	124.44	0.02	0.02	831	46949		
			13:36:15	20.15	20.30	124.51	0.02	0.02	831	45410		
			13:36:16	20.18	20.31	124.44	0.19	0.19	831	4401		
			13:36:17	20.14	20.31	124.42	0.11	0.11	831	7374		
			13:36:18	20.16	20.30	124.42	0.08	0.08	831	10323		
			13:36:19	20.18	20.30	124.32	0.05	0.05	831	16620		
			13:36:20	20.18	20.30	124.34	0.02	0.02	831	43968		
			13:36:21	20.14	20.30	124.32	0.03	0.03	831	27886		
			13:36:22	20.13	20.30	124.36	0.14	0.14	831	6137		
			13:36:23	20.14	20.31	124.46	0.04	0.04	831	18929		
			13:36:24	20.14	20.31	124.51	0.14	0.14	831	5823		
			13:36:25	20.12	20.32	124.59	0.30	0.30	831	2784		
			13:36:26	20.15	20.32	124.61	0.08	0.08	831	10297		
			13:36:27	20.17	20.33	124.63	0.15	0.15	831	5424		
			13:36:28	20.13	20.33	124.61	0.02	0.02	831	48882		
			13:36:29	20.14	20.33	124.55	0.02	0.02	831	42615		
			13:36:30	20.12	20.32	124.53	0.09	0.09	831	9152		
			13:36:31	20.12	20.32	124.55	0.11	0.11	831	7393		
			13:36:32	20.13	20.32	124.53	0.06	0.06	831	13211		
			13:36:33	20.14	20.31	124.40	0.11	0.11	831	7603		
			13:36:34	20.14	20.31	124.46	0.20	0.20	831	4205		
			13:36:35	20.10	20.31	124.49	0.25	0.25	831	3305		
			13:36:36	20.11	20.31	124.34	0.03	0.03	831	27608		
			13:36:37	20.15	20.30	124.34	0.33	0.33	831	2536		

**TABLE D-10**

Profile PRO-07 on September 21, 2022 (1332-1341 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>314</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>994</b>	<b>Minimum Average Dilution in Profile</b>
<b>994</b>	<b>Detected Plume Average Dilution</b>
<b>3571</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:36:38	20.19	20.29	124.25	0.02	0.02	831	47216		
			13:36:39	20.17	20.29	124.25	0.02	0.02	831	41550		
			13:36:40	20.53	20.28	124.09	0.02	0.02	831	44439		
			13:36:41	20.69	20.28	124.15	0.02	0.02	831	45912		
			13:36:42	20.89	20.27	124.05	0.08	0.08	831	10297		
			13:36:43	22.26	20.27	123.99	0.02	0.02	831	43508		
			13:36:44	25.39	20.26	123.77	0.02	0.02	831	45912		
			13:36:45	25.98	20.26	123.82	0.02	0.02	831	49464		
			13:36:46	26.16	20.26	123.86	0.02	0.02	831	46685		
			13:36:47	26.15	20.26	123.92	0.02	0.02	831	43508		
			13:36:48	26.14	20.27	123.99	0.03	0.03	831	27793		
			13:36:49	26.15	20.27	123.88	0.02	0.02	831	46949		
			13:36:50	26.10	20.26	123.86	0.02	0.02	831	45912		
			13:36:51	26.14	20.26	123.82	0.02	0.02	831	47759		
			13:36:52	26.15	20.26	123.94	0.02	0.02	831	48882		
			13:36:53	26.08	20.27	123.94	0.02	0.02	831	42615		
			13:36:54	26.14	20.27	123.99	0.02	0.02	831	37602		
			13:36:55	26.11	20.27	123.99	0.02	0.02	831	42183		
			13:36:56	26.13	20.27	123.99	0.02	0.02	831	44439		
			13:36:57	26.13	20.27	123.95	0.02	0.02	831	41139		
			13:36:58	26.12	20.27	123.94	0.02	0.02	831	43508		
			13:36:59	26.18	20.27	123.94	0.02	0.02	831	48882		
			13:37:00	26.09	20.26	123.84	0.02	0.02	831	45912		
			13:37:01	26.22	20.26	123.82	0.02	0.02	831	45410		
			13:37:02	26.23	20.26	123.82	0.02	0.02	831	43968		
			13:37:03	26.22	20.26	123.84	0.02	0.02	831	42615		
			13:37:04	26.19	20.26	123.79	0.02	0.02	831	46425		
			13:37:05	26.20	20.26	123.79	0.02	0.02	831	45410		
			13:37:06	26.23	20.26	123.96	0.02	0.02	831	42398		
			13:37:07	26.22	20.27	124.01	0.02	0.02	831	47486		
			13:37:08	26.20	20.27	124.07	0.02	0.02	831	42183		
			13:37:09	26.22	20.28	124.13	0.02	0.02	831	47759		
			13:37:10	26.15	20.28	124.18	0.02	0.02	831	42615		
			13:37:11	26.17	20.28	124.09	0.16	0.16	831	5223		
			13:37:12	26.11	20.27	123.94	0.02	0.02	831	44439		
			13:37:13	26.08	20.27	124.18	0.02	0.02	831	46425		
			13:37:14	26.18	20.30	124.55	0.02	0.02	831	42183		

**TABLE D-10**

Profile PRO-07 on September 21, 2022 (1332-1341 hours PDT) located at North MZB (242 feet from Outfall Diffuser)

Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

314	Instantaneous Minimum Dilution in Profile
994	Minimum Average Dilution in Profile
994	Detected Plume Average Dilution
3571	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:37:15	26.14	20.32	124.59	0.02	0.02	831	36608		
			13:37:16	26.22	20.32	124.59	0.03	0.03	831	23948		
			13:37:17	26.16	20.32	124.54	0.02	0.02	831	45912		
			13:37:18	26.18	20.32	124.53	0.02	0.02	831	41970		
			13:37:19	26.21	20.32	124.63	0.02	0.02	831	45410		
			13:37:20	26.17	20.33	124.70	0.02	0.02	831	35665		
			13:37:21	26.21	20.33	124.68	0.02	0.02	831	46425		
			13:37:22	26.19	20.33	124.70	0.05	0.05	831	15981		
			13:37:23	26.19	20.33	124.74	0.17	0.17	831	4826		
			13:37:24	26.18	20.33	124.72	0.57	0.14	831	6080		
			13:37:25	26.18	20.33	124.80	0.60	0.16	831	5102		
			13:37:26	26.20	20.33	124.77	0.03	0.03	831	26132		
			13:37:27	26.18	20.33	124.80	0.14	0.14	831	5944		
			13:37:28	26.21	20.34	124.80	0.35	0.35	831	2350		
			13:37:29	26.19	20.34	124.80	0.30	0.30	831	2791	3875	Plume traces at 26 ft
			13:37:30	26.08	20.34	124.78	0.16	0.16	831	5120		
			13:37:31	26.13	20.34	124.74	0.26	0.26	831	3168		
			13:37:32	26.12	20.34	124.78	0.02	0.02	831	47216		
			13:37:33	26.13	20.34	124.76	0.25	0.25	831	3336		
			13:37:34	26.15	20.33	124.78	0.53	0.10	831	8274		
			13:37:35	26.06	20.33	124.76	0.26	0.26	831	3153		
			13:37:36	26.17	20.33	124.79	0.42	0.00	831	981759		
			13:37:37	26.10	20.33	124.76	0.22	0.22	831	3801		
			13:37:38	26.13	20.33	124.70	0.49	0.06	831	14373		
			13:37:39	26.18	20.33	124.76	0.02	0.02	831	37265		
			13:37:40	26.03	20.33	124.68	0.02	0.02	831	44439		
			13:37:41	26.17	20.32	124.61	0.38	0.38	831	2185		
			13:37:42	26.07	20.32	124.55	0.12	0.12	831	6817		
			13:37:43	26.10	20.32	124.55	0.09	0.09	831	9033		
			13:37:44	26.09	20.32	124.68	0.20	0.20	831	4259		
			13:37:45	26.07	20.32	124.67	0.09	0.09	831	9192		
			13:37:46	26.12	20.32	124.68	0.20	0.20	831	4157		
			13:37:47	26.07	20.32	124.72	0.41	0.41	831	2029		
			13:37:48	26.11	20.33	124.72	0.83	0.37	831	2266		
			13:37:49	26.08	20.33	124.78	0.21	0.21	831	4005		
			13:37:50	26.07	20.33	124.76	0.03	0.03	831	23948		
			13:37:51	26.10	20.33	124.80	0.02	0.02	831	43057		

**TABLE D-10**

Profile PRO-07 on September 21, 2022 (1332-1341 hours PDT) located at North MZB (242 feet from Outfall Diffuser)

Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

314	Instantaneous Minimum Dilution in Profile
994	Minimum Average Dilution in Profile
994	Detected Plume Average Dilution
3571	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:37:52	26.10	20.33	124.78	0.09	0.09	831	8888		
			13:37:53	26.00	20.33	124.76	0.04	0.04	831	20468		
			13:37:54	26.10	20.33	124.78	0.28	0.28	831	2968		
			13:37:55	25.98	20.33	124.75	0.76	0.31	831	2709		
			13:37:56	26.16	20.33	124.72	0.40	0.40	831	2079		
			13:37:57	26.58	20.33	124.74	0.39	0.39	831	2129		
			13:37:58	27.27	20.33	124.76	0.08	0.08	831	9964		
			13:37:59	29.92	20.33	124.78	0.53	0.10	831	8349		
			13:38:00	31.65	20.33	124.76	0.56	0.12	831	6879		
			13:38:01	31.83	20.33	124.76	0.63	0.19	831	4368		
			13:38:02	31.81	20.33	124.78	0.38	0.38	831	2186		
			13:38:03	31.90	20.33	124.78	0.37	0.37	831	2263		
			13:38:04	31.89	20.33	124.80	0.21	0.21	831	3925		
			13:38:05	31.87	20.33	124.81	0.38	0.38	831	2216	4052	Plume traces at 32 ft
			13:38:06	31.93	20.33	124.76	0.72	0.27	831	3065		
			13:38:07	31.87	20.33	124.80	0.88	0.41	831	2038		
			13:38:08	31.95	20.33	124.76	0.31	0.31	831	2648		
			13:38:09	31.92	20.33	124.78	0.52	0.09	831	9050		
			13:38:10	31.88	20.33	124.74	0.30	0.30	831	2788		
			13:38:11	31.92	20.33	124.80	0.25	0.25	831	3320		
			13:38:12	31.88	20.33	124.76	0.08	0.08	831	10297		
			13:38:13	31.98	20.33	124.80	0.38	0.38	831	2166		
			13:38:14	31.90	20.33	124.77	0.04	0.04	831	23541		
			13:38:15	31.94	20.33	124.76	0.17	0.17	831	4831		
			13:38:16	31.93	20.33	124.78	0.02	0.02	831	39571		
			13:38:17	31.88	20.33	124.76	0.23	0.23	831	3693		
			13:38:18	31.93	20.33	124.78	0.08	0.08	831	10573		
			13:38:19	31.89	20.33	124.74	0.32	0.32	831	2631		
			13:38:20	31.91	20.33	124.76	0.16	0.16	831	5341		
			13:38:21	31.99	20.33	124.78	0.27	0.27	831	3081		
			13:38:22	31.91	20.33	124.76	0.21	0.21	831	3946		
			13:38:23	31.98	20.33	124.73	0.05	0.05	831	15332		
			13:38:24	31.99	20.33	124.74	0.26	0.26	831	3145		
			13:38:25	31.91	20.33	124.76	0.20	0.20	831	4255		
			13:38:26	31.95	20.33	124.80	0.20	0.20	831	4178		
			13:38:27	31.83	20.33	124.76	0.14	0.14	831	5763		
			13:38:28	31.96	20.33	124.76	0.10	0.10	831	8269		

**TABLE D-10**

Profile PRO-07 on September 21, 2022 (1332-1341 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

314	Instantaneous Minimum Dilution in Profile
994	Minimum Average Dilution in Profile
994	Detected Plume Average Dilution
3571	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:38:29	31.92	20.33	124.74	0.25	0.25	831	3344		
			13:38:30	31.83	20.33	124.78	0.21	0.21	831	3993		
			13:38:31	31.95	20.33	124.76	0.48	0.05	831	15477		
			13:38:32	31.84	20.33	124.78	0.23	0.23	831	3559		
			13:38:33	31.90	20.33	124.77	0.13	0.13	831	6276		
			13:38:34	31.88	20.33	124.76	0.10	0.10	831	8131		
			13:38:35	31.90	20.33	124.78	0.09	0.09	831	9574		
			13:38:36	31.87	20.33	124.72	0.07	0.07	831	11838		
			13:38:37	31.87	20.33	124.70	0.02	0.02	831	34339		
			13:38:38	31.88	20.33	124.74	0.34	0.34	831	2437		
			13:38:39	31.86	20.33	124.78	0.04	0.04	831	22101		
			13:38:40	31.91	20.33	124.76	0.04	0.04	831	19553		
			13:38:41	31.86	20.33	124.76	0.11	0.11	831	7810		
			13:38:42	31.88	20.33	124.78	0.08	0.08	831	9811		
			13:38:43	31.91	20.33	124.77	0.03	0.03	831	32461		
			13:38:44	31.88	20.33	124.76	0.06	0.06	831	14579		
			13:38:45	31.92	20.33	124.76	0.21	0.21	831	4013		
			13:38:46	31.88	20.33	124.78	0.02	0.02	831	42183		
			13:38:47	31.89	20.33	124.80	0.02	0.02	831	48035		
			13:38:48	31.90	20.33	124.76	0.03	0.03	831	23948		
			13:38:49	31.88	20.33	124.78	0.12	0.12	831	6778		
			13:38:50	31.87	20.33	124.72	0.16	0.16	831	5130		
			13:38:51	31.89	20.33	124.74	0.05	0.05	831	15739		
			13:38:52	31.97	20.33	124.77	0.29	0.29	831	2836		
			13:38:53	31.92	20.33	124.78	0.28	0.28	831	3004		
			13:38:54	31.95	20.33	124.76	0.02	0.02	831	43968		
			13:38:55	31.91	20.33	124.76	0.26	0.26	831	3225		
			13:38:56	31.97	20.32	124.70	0.41	0.41	831	2051		
			13:38:57	31.91	20.32	124.74	0.37	0.37	831	2255	2662	Plume traces at 32 ft
			13:38:58	32.67	20.32	124.74	0.27	0.27	831	3116		
			13:38:59	35.97	20.32	124.72	0.47	0.05	831	18005		
			13:39:00	37.80	20.32	124.70	0.54	0.11	831	7780		
			13:39:01	38.01	20.32	124.68	0.29	0.29	831	2818		
			13:39:02	38.04	20.32	124.66	0.31	0.31	831	2650		
			13:39:03	38.05	20.32	124.61	0.32	0.32	831	2636		
			13:39:04	38.03	20.31	124.55	0.12	0.12	831	6685		
			13:39:05	38.06	20.31	124.59	0.03	0.03	831	26132		

**TABLE D-10**

Profile PRO-07 on September 21, 2022 (1332-1341 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

314	Instantaneous Minimum Dilution in Profile
994	Minimum Average Dilution in Profile
994	Detected Plume Average Dilution
3571	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:39:06	38.07	20.31	124.61	0.02	0.02	831	39571		Plume traces at 38 ft
			13:39:07	38.11	20.32	124.65	0.02	0.02	831	44919		
			13:39:08	38.04	20.32	124.63	0.02	0.02	831	43057		
			13:39:09	38.13	20.32	124.68	0.09	0.09	831	9618		
			13:39:10	38.04	20.32	124.68	0.05	0.05	831	17421		
			13:39:11	38.04	20.32	124.58	0.34	0.34	831	2441		
			13:39:12	38.00	20.32	124.63	0.16	0.16	831	5351		
			13:39:13	38.06	20.32	124.61	0.33	0.33	831	2518	4211	
			13:39:14	38.04	20.32	124.65	0.13	0.13	831	6533		
			13:39:15	38.02	20.32	124.68	0.02	0.02	831	43057		
			13:39:16	38.05	20.32	124.65	0.26	0.26	831	3137		
			13:39:17	38.03	20.32	124.63	0.79	0.33	831	2507		
			13:39:18	38.06	20.32	124.70	0.52	0.08	831	9870		
			13:39:19	38.01	20.32	124.74	0.62	0.18	831	4734		
			13:39:20	38.04	20.32	124.74	0.66	0.21	831	3867		
			13:39:21	38.10	20.32	124.75	0.27	0.27	831	3070	3193	
			13:39:22	38.09	20.32	124.68	0.89	0.42	831	1977		
			13:39:23	38.09	20.32	124.68	0.82	0.36	831	2315		
			13:39:24	38.09	20.32	124.61	0.11	0.11	831	7687		
			13:39:25	38.09	20.32	124.59	0.08	0.08	831	10627		
			13:39:26	38.12	20.31	124.59	0.04	0.04	831	23019		
			13:39:27	37.96	20.31	124.57	0.28	0.28	831	3007		
			13:39:28	37.99	20.31	124.59	0.47	0.04	831	19986		
			13:39:29	37.98	20.31	124.59	0.14	0.14	831	6009		
			13:39:30	37.89	20.31	124.55	0.55	0.11	831	7473		
			13:39:31	37.96	20.31	124.56	0.07	0.07	831	12745		
			13:39:32	37.90	20.31	124.55	0.92	0.44	831	1874		
			13:39:33	37.95	20.31	124.53	0.54	0.11	831	7534		
			13:39:34	37.96	20.31	124.51	0.14	0.14	831	6119		
			13:39:35	37.92	20.31	124.51	0.09	0.09	831	9327		
			13:39:36	38.09	20.31	124.51	0.27	0.27	831	3094		
			13:39:37	37.96	20.31	124.51	0.06	0.06	831	13046		
			13:39:38	38.01	20.31	124.49	0.07	0.07	831	11838		
			13:39:39	37.95	20.31	124.53	0.12	0.12	831	6896		
			13:39:40	37.94	20.31	124.46	0.05	0.05	831	15620		
			13:39:41	37.96	20.31	124.54	0.17	0.17	831	4857		
			13:39:42	37.97	20.31	124.55	0.10	0.10	831	8594		

**TABLE D-10**

Profile PRO-07 on September 21, 2022 (1332-1341 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>314</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>994</b>	<b>Minimum Average Dilution in Profile</b>
<b>994</b>	<b>Detected Plume Average Dilution</b>
<b>3571</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:39:43	37.98	20.31	124.53	0.04	0.04	831	23148		
			13:39:44	38.03	20.31	124.51	0.02	0.02	831	46425		
			13:39:45	38.04	20.31	124.51	0.02	0.02	831	48035		
			13:39:46	37.98	20.30	124.44	0.10	0.10	831	8293		
			13:39:47	38.00	20.30	124.44	0.17	0.17	831	4973		
			13:39:48	38.01	20.30	124.42	0.02	0.02	831	48596		
			13:39:49	38.00	20.30	124.49	0.10	0.10	831	8252		
			13:39:50	37.99	20.31	124.54	0.30	0.30	831	2770		
			13:39:51	38.00	20.31	124.49	0.17	0.17	831	4809		
			13:39:52	37.98	20.30	124.42	0.16	0.16	831	5210		
			13:39:53	37.96	20.30	124.36	0.02	0.02	831	48882		
			13:39:54	37.93	20.30	124.34	0.02	0.02	831	43057		
			13:39:55	37.97	20.30	124.38	0.08	0.08	831	10196		
			13:39:56	37.93	20.30	124.36	0.02	0.02	831	43508		
			13:39:57	38.01	20.30	124.34	0.02	0.02	831	40735		
			13:39:58	37.94	20.30	124.42	0.02	0.02	831	44919		
			13:39:59	37.97	20.30	124.37	0.03	0.03	831	27426		
			13:40:00	38.06	20.29	124.32	0.02	0.02	831	44439		
			13:40:01	37.93	20.29	124.34	0.18	0.18	831	4663		
			13:40:02	38.05	20.29	124.30	0.14	0.14	831	6035		
			13:40:03	37.94	20.29	124.26	0.09	0.09	831	9254		
			13:40:04	38.05	20.29	124.22	0.18	0.18	831	4576		
			13:40:05	38.04	20.29	124.15	0.04	0.04	831	18929		
			13:40:06	37.89	20.28	124.05	0.02	0.02	831	46425		
			13:40:07	38.06	20.27	124.03	0.19	0.19	831	4432		
			13:40:08	37.90	20.27	124.03	0.02	0.02	831	43968		
			13:40:09	38.10	20.27	123.92	0.02	0.02	831	43508		
			13:40:10	38.19	20.26	123.83	0.02	0.02	831	45410		
			13:40:11	39.98	20.26	123.94	0.02	0.02	831	44439		
			13:40:12	42.97	20.28	124.30	0.02	0.02	831	49464		
			13:40:13	43.36	20.29	124.21	0.02	0.02	831	50671		
			13:40:14	43.57	20.28	124.11	0.02	0.02	831	43508		
			13:40:15	43.47	20.28	124.11	0.02	0.02	831	45912		
			13:40:16	43.56	20.28	124.22	0.02	0.02	831	41759		
			13:40:17	43.58	20.28	124.15	0.02	0.02	831	45912		
			13:40:18	43.56	20.27	124.07	0.02	0.02	831	45912		
			13:40:19	43.63	20.27	124.03	0.02	0.02	831	46949		



**TABLE D-10**

Profile PRO-07 on September 21, 2022 (1332-1341 hours PDT) located at North MZB (242 feet from Outfall Diffuser)

Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>314</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>994</b>	<b>Minimum Average Dilution in Profile</b>
<b>994</b>	<b>Detected Plume Average Dilution</b>
<b>3571</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:40:20	43.56	20.27	124.03	0.02	0.02	831	44439		
			13:40:21	43.57	20.27	124.09	0.02	0.02	831	47759		
			13:40:22	43.54	20.27	124.05	0.02	0.02	831	45912		
			13:40:23	43.49	20.27	124.09	0.02	0.02	831	44439		
			13:40:24	43.54	20.28	124.24	0.08	0.08	831	10375		
			13:40:25	43.60	20.28	124.22	0.02	0.02	831	47759		
			13:40:26	43.65	20.28	124.20	0.02	0.02	831	50060		
			13:40:27	43.66	20.28	124.09	0.02	0.02	831	47759		
			13:40:28	43.66	20.27	124.09	0.02	0.02	831	43508		
			13:40:29	43.67	20.27	124.03	0.02	0.02	831	46949		
			13:40:30	43.52	20.27	124.03	0.03	0.03	831	24586		
			13:40:31	43.58	20.27	124.05	0.02	0.02	831	45912		
			13:40:32	43.54	20.27	124.01	0.02	0.02	831	46949		
			13:40:33	43.60	20.27	123.99	0.02	0.02	831	48882		
			13:40:34	43.47	20.27	124.07	0.08	0.08	831	10778		
			13:40:35	43.59	20.26	123.73	0.02	0.02	831	48035		
			13:40:36	43.53	20.25	123.86	0.02	0.02	831	47216		
			13:40:37	43.63	20.25	123.71	0.02	0.02	831	43968		
			13:40:38	43.67	20.25	123.75	0.02	0.02	831	47216		
			13:40:39	43.61	20.24	123.69	0.02	0.02	831	43508		
			13:40:40	43.56	20.25	123.73	0.02	0.02	831	44919		
			13:40:41	43.65	20.24	123.65	0.02	0.02	831	42615		
			13:40:42	43.53	20.25	123.73	0.02	0.02	831	43508		
			13:40:43	43.59	20.25	123.75	0.02	0.02	831	46425		
			13:40:44	43.55	20.25	123.77	0.02	0.02	831	44919		
			13:40:45	43.58	20.24	123.67	0.02	0.02	831	45912		
			13:40:46	43.61	20.24	123.71	0.02	0.02	831	47486		
			13:40:47	43.58	20.24	123.77	0.02	0.02	831	44439		
			13:40:48	43.64	20.24	123.73	0.02	0.02	831	43968		
			13:40:49	43.57	20.24	123.67	0.02	0.02	831	45410		
			13:40:50	43.58	20.25	123.71	0.02	0.02	831	45912		
			13:40:51	43.58	20.25	123.73	0.02	0.02	831	48882		
			13:40:52	43.55	20.25	123.73	0.02	0.02	831	45410		
			13:40:53	43.49	20.24	123.69	0.02	0.02	831	46949		
			13:40:54	43.58	20.24	123.67	0.03	0.03	831	27886		
			13:40:55	43.53	20.24	123.73	0.06	0.06	831	12884		
			13:40:56	43.54	20.24	123.69	0.03	0.03	831	28459		

**TABLE D-10**

Profile PRO-07 on September 21, 2022 (1332-1341 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>314</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>994</b>	<b>Minimum Average Dilution in Profile</b>
<b>994</b>	<b>Detected Plume Average Dilution</b>
<b>3571</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:40:57	43.54	20.24	123.69	0.02	0.02	831	47216		
			13:40:58	43.56	20.24	123.69	0.09	0.09	831	9348		
			13:40:59	43.55	20.24	123.71	0.02	0.02	831	35362		
			13:41:00	43.49	20.24	123.75	0.02	0.02	831	45912		
			13:41:01	43.55	20.25	123.77	0.02	0.02	831	49464		
			13:41:02	43.54	20.25	123.77	0.02	0.02	831	44919		
			13:41:03	43.56	20.25	123.77	0.02	0.02	831	46425		
			13:41:04	43.59	20.25	123.77	0.02	0.02	831	46425		
			13:41:05	43.54	20.25	123.82	0.02	0.02	831	45912		
			13:41:06	43.59	20.25	123.79	0.02	0.02	831	45410		
			13:41:07	43.50	20.25	123.79	0.02	0.02	831	47759		
			13:41:08	43.50	20.25	123.79	0.02	0.02	831	48882		
			13:41:09	43.52	20.26	123.84	0.02	0.02	831	42615		

**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

88	Instantaneous Minimum Dilution in Profile
123	Minimum Average Dilution in Profile
259	Detected Plume Average Dilution
2383	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-8 (South Mixing Zone Boundary - 242 ft from Diffuser mid-point)	47 ft	0.21 m/sec 167 deg. (mag.) Flood tide	13:53:44	2.38	20.26	124.40	4.86	3.98	874	220	138	Plume measurements near surface
			13:53:45	2.43	20.25	124.36	6.15	5.14	874	170		
			13:53:46	2.41	20.28	124.40	6.34	5.31	874	165		
			13:53:47	2.41	20.30	124.49	7.68	6.51	874	134		
			13:53:48	2.45	20.30	124.40	6.07	5.07	874	173		
			13:53:49	2.40	20.30	124.42	8.01	6.80	874	128		
			13:53:50	2.35	20.30	124.49	9.32	7.98	874	109		
			13:53:51	2.41	20.31	124.46	7.01	5.91	874	148		
			13:53:52	2.40	20.31	124.49	6.63	5.57	874	157		
			13:53:53	2.23	20.31	124.53	8.05	6.84	874	128		
			13:53:54	2.31	20.31	124.59	7.25	6.12	874	143		
			13:53:55	2.36	20.30	124.55	9.27	7.94	874	110		
			13:53:56	2.29	20.30	124.55	8.58	7.32	874	119		
			13:53:57	2.42	20.31	124.57	8.59	7.33	874	119		
			13:53:58	2.33	20.30	124.55	10.35	8.91	874	98		
			13:53:59	2.33	20.32	124.57	7.74	6.57	874	133		
			13:54:00	2.35	20.32	124.53	8.98	7.68	874	114		
			13:54:01	2.39	20.32	124.54	7.58	6.43	874	136		
			13:54:02	2.39	20.33	124.49	7.29	6.16	874	142		
			13:54:03	2.38	20.33	124.55	7.93	6.74	874	130		
			13:54:04	2.40	20.34	124.53	8.05	6.84	874	128		
			13:54:05	2.35	20.36	124.51	8.20	6.98	874	125		
			13:54:06	2.44	20.36	124.57	7.57	6.41	874	136		
13:54:07	2.37	20.38	124.65	7.45	6.30	874	139					
13:54:08	2.40	20.39	124.74	8.87	7.58	874	115					
13:54:09	2.38	20.38	124.72	9.32	7.98	874	109					
13:54:10	2.43	20.39	124.76	7.51	6.36	874	137					
13:54:11	2.34	20.39	124.75	8.81	7.52	874	116					
13:54:12	2.37	20.39	124.74	7.47	6.32	874	138					
13:54:13	2.41	20.39	124.72	9.76	8.38	874	104					
13:54:14	2.39	20.37	124.65	8.39	7.15	874	122					
13:54:15	2.35	20.36	124.70	7.86	6.68	874	131					
13:54:16	2.40	20.37	124.70	8.06	6.85	874	128					
13:54:17	2.39	20.40	124.78	3.99	3.20	874	273					
13:54:18	2.30	20.44	124.76	4.33	3.51	874	249					
13:54:19	2.44	20.47	124.85	9.02	7.72	874	113					
13:54:20	2.34	20.47	124.91	8.55	7.29	874	120					
13:54:21	2.41	20.48	124.94	8.80	7.52	874	116					
13:54:22	2.37	20.49	124.87	8.66	7.39	874	118					

**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

88	Instantaneous Minimum Dilution in Profile
123	Minimum Average Dilution in Profile
259	Detected Plume Average Dilution
2383	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:54:23	2.40	20.48	124.92	8.83	7.54	874	116		
			13:54:24	2.37	20.48	124.87	8.45	7.20	874	121		
			13:54:25	2.31	20.47	125.06	8.50	7.25	874	121		
			13:54:26	2.40	20.50	125.41	8.91	7.61	874	115		
			13:54:27	2.36	20.49	125.99	9.92	8.52	874	103		
			13:54:28	2.38	20.46	126.16	8.88	7.59	874	115	123	Plume measurements near surface
			13:54:29	2.37	20.46	125.89	8.50	7.25	874	121		
			13:54:30	2.38	20.49	125.47	9.58	8.22	874	106		
			13:54:31	2.43	20.53	125.51	8.35	7.11	874	123		
			13:54:32	2.42	20.53	125.61	7.90	6.71	874	130		
			13:54:33	2.43	20.49	126.14	8.30	7.07	874	124		
			13:54:34	2.29	20.44	126.57	8.88	7.59	874	115		
			13:54:35	2.33	20.39	126.48	8.50	7.25	874	121		
			13:54:36	2.37	20.41	126.06	9.56	8.20	874	107		
			13:54:37	2.23	20.41	126.02	8.83	7.55	874	116		
			13:54:38	2.28	20.41	125.93	7.99	6.79	874	129		
			13:54:39	2.26	20.41	126.27	8.29	7.06	874	124		
			13:54:40	2.34	20.39	126.69	8.42	7.18	874	122		
			13:54:41	2.35	20.36	127.02	8.90	7.61	874	115		
			13:54:42	2.25	20.34	126.92	8.26	7.04	874	124		
			13:54:43	2.36	20.34	126.79	9.56	8.20	874	107		
			13:54:44	2.33	20.34	126.83	9.73	8.35	874	105		
			13:54:45	2.30	20.34	126.90	8.40	7.16	874	122		
			13:54:46	2.32	20.34	126.47	10.38	8.93	874	98		
			13:54:47	2.31	20.34	126.33	7.81	6.63	874	132		
			13:54:48	2.35	20.33	125.85	9.56	8.20	874	107		
			13:54:49	2.38	20.33	126.06	9.73	8.35	874	105		
			13:54:50	2.32	20.33	126.16	8.50	7.25	874	121		
			13:54:51	2.36	20.33	126.14	8.88	7.59	874	115		
			13:54:52	2.29	20.33	126.26	5.10	4.20	874	208		
			13:54:53	2.32	20.33	126.87	3.67	2.91	874	300		
			13:54:54	2.34	20.33	127.21	8.83	7.55	874	116		
			13:54:55	2.32	20.33	127.31	7.99	6.79	874	129		
			13:54:56	2.47	20.33	127.46	8.29	7.06	874	124		
			13:54:57	2.32	20.33	127.41	8.42	7.18	874	122		
			13:54:58	2.34	20.33	127.42	8.90	7.61	874	115		
			13:54:59	2.35	20.34	127.10	8.26	7.04	874	124		
			13:55:00	2.37	20.34	127.31	7.55	6.40	874	137		
			13:55:01	2.38	20.33	127.38	8.22	7.00	874	125		

**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

88	Instantaneous Minimum Dilution in Profile
123	Minimum Average Dilution in Profile
259	Detected Plume Average Dilution
2383	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:55:02	2.40	20.33	127.63	7.99	6.79	874	129		
			13:55:03	2.37	20.33	127.86	8.90	7.61	874	115		
			13:55:04	2.41	20.32	127.92	7.81	6.63	874	132		
			13:55:05	2.38	20.32	128.07	7.99	6.79	874	129		
			13:55:06	2.40	20.32	128.09	8.29	7.06	874	124	123	Plume measurements near surface
			13:55:07	2.36	20.32	128.19	8.42	7.18	874	122		
			13:55:08	2.41	20.32	128.72	8.50	7.25	874	121		
			13:55:09	2.37	20.32	128.89	9.56	8.20	874	107		
			13:55:10	2.45	20.32	128.95	8.83	7.55	874	116		
			13:55:11	2.38	20.32	129.20	7.99	6.79	874	129		
			13:55:12	2.48	20.32	129.26	8.29	7.06	874	124		
			13:55:13	2.42	20.32	129.22	8.42	7.18	874	122		
			13:55:14	2.43	20.32	129.30	8.90	7.61	874	115		
			13:55:15	2.41	20.32	129.29	8.26	7.04	874	124		
			13:55:16	2.39	20.32	128.97	9.56	8.20	874	107		
			13:55:17	2.39	20.32	128.54	9.73	8.35	874	105		
			13:55:18	2.38	20.32	128.23	8.83	7.55	874	116		
			13:55:19	2.39	20.32	128.75	7.99	6.79	874	129		
			13:55:20	2.38	20.32	129.17	8.29	7.06	874	124		
			13:55:21	2.41	20.32	129.30	8.88	7.59	874	115		
			13:55:22	2.37	20.32	128.99	8.50	7.25	874	121		
			13:55:23	2.46	20.32	129.20	9.56	8.20	874	107		
			13:55:24	2.32	20.32	129.53	8.83	7.55	874	116		
			13:55:25	2.41	20.32	129.68	7.99	6.79	874	129		
			13:55:26	2.33	20.32	130.08	8.29	7.06	874	124		
			13:55:27	2.37	20.32	130.27	8.42	7.18	874	122		
			13:55:28	2.38	20.32	130.08	8.90	7.61	874	115		
			13:55:29	2.22	20.32	130.04	8.26	7.04	874	124		
			13:55:30	2.38	20.32	129.80	9.56	8.20	874	107		
			13:55:31	2.22	20.32	129.95	9.73	8.35	874	105		
			13:55:32	2.42	20.32	129.87	9.78	8.39	874	104		
			13:55:33	2.31	20.32	129.90	10.52	9.06	874	97		
			13:55:34	2.32	20.32	129.99	8.88	7.59	874	115		
			13:55:35	2.37	20.32	129.43	8.50	7.25	874	121		
			13:55:36	2.30	20.32	129.49	9.56	8.20	874	107		
			13:55:37	2.34	20.32	129.49	8.83	7.55	874	116		
			13:55:38	2.32	20.32	129.98	7.99	6.79	874	129		
			13:55:39	2.31	20.32	130.01	8.29	7.06	874	124		
			13:55:40	2.40	20.32	129.72	8.42	7.18	874	122		

**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

88	Instantaneous Minimum Dilution in Profile
123	Minimum Average Dilution in Profile
259	Detected Plume Average Dilution
2383	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:55:41	2.28	20.33	127.98	8.90	7.61	874	115		
			13:55:42	2.39	20.36	125.51	8.26	7.04	874	124		
			13:55:43	2.22	20.36	126.40	9.56	8.20	874	107		
			13:55:44	2.33	20.35	126.03	9.73	8.35	874	105		
			13:55:45	2.39	20.35	126.10	8.83	7.55	874	116		
			13:55:46	2.25	20.34	126.50	7.99	6.79	874	129		
			13:55:47	2.39	20.33	128.15	8.29	7.06	874	124		
			13:55:48	2.30	20.33	128.35	9.28	7.95	874	110		
			13:55:49	2.33	20.32	127.96	11.30	9.76	874	90		
			13:55:50	2.40	20.37	125.83	9.86	8.47	874	103		
			13:55:51	2.33	20.40	126.35	4.66	3.80	874	230		
			13:55:52	2.41	20.38	126.88	3.67	2.91	874	300		
			13:55:53	2.42	20.37	126.95	5.32	4.39	874	199		
			13:55:54	2.34	20.35	127.49	8.50	7.25	874	121		
			13:55:55	2.42	20.34	127.96	9.56	8.20	874	107		
			13:55:56	2.35	20.34	127.76	8.83	7.55	874	116		
			13:55:57	2.37	20.33	127.88	7.99	6.79	874	129		
			13:55:58	2.38	20.34	126.06	8.29	7.06	874	124		
			13:55:59	2.35	20.36	125.44	8.42	7.18	874	122		
			13:56:00	2.43	20.39	125.18	8.90	7.61	874	115		
			13:56:01	2.42	20.37	125.49	8.26	7.04	874	124		
			13:56:02	2.36	20.36	125.26	9.56	8.20	874	107		
			13:56:03	2.42	20.36	124.90	9.73	8.35	874	105		
			13:56:04	2.37	20.38	124.92	11.44	9.89	874	88		
			13:56:05	2.38	20.40	124.94	8.90	7.61	874	115		
			13:56:06	2.37	20.41	124.89	8.53	7.28	874	120		
			13:56:07	2.38	20.40	124.91	11.04	9.53	874	92		
			13:56:08	2.37	20.39	124.89	9.17	7.85	874	111		
			13:56:09	2.37	20.38	124.83	8.63	7.36	874	119		
			13:56:10	2.39	20.37	124.89	8.44	7.20	874	121		
			13:56:11	2.35	20.38	124.87	8.50	7.25	874	121		
			13:56:12	2.41	20.38	124.87	9.56	8.20	874	107		
			13:56:13	2.37	20.39	124.91	8.83	7.55	874	116		
			13:56:14	2.38	20.40	124.87	7.99	6.79	874	129		
			13:56:15	2.36	20.39	124.85	8.29	7.06	874	124		
			13:56:16	2.37	20.37	124.82	8.42	7.18	874	122		
			13:56:17	2.37	20.37	124.80	8.90	7.61	874	115		
			13:56:18	2.33	20.36	124.82	8.26	7.04	874	124		
			13:56:19	2.42	20.36	124.79	9.56	8.20	874	107		

**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

88	Instantaneous Minimum Dilution in Profile
123	Minimum Average Dilution in Profile
259	Detected Plume Average Dilution
2383	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:56:20	2.37	20.36	124.74	9.73	8.35	874	105		
			13:56:21	2.33	20.35	124.76	8.83	7.55	874	116		
			13:56:22	2.30	20.34	124.70	7.99	6.79	874	129		
			13:56:23	2.36	20.34	124.72	8.29	7.06	874	124		
			13:56:24	2.36	20.34	124.72	9.28	7.95	874	110	123	Plume measurements near surface
			13:56:25	2.40	20.35	124.78	8.29	7.06	874	124		
			13:56:26	2.38	20.35	124.76	10.10	8.68	874	101		
			13:56:27	2.34	20.35	124.74	7.99	6.79	874	129		
			13:56:28	2.41	20.35	124.78	9.78	8.39	874	104		
			13:56:29	2.35	20.36	124.79	7.87	6.68	874	131		
			13:56:30	2.30	20.37	124.78	8.88	7.59	874	115		
			13:56:31	2.33	20.36	124.74	8.50	7.25	874	121		
			13:56:32	2.33	20.34	124.68	9.56	8.20	874	107		
			13:56:33	2.35	20.32	124.68	8.83	7.55	874	116		
			13:56:34	2.34	20.32	124.70	7.99	6.79	874	129		
			13:56:35	2.31	20.32	124.68	8.29	7.06	874	124		
			13:56:36	2.30	20.32	124.70	8.42	7.18	874	122		
			13:56:37	2.35	20.32	124.68	8.90	7.61	874	115		
			13:56:38	2.32	20.33	124.70	8.26	7.04	874	124		
			13:56:39	2.32	20.33	124.72	9.56	8.20	874	107		
			13:56:40	2.39	20.33	124.72	9.73	8.35	874	105		
			13:56:41	2.36	20.33	124.74	8.50	7.25	874	121		
			13:56:42	2.37	20.34	124.78	9.56	8.20	874	107		
			13:56:43	2.39	20.39	124.85	8.83	7.55	874	116		
			13:56:44	2.40	20.42	124.87	7.99	6.79	874	129		
			13:56:45	2.37	20.41	124.87	8.29	7.06	874	124		
			13:56:46	2.37	20.41	124.89	8.42	7.18	874	122		
			13:56:47	2.38	20.41	124.89	8.90	7.61	874	115		
			13:56:48	2.38	20.41	124.91	8.26	7.04	874	124		
			13:56:49	2.38	20.40	124.88	9.56	8.20	874	107		
			13:56:50	2.36	20.41	124.87	9.73	8.35	874	105		
			13:56:51	2.31	20.41	124.85	8.83	7.55	874	116		
			13:56:52	2.38	20.40	124.82	7.99	6.79	874	129		
			13:56:53	2.37	20.40	124.87	8.29	7.06	874	124		
			13:56:54	2.47	20.39	124.80	9.28	7.95	874	110		
			13:56:55	2.87	20.39	124.80	4.36	3.53	874	247		
			13:56:56	4.41	20.37	124.70	2.88	2.21	874	396		
			13:56:57	7.35	20.33	126.19	2.03	1.44	874	606		
			13:56:58	7.84	20.32	125.67	3.76	2.99	874	292		

**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

88	Instantaneous Minimum Dilution in Profile
123	Minimum Average Dilution in Profile
259	Detected Plume Average Dilution
2383	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:56:59	7.99	20.32	125.71	3.26	2.55	874	343	622	Plume measurements at 8 ft
			13:57:00	8.06	20.31	125.13	1.54	1.00	874	871		
			13:57:01	8.16	20.31	124.99	1.68	1.13	874	774		
			13:57:02	8.11	20.31	124.95	1.33	0.82	874	1070		
			13:57:03	8.16	20.31	124.92	0.76	0.30	874	2908		
			13:57:04	8.03	20.31	124.96	0.71	0.26	874	3414		
			13:57:05	7.83	20.31	124.85	1.27	0.76	874	1153		
			13:57:06	7.86	20.31	124.74	1.23	0.73	874	1202		
			13:57:07	7.76	20.31	124.77	1.15	0.65	874	1343		
			13:57:08	7.81	20.31	124.76	0.95	0.47	874	1861		
			13:57:09	7.71	20.31	124.72	1.10	0.61	874	1435	1738	Plume measurements at 8 ft
			13:57:10	7.84	20.31	124.65	1.28	0.77	874	1130		
			13:57:11	7.78	20.31	124.70	0.89	0.42	874	2079		
			13:57:12	7.85	20.31	124.68	1.28	0.77	874	1131		
			13:57:13	7.79	20.31	124.68	0.81	0.34	874	2535		
			13:57:14	7.85	20.31	124.68	0.77	0.31	874	2777		
			13:57:15	7.78	20.32	124.65	0.35	0.35	874	2478		
			13:57:16	7.79	20.33	124.61	0.46	0.03	874	28119		
			13:57:17	7.80	20.34	124.59	0.37	0.37	874	2349		
			13:57:18	7.80	20.34	124.68	0.33	0.33	874	2618		
			13:57:19	7.78	20.34	124.57	0.22	0.22	874	3890		
			13:57:20	7.80	20.34	124.61	0.27	0.27	874	3245		
			13:57:21	7.81	20.34	124.63	0.17	0.17	874	5291		
			13:57:22	7.80	20.34	124.59	0.13	0.13	874	6601		
			13:57:23	7.81	20.34	124.59	0.44	0.02	874	56168		
			13:57:24	7.81	20.34	124.61	0.95	0.47	874	1853		
			13:57:25	7.87	20.33	124.68	0.42	0.42	874	2076		
			13:57:26	7.85	20.33	124.63	0.56	0.13	874	6981		
			13:57:27	7.85	20.34	124.61	0.16	0.16	874	5535		
			13:57:28	7.83	20.34	124.61	0.58	0.14	874	6247		
			13:57:29	7.80	20.34	124.61	0.28	0.28	874	3084		
			13:57:30	7.77	20.34	124.57	0.51	0.08	874	10891		
			13:57:31	7.82	20.34	124.59	0.35	0.35	874	2493		
			13:57:32	7.80	20.34	124.61	0.59	0.15	874	5675		
			13:57:33	7.80	20.34	124.61	0.21	0.21	874	4130		
			13:57:34	7.81	20.34	124.61	0.26	0.26	874	3323	4098	Plume measurements at 8 ft
			13:57:35	7.85	20.34	124.59	0.13	0.13	874	6812		
			13:57:36	7.77	20.34	124.58	0.29	0.29	874	3060		
			13:57:37	7.87	20.33	124.59	0.14	0.14	874	6142		



**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

88	Instantaneous Minimum Dilution in Profile
123	Minimum Average Dilution in Profile
259	Detected Plume Average Dilution
2383	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:57:38	7.72	20.33	124.57	0.23	0.23	874	3876		
			13:57:39	7.87	20.33	124.61	0.41	0.41	874	2141		
			13:57:40	7.79	20.33	124.61	0.26	0.26	874	3323		
			13:57:41	7.85	20.33	124.59	0.04	0.04	874	21111		
			13:57:42	7.94	20.33	124.57	0.51	0.08	874	11256		
			13:57:43	7.92	20.33	124.57	0.40	0.40	874	2185		
			13:57:44	8.17	20.33	124.59	0.67	0.22	874	3926		
			13:57:45	8.05	20.32	124.63	0.50	0.07	874	13210		
			13:57:46	8.15	20.32	124.57	0.23	0.23	874	3812		
			13:57:47	8.08	20.32	124.57	0.59	0.16	874	5633		
			13:57:48	8.05	20.32	124.65	0.35	0.35	874	2474		
			13:57:49	7.95	20.32	124.63	0.68	0.24	874	3705	3626	Plume measurements at 8 ft
			13:57:50	7.90	20.32	124.61	0.35	0.35	874	2509		
			13:57:51	7.93	20.32	124.68	0.59	0.15	874	5746		
			13:57:52	7.87	20.32	124.65	0.14	0.14	874	6203		
			13:57:53	7.95	20.32	124.70	0.29	0.29	874	3044		
			13:57:54	7.97	20.33	124.65	0.13	0.13	874	6641		
			13:57:55	7.90	20.35	124.65	0.25	0.25	874	3556		
			13:57:56	7.91	20.35	124.63	0.33	0.33	874	2644	4479	Plume measurements at 8 ft
			13:57:57	7.91	20.36	124.63	0.30	0.30	874	2929		
			13:57:58	7.91	20.36	124.68	0.14	0.14	874	6159		
			13:57:59	7.96	20.36	124.70	0.19	0.19	874	4651		
			13:58:00	7.88	20.36	124.68	0.15	0.15	874	5701		
			13:58:01	7.90	20.36	124.65	0.12	0.12	874	7345		
			13:58:02	7.89	20.36	124.65	0.10	0.10	874	8964		
			13:58:03	7.92	20.36	124.65	0.52	0.09	874	10185		
			13:58:04	7.97	20.36	124.66	0.57	0.13	874	6598		
			13:58:05	7.94	20.36	124.68	0.08	0.08	874	10911		
			13:58:06	7.95	20.35	124.65	0.31	0.31	874	2866		
			13:58:07	7.95	20.35	124.65	0.08	0.08	874	11049		
			13:58:08	7.91	20.35	124.65	0.33	0.33	874	2626		
			13:58:09	7.95	20.35	124.65	0.28	0.28	874	3177		
			13:58:10	7.90	20.35	124.61	0.34	0.34	874	2557	3561	Plume measurements at 8 ft
			13:58:11	7.95	20.35	124.63	0.56	0.12	874	7124		
			13:58:12	7.91	20.35	124.61	0.38	0.38	874	2321		
			13:58:13	7.94	20.35	124.63	0.07	0.07	874	12987		
			13:58:14	7.96	20.35	124.63	0.38	0.38	874	2276		
			13:58:15	7.94	20.35	124.63	0.47	0.04	874	20109		
			13:58:16	7.87	20.35	124.63	0.04	0.04	874	23000		

**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

88	Instantaneous Minimum Dilution in Profile
123	Minimum Average Dilution in Profile
259	Detected Plume Average Dilution
2383	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:58:17	7.93	20.35	124.63	0.41	0.41	874	2145		
			13:58:18	8.10	20.35	124.61	0.26	0.26	874	3326		
			13:58:19	8.33	20.35	124.65	0.09	0.09	874	9562		
			13:58:20	8.61	20.35	124.57	0.02	0.02	874	49659		
			13:58:21	8.67	20.34	124.61	0.11	0.11	874	7931		
			13:58:22	8.95	20.34	124.57	0.11	0.11	874	7888		
			13:58:23	11.04	20.34	124.63	0.05	0.05	874	16306		
			13:58:24	13.31	20.33	124.66	0.55	0.11	874	7602		
			13:58:25	13.57	20.33	124.61	0.65	0.21	874	4261		
			13:58:26	13.64	20.34	124.70	1.00	0.52	874	1675		
			13:58:27	13.60	20.34	124.74	0.88	0.41	874	2145		
			13:58:28	13.71	20.34	124.61	0.53	0.10	874	8950		
			13:58:29	13.68	20.34	124.63	0.33	0.33	874	2661		
			13:58:30	13.72	20.34	124.55	0.34	0.34	874	2560		
			13:58:31	13.70	20.33	124.63	0.19	0.19	874	4514		
			13:58:32	13.67	20.33	124.55	0.59	0.15	874	5946		
			13:58:33	13.69	20.33	124.50	0.23	0.23	874	3733		
			13:58:34	13.69	20.33	124.55	0.10	0.10	874	9057		
			13:58:35	13.67	20.33	124.53	2.17	1.57	874	558		
			13:58:36	13.67	20.33	124.55	0.62	0.18	874	4906		
			13:58:37	13.70	20.33	124.53	0.12	0.12	874	7106		
			13:58:38	13.70	20.34	124.51	0.24	0.24	874	3618		
			13:58:39	13.68	20.33	124.49	0.41	0.41	874	2110		
			13:58:40	13.69	20.33	124.51	0.47	0.04	874	22527		
			13:58:41	13.67	20.33	124.51	0.27	0.27	874	3280		
			13:58:42	13.72	20.33	124.49	0.20	0.20	874	4475		
			13:58:43	13.66	20.33	124.51	0.32	0.32	874	2750		
			13:58:44	13.66	20.33	124.53	0.07	0.07	874	12190		
			13:58:45	13.69	20.33	124.51	0.14	0.14	874	6243		
			13:58:46	13.68	20.33	124.51	0.09	0.09	874	9469		
			13:58:47	13.67	20.33	124.53	0.02	0.02	874	45052		
			13:58:48	13.71	20.33	124.44	0.24	0.24	874	3716		
			13:58:49	13.71	20.33	124.46	0.09	0.09	874	9853		
			13:58:50	13.66	20.33	124.51	0.37	0.37	874	2345		
			13:58:51	13.68	20.33	124.46	0.09	0.09	874	9943		
			13:58:52	13.68	20.32	124.48	0.18	0.18	874	4823		
			13:58:53	13.70	20.32	124.44	0.31	0.31	874	2808		
			13:58:54	13.74	20.32	124.46	0.27	0.27	874	3210		
			13:58:55	13.71	20.32	124.40	0.22	0.22	874	4061		

**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

88	Instantaneous Minimum Dilution in Profile
123	Minimum Average Dilution in Profile
259	Detected Plume Average Dilution
2383	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:58:56	13.68	20.32	124.44	0.15	0.15	874	5913		
			13:58:57	13.74	20.32	124.42	0.36	0.36	874	2432		
			13:58:58	13.73	20.32	124.42	0.02	0.02	874	47760		
			13:58:59	13.74	20.32	124.46	0.08	0.08	874	10480		
			13:59:00	13.69	20.33	124.51	0.15	0.15	874	5720		
			13:59:01	13.67	20.33	124.49	0.22	0.22	874	4002		
			13:59:02	13.69	20.33	124.46	0.27	0.27	874	3283		
			13:59:03	13.73	20.33	124.44	0.12	0.12	874	7502		
			13:59:04	13.71	20.33	124.42	0.03	0.03	874	26012		
			13:59:05	13.67	20.32	124.46	0.19	0.19	874	4724		
			13:59:06	13.69	20.32	124.44	0.17	0.17	874	5202		
			13:59:07	13.69	20.32	124.42	0.16	0.16	874	5613		
			13:59:08	13.72	20.32	124.44	0.14	0.14	874	6069		
			13:59:09	13.69	20.32	124.44	0.34	0.34	874	2550		
			13:59:10	13.69	20.32	124.53	0.29	0.29	874	2993		
			13:59:11	13.71	20.32	124.53	0.37	0.37	874	2348		
			13:59:12	13.69	20.33	124.54	0.50	0.07	874	13210		
			13:59:13	13.72	20.33	124.51	0.52	0.09	874	9916		
			13:59:14	13.64	20.33	124.57	0.27	0.27	874	3269		
			13:59:15	13.70	20.33	124.53	0.12	0.12	874	7170		
			13:59:16	13.68	20.33	124.59	1.08	0.59	874	1488		
			13:59:17	13.69	20.32	124.61	1.34	0.83	874	1055		
			13:59:18	13.70	20.33	124.53	0.87	0.41	874	2150		
			13:59:19	13.65	20.33	124.61	0.30	0.30	874	2904		
			13:59:20	13.75	20.33	124.57	1.09	0.60	874	1458		
			13:59:21	13.66	20.33	124.66	1.03	0.54	874	1612		
			13:59:22	13.72	20.32	124.76	1.09	0.60	874	1467	1399	Plume measurements at 13-14 ft
			13:59:23	13.71	20.32	124.68	0.98	0.50	874	1740		
			13:59:24	13.68	20.32	124.63	0.84	0.38	874	2327		
			13:59:25	13.74	20.32	124.74	1.50	0.96	874	907		
			13:59:26	13.69	20.31	124.80	0.96	0.48	874	1818		
			13:59:27	13.74	20.32	124.87	1.33	0.82	874	1071		
			13:59:28	13.67	20.32	124.87	1.73	1.17	874	744		
			13:59:29	13.71	20.32	124.87	1.41	0.89	874	984		
			13:59:30	13.71	20.32	124.80	1.10	0.61	874	1426		
			13:59:31	13.73	20.32	124.83	1.21	0.71	874	1236		
			13:59:32	13.74	20.32	124.78	1.07	0.58	874	1496		
			13:59:33	13.67	20.31	124.76	0.89	0.42	874	2078		
			13:59:34	13.73	20.32	124.68	1.25	0.74	874	1183		

**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

88	Instantaneous Minimum Dilution in Profile
123	Minimum Average Dilution in Profile
259	Detected Plume Average Dilution
2383	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:59:35	13.68	20.32	124.68	1.52	0.99	874	884		Plume measurements at 13-14 ft
			13:59:36	13.74	20.32	124.70	1.17	0.68	874	1293		
			13:59:37	13.70	20.32	124.76	1.51	0.98	874	896		
			13:59:38	13.75	20.32	124.94	2.30	1.69	874	519		
			13:59:39	13.76	20.32	125.08	2.37	1.75	874	500		
			13:59:40	13.71	20.32	125.18	2.51	1.87	874	467		
			13:59:41	13.82	20.32	125.24	2.61	1.96	874	445	463	
			13:59:42	13.73	20.32	125.28	2.55	1.91	874	457		
			13:59:43	13.74	20.32	125.28	3.02	2.33	874	375		
			13:59:44	13.74	20.31	125.30	2.47	1.84	874	476		
			13:59:45	13.75	20.31	125.09	1.40	0.88	874	999		
			13:59:46	13.74	20.31	124.99	0.71	0.26	874	3424		
			13:59:47	13.76	20.31	124.99	1.30	0.79	874	1109		
			13:59:48	13.72	20.31	125.09	2.07	1.48	874	592		
			13:59:49	13.70	20.31	125.30	2.82	2.15	874	407		
			13:59:50	13.62	20.32	125.30	3.08	2.39	874	366		
			13:59:51	13.67	20.32	125.35	3.12	2.42	874	362		
			13:59:52	13.63	20.32	125.28	3.02	2.33	874	375		
			13:59:53	13.72	20.32	125.35	2.60	1.96	874	446		
			13:59:54	13.58	20.32	125.28	2.68	2.03	874	432		
			13:59:55	13.58	20.32	125.22	2.70	2.04	874	428		
			13:59:56	13.64	20.31	125.20	2.47	1.84	874	476		
			13:59:57	13.67	20.31	125.11	3.13	2.43	874	360		
			13:59:58	13.64	20.31	125.26	3.66	2.91	874	301		
			13:59:59	13.65	20.31	125.20	2.81	2.14	874	408		
			14:00:00	13.64	20.31	125.28	3.06	2.37	874	369		
			14:00:01	13.67	20.31	125.43	3.37	2.64	874	331		
			14:00:02	13.62	20.31	125.57	3.37	2.65	874	330		
			14:00:03	13.67	20.31	125.75	3.74	2.98	874	293		
			14:00:04	13.60	20.32	125.61	3.71	2.95	874	296		
			14:00:05	13.67	20.32	125.45	3.37	2.64	874	331		
			14:00:06	13.61	20.33	125.35	2.60	1.96	874	447		
			14:00:07	13.76	20.32	125.24	2.48	1.85	874	473		
			14:00:08	13.68	20.32	125.45	2.96	2.27	874	384		
			14:00:09	13.67	20.32	125.38	3.02	2.33	874	375		
			14:00:10	13.67	20.32	125.12	2.25	1.64	874	532		
			14:00:11	13.70	20.32	125.07	2.12	1.52	874	575		
			14:00:12	13.71	20.31	125.01	2.39	1.76	874	495		
			14:00:13	13.68	20.32	125.30	2.95	2.27	874	385		

**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

88	Instantaneous Minimum Dilution in Profile
123	Minimum Average Dilution in Profile
259	Detected Plume Average Dilution
2383	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:00:14	13.75	20.32	125.32	3.22	2.51	874	348		
			14:00:15	13.65	20.32	125.11	3.18	2.48	874	353		
			14:00:16	13.71	20.32	125.18	2.65	1.99	874	438		
			14:00:17	13.64	20.32	125.22	3.15	2.45	874	357		
			14:00:18	13.69	20.32	125.41	3.69	2.93	874	298		
			14:00:19	13.65	20.32	125.62	3.81	3.04	874	287		
			14:00:20	13.67	20.32	125.70	4.19	3.38	874	259		
			14:00:21	13.67	20.32	125.80	4.15	3.34	874	261		
			14:00:22	13.68	20.32	125.78	4.18	3.37	874	259		
			14:00:23	13.70	20.32	125.74	3.44	2.71	874	323		
			14:00:24	13.66	20.32	125.83	3.73	2.96	874	295		
			14:00:25	13.70	20.32	125.95	4.13	3.32	874	263		
			14:00:26	13.68	20.32	125.99	4.49	3.65	874	239		
			14:00:27	13.69	20.32	125.91	4.32	3.49	874	250		
			14:00:28	13.67	20.32	125.87	4.09	3.29	874	266		
			14:00:29	13.72	20.32	125.76	4.06	3.26	874	268		
			14:00:30	13.68	20.32	125.91	3.89	3.11	874	281		
			14:00:31	13.70	20.32	126.02	4.69	3.83	874	228		
			14:00:32	13.67	20.32	126.28	5.63	4.67	874	187		
			14:00:33	13.62	20.32	126.43	6.22	5.20	874	168		
			14:00:34	13.69	20.31	126.47	5.94	4.95	874	176		
			14:00:35	13.60	20.31	126.50	6.13	5.12	874	171	338	Plume measurements at 13-14 ft
			14:00:36	13.75	20.31	126.52	5.93	4.94	874	177		
			14:00:37	13.66	20.31	126.58	6.25	5.23	874	167		
			14:00:38	13.69	20.31	126.66	6.84	5.76	874	152		
			14:00:39	13.71	20.31	126.62	5.44	4.51	874	194		
			14:00:40	13.64	20.31	126.43	4.62	3.77	874	232		
			14:00:41	13.69	20.31	126.26	3.56	2.81	874	311		
			14:00:42	13.66	20.31	126.25	4.55	3.70	874	236		
			14:00:43	13.72	20.31	126.26	4.64	3.79	874	231		
			14:00:44	13.67	20.31	126.43	5.57	4.62	874	189		
			14:00:45	13.72	20.31	126.52	6.61	5.55	874	157		
			14:00:46	13.68	20.31	126.64	6.40	5.36	874	163		
			14:00:47	13.70	20.31	126.66	6.99	5.89	874	148		
			14:00:48	13.66	20.31	126.66	7.14	6.02	874	145		
			14:00:49	13.72	20.31	126.28	7.00	5.90	874	148		
			14:00:50	13.74	20.30	125.59	3.79	3.02	874	289		
			14:00:51	13.67	20.30	125.28	2.16	1.56	874	559		
			14:00:52	13.71	20.30	125.09	2.68	2.03	874	431		

**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

88	Instantaneous Minimum Dilution in Profile
123	Minimum Average Dilution in Profile
259	Detected Plume Average Dilution
2383	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:00:53	13.65	20.30	125.24	3.47	2.74	874	319		
			14:00:54	13.72	20.30	125.49	3.09	2.40	874	364		
			14:00:55	13.69	20.30	125.45	3.65	2.89	874	302		
			14:00:56	13.73	20.30	125.48	4.09	3.29	874	266		
			14:00:57	13.72	20.30	125.63	4.89	4.01	874	218		
			14:00:58	13.72	20.30	125.66	5.29	4.37	874	200		
			14:00:59	13.70	20.30	125.63	3.93	3.15	874	278		
			14:01:00	13.70	20.30	125.55	3.31	2.59	874	337		
			14:01:01	13.70	20.30	125.49	3.04	2.35	874	372		
			14:01:02	13.69	20.30	125.45	2.70	2.04	874	427		
			14:01:03	13.67	20.30	125.39	3.11	2.41	874	362		
			14:01:04	13.74	20.30	125.39	2.58	1.94	874	451		
			14:01:05	13.67	20.30	125.10	2.31	1.70	874	516		
			14:01:06	13.67	20.30	124.92	1.93	1.36	874	644		
			14:01:07	13.69	20.30	124.96	2.04	1.45	874	602		
			14:01:08	13.68	20.30	124.86	1.93	1.35	874	647		
			14:01:09	13.73	20.30	124.94	1.96	1.38	874	634		
			14:01:10	13.67	20.30	125.24	1.87	1.29	874	675		
			14:01:11	13.68	20.31	125.18	1.39	0.87	874	1006		
			14:01:12	13.70	20.34	124.85	0.73	0.27	874	3210		
			14:01:13	13.65	20.34	124.80	0.74	0.28	874	3099		
			14:01:14	13.69	20.34	124.65	0.72	0.26	874	3302		
			14:01:15	13.69	20.34	124.73	0.87	0.40	874	2191		
			14:01:16	13.65	20.34	124.68	0.74	0.29	874	3020		
			14:01:17	13.61	20.33	124.65	1.15	0.65	874	1342		
			14:01:18	13.60	20.33	124.72	1.58	1.04	874	842		
			14:01:19	13.68	20.34	124.80	2.12	1.52	874	574		
			14:01:20	13.62	20.33	125.28	2.77	2.11	874	414		
			14:01:21	13.69	20.32	125.30	3.10	2.40	874	364		
			14:01:22	13.68	20.32	125.05	2.18	1.58	874	554		
			14:01:23	13.60	20.32	124.99	1.91	1.34	874	654		
			14:01:24	13.66	20.32	124.99	1.97	1.39	874	629		
			14:01:25	13.65	20.32	124.88	1.26	0.75	874	1159		
			14:01:26	13.59	20.32	125.13	1.78	1.22	874	717		
			14:01:27	13.60	20.31	125.20	2.65	2.00	874	437		
			14:01:28	13.54	20.31	125.32	2.89	2.21	874	395		
			14:01:29	13.58	20.31	125.43	3.74	2.98	874	294		
			14:01:30	13.56	20.31	125.41	3.76	3.00	874	292		
			14:01:31	13.64	20.31	125.41	3.58	2.84	874	308		

**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

88	Instantaneous Minimum Dilution in Profile
123	Minimum Average Dilution in Profile
259	Detected Plume Average Dilution
2383	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:01:32	13.70	20.31	125.39	3.32	2.60	874	336		
			14:01:33	13.65	20.31	125.43	2.99	2.31	874	379		
			14:01:34	14.10	20.31	125.32	3.13	2.43	874	360		
			14:01:35	14.35	20.31	125.28	3.28	2.56	874	341		
			14:01:36	14.47	20.31	125.32	3.54	2.80	874	312		
			14:01:37	16.02	20.31	125.59	3.61	2.86	874	306		
			14:01:38	18.53	20.31	126.16	4.44	3.60	874	243		
			14:01:39	19.03	20.30	126.02	4.90	4.02	874	218		
			14:01:40	19.16	20.30	125.91	5.07	4.17	874	210		
			14:01:41	19.18	20.30	125.91	4.35	3.52	874	248		
			14:01:42	19.14	20.30	125.95	4.66	3.81	874	230		
			14:01:43	19.20	20.30	125.97	4.48	3.64	874	240		
			14:01:44	19.24	20.30	125.99	4.85	3.97	874	220		
			14:01:45	19.17	20.30	126.04	4.62	3.76	874	232		
			14:01:46	19.15	20.30	126.16	5.90	4.91	874	178		
			14:01:47	19.14	20.30	125.95	5.55	4.61	874	190		
			14:01:48	19.20	20.30	125.74	4.24	3.42	874	255		
			14:01:49	19.19	20.30	125.61	3.85	3.08	874	284		
			14:01:50	19.17	20.30	125.61	3.96	3.17	874	276		
			14:01:51	19.19	20.30	125.61	3.56	2.82	874	310		
			14:01:52	19.14	20.30	125.60	3.51	2.77	874	315		
			14:01:53	19.23	20.30	125.64	3.54	2.80	874	312		
			14:01:54	19.18	20.30	125.74	3.76	2.99	874	292		
			14:01:55	19.22	20.30	125.76	4.07	3.27	874	267		
			14:01:56	19.19	20.30	125.76	4.14	3.34	874	262	248	Plume measurements at 19 ft
			14:01:57	19.15	20.30	125.78	3.94	3.15	874	277		
			14:01:58	19.19	20.30	125.76	3.75	2.99	874	292		
			14:01:59	19.09	20.30	125.72	3.75	2.99	874	293		
			14:02:00	19.12	20.30	125.74	4.18	3.38	874	259		
			14:02:01	19.08	20.30	125.76	4.03	3.24	874	270		
			14:02:02	19.10	20.30	125.78	3.97	3.19	874	274		
			14:02:03	19.14	20.30	125.85	4.09	3.29	874	265		
			14:02:04	19.11	20.30	125.87	4.11	3.31	874	264		
			14:02:05	19.18	20.30	125.78	4.44	3.60	874	242		
			14:02:06	19.13	20.30	125.70	3.85	3.07	874	284		
			14:02:07	19.16	20.30	125.66	3.62	2.87	874	304		
			14:02:08	19.15	20.30	125.49	3.43	2.70	874	324		
			14:02:09	19.15	20.30	125.49	3.62	2.87	874	305		
			14:02:10	19.17	20.30	125.43	3.29	2.57	874	340		

**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

88	Instantaneous Minimum Dilution in Profile
123	Minimum Average Dilution in Profile
259	Detected Plume Average Dilution
2383	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:02:11	19.16	20.30	125.38	3.18	2.47	874	354		
			14:02:12	19.16	20.30	125.39	3.10	2.41	874	363		
			14:02:13	19.13	20.30	125.70	3.93	3.15	874	278		
			14:02:14	19.16	20.30	125.72	3.39	2.66	874	328		
			14:02:15	19.17	20.30	125.80	3.57	2.83	874	309		
			14:02:16	19.12	20.30	125.87	3.78	3.01	874	290		
			14:02:17	19.17	20.30	125.89	3.88	3.10	874	282		
			14:02:18	19.14	20.30	125.89	4.14	3.33	874	262		
			14:02:19	19.17	20.30	126.02	4.99	4.10	874	213		
			14:02:20	19.15	20.30	126.14	5.39	4.46	874	196		
			14:02:21	19.12	20.30	126.29	6.14	5.13	874	170		
			14:02:22	19.11	20.30	126.30	5.87	4.89	874	179		
			14:02:23	19.10	20.30	126.39	5.70	4.73	874	185		
			14:02:24	19.16	20.30	126.38	5.14	4.23	874	206		
			14:02:25	19.14	20.30	126.43	5.12	4.21	874	207		
			14:02:26	19.17	20.30	126.52	5.59	4.64	874	189		
			14:02:27	19.11	20.30	126.58	5.33	4.41	874	198		
			14:02:28	19.13	20.30	126.52	5.73	4.77	874	183		
			14:02:29	19.17	20.30	126.45	5.62	4.67	874	187		
			14:02:30	19.16	20.30	126.38	5.65	4.70	874	186		
			14:02:31	19.12	20.30	126.28	5.74	4.77	874	183		
			14:02:32	19.12	20.30	126.23	5.72	4.75	874	184		
			14:02:33	19.19	20.30	126.23	5.54	4.60	874	190		
			14:02:34	19.13	20.30	126.04	5.65	4.69	874	186		
			14:02:35	19.18	20.30	126.06	5.94	4.95	874	177		
			14:02:36	19.14	20.30	126.12	5.51	4.57	874	191		
			14:02:37	19.16	20.30	126.10	5.37	4.44	874	197		
			14:02:38	19.11	20.30	126.06	5.99	4.99	874	175		
			14:02:39	19.20	20.30	126.07	5.74	4.77	874	183		
			14:02:40	19.12	20.30	126.08	5.73	4.76	874	183		
			14:02:41	19.16	20.30	126.04	5.76	4.79	874	183		
			14:02:42	19.17	20.30	125.97	5.56	4.61	874	190		
			14:02:43	19.17	20.30	125.95	5.04	4.14	874	211		
			14:02:44	19.14	20.30	126.06	5.19	4.28	874	204		
			14:02:45	19.11	20.30	126.18	5.02	4.13	874	212		
			14:02:46	19.17	20.30	126.18	5.39	4.46	874	196		
			14:02:47	19.13	20.30	126.14	5.96	4.97	874	176		
			14:02:48	19.16	20.30	126.18	5.53	4.59	874	191		
			14:02:49	19.13	20.30	126.11	6.03	5.03	874	174		



**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

88	Instantaneous Minimum Dilution in Profile
123	Minimum Average Dilution in Profile
259	Detected Plume Average Dilution
2383	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:02:50	19.10	20.29	125.83	5.46	4.52	874	193		
			14:02:51	19.16	20.29	125.70	4.65	3.79	874	231		
			14:02:52	19.14	20.29	125.52	4.43	3.59	874	243		
			14:02:53	19.13	20.29	125.66	4.68	3.82	874	229		
			14:02:54	19.14	20.29	125.91	4.47	3.64	874	240		
			14:02:55	19.17	20.30	126.08	4.34	3.52	874	249		
			14:02:56	19.16	20.30	126.14	5.08	4.18	874	209		
			14:02:57	19.03	20.30	126.33	5.54	4.59	874	190		
			14:02:58	19.15	20.30	126.34	5.55	4.60	874	190		
			14:02:59	19.07	20.30	126.47	6.51	5.46	874	160		
			14:03:00	19.19	20.30	126.54	6.49	5.44	874	161		
			14:03:01	19.09	20.30	126.60	6.56	5.50	874	159		
			14:03:02	19.18	20.30	126.56	6.52	5.47	874	160		
			14:03:03	19.11	20.30	126.18	6.82	5.74	874	152		
			14:03:04	19.18	20.29	125.95	6.70	5.63	874	155		
			14:03:05	19.41	20.29	125.70	5.34	4.42	874	198		
			14:03:06	19.73	20.29	125.83	3.91	3.13	874	279		
			14:03:07	22.36	20.29	125.97	5.39	4.46	874	196		
			14:03:08	24.62	20.29	125.61	5.51	4.57	874	191		
			14:03:09	25.14	20.29	125.87	4.78	3.91	874	224		
			14:03:10	25.22	20.29	125.97	4.72	3.86	874	226		
			14:03:11	25.17	20.29	126.04	5.70	4.74	874	184		
			14:03:12	25.25	20.29	126.08	5.54	4.59	874	190		
			14:03:13	25.21	20.29	126.08	5.41	4.47	874	195		
			14:03:14	25.22	20.29	126.08	5.47	4.53	874	193		
			14:03:15	25.16	20.29	126.08	5.43	4.50	874	194		
			14:03:16	25.24	20.29	126.12	6.11	5.10	874	171		
			14:03:17	25.19	20.29	126.11	4.91	4.02	874	217		
			14:03:18	25.14	20.29	126.16	5.12	4.21	874	207		
			14:03:19	25.27	20.29	126.16	5.85	4.87	874	180		
			14:03:20	25.15	20.29	126.18	6.05	5.05	874	173		
			14:03:21	25.38	20.29	126.21	5.93	4.94	874	177		
			14:03:22	25.22	20.29	126.18	6.00	5.00	874	175		
			14:03:23	25.33	20.29	126.12	5.78	4.80	874	182		
			14:03:24	25.24	20.29	126.14	5.65	4.69	874	186		
			14:03:25	25.28	20.29	125.76	5.80	4.82	874	181		
			14:03:26	25.29	20.29	125.19	3.16	2.46	874	355		
			14:03:27	25.19	20.29	125.20	1.98	1.39	874	627		
			14:03:28	25.40	20.29	125.73	3.80	3.03	874	288		

**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>88</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>123</b>	<b>Minimum Average Dilution in Profile</b>
<b>259</b>	<b>Detected Plume Average Dilution</b>
<b>2383</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:03:29	25.22	20.29	126.02	5.03	4.14	874	211		
			14:03:30	25.33	20.29	126.12	5.27	4.35	874	201		
			14:03:31	25.24	20.29	126.21	5.28	4.36	874	200		
			14:03:32	25.24	20.29	126.16	5.85	4.87	874	179		
			14:03:33	25.23	20.29	126.21	5.85	4.87	874	179		
			14:03:34	25.13	20.29	126.38	5.91	4.92	874	178		
			14:03:35	25.28	20.29	126.40	6.17	5.16	874	169		
			14:03:36	25.22	20.29	126.43	6.20	5.19	874	169	205	Plume measurements at 25 ft
			14:03:37	25.27	20.29	126.54	6.46	5.42	874	161		
			14:03:38	25.11	20.29	126.45	6.71	5.64	874	155		
			14:03:39	25.30	20.29	126.47	7.02	5.92	874	148		
			14:03:40	25.16	20.29	126.50	6.52	5.48	874	160		
			14:03:41	25.19	20.29	126.47	6.67	5.61	874	156		
			14:03:42	25.27	20.29	126.50	6.83	5.75	874	152		
			14:03:43	25.07	20.29	126.50	6.78	5.70	874	153		
			14:03:44	25.31	20.29	126.45	6.32	5.29	874	165		
			14:03:45	25.13	20.29	126.40	6.48	5.43	874	161		
			14:03:46	25.25	20.29	126.39	6.43	5.39	874	162		
			14:03:47	25.23	20.29	126.39	6.41	5.37	874	163		
			14:03:48	25.15	20.29	126.43	6.95	5.86	874	149		
			14:03:49	25.33	20.29	126.39	6.80	5.72	874	153		
			14:03:50	25.06	20.29	126.33	6.66	5.59	874	156		
			14:03:51	25.29	20.29	126.29	6.10	5.09	874	172		
			14:03:52	25.15	20.29	126.27	5.74	4.77	874	183		
			14:03:53	25.23	20.29	126.29	5.96	4.97	874	176		
			14:03:54	25.21	20.28	126.23	6.24	5.22	874	167		
			14:03:55	25.21	20.28	126.28	6.28	5.25	874	166		
			14:03:56	25.29	20.28	126.27	6.12	5.12	874	171		
			14:03:57	25.13	20.28	126.32	5.95	4.96	874	176		
			14:03:58	25.22	20.28	126.30	6.16	5.15	874	170		
			14:03:59	25.21	20.28	126.27	5.98	4.99	874	175		
			14:04:00	25.15	20.28	126.28	6.35	5.32	874	164		
			14:04:01	25.28	20.28	126.33	6.20	5.19	874	169		
			14:04:02	25.14	20.28	126.45	6.28	5.26	874	166		
			14:04:03	25.26	20.28	126.42	6.21	5.19	874	168		
			14:04:04	25.19	20.28	126.47	6.88	5.79	874	151		
			14:04:05	25.18	20.28	126.58	6.56	5.51	874	159		
			14:04:06	25.29	20.28	126.42	7.17	6.05	874	144		
			14:04:07	25.14	20.29	126.23	6.74	5.67	874	154		

**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

88	Instantaneous Minimum Dilution in Profile
123	Minimum Average Dilution in Profile
259	Detected Plume Average Dilution
2383	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:04:08	25.29	20.28	126.25	6.69	5.63	874	155		
			14:04:09	25.14	20.29	126.18	6.88	5.80	874	151		
			14:04:10	25.24	20.29	126.18	6.66	5.60	874	156		
			14:04:11	25.21	20.28	126.06	6.31	5.28	874	166		
			14:04:12	25.18	20.28	126.16	6.05	5.05	874	173		
			14:04:13	25.26	20.29	126.14	4.94	4.05	874	216		
			14:04:14	25.14	20.29	126.24	5.46	4.52	874	193		
			14:04:15	25.27	20.28	126.21	5.90	4.91	874	178		
			14:04:16	25.17	20.28	126.34	6.20	5.19	874	168		
			14:04:17	25.25	20.28	126.27	5.58	4.63	874	189		
			14:04:18	25.22	20.28	126.28	5.00	4.11	874	213		
			14:04:19	25.14	20.28	126.21	5.55	4.60	874	190		
			14:04:20	25.31	20.28	126.25	5.39	4.45	874	196		
			14:04:21	25.16	20.28	126.26	5.18	4.27	874	205		
			14:04:22	25.24	20.28	126.14	4.78	3.91	874	223		
			14:04:23	25.22	20.29	126.25	5.04	4.15	874	211		
			14:04:24	25.14	20.29	126.21	5.26	4.34	874	201		
			14:04:25	25.35	20.29	126.30	6.15	5.14	874	170		
			14:04:26	24.99	20.29	126.30	6.38	5.35	874	163		
			14:04:27	25.41	20.29	126.08	7.11	6.00	874	146		
			14:04:28	25.01	20.29	126.10	6.77	5.70	874	153		
			14:04:29	25.37	20.29	125.68	5.65	4.69	874	186		
			14:04:30	25.16	20.28	125.35	4.98	4.09	874	214		
			14:04:31	25.16	20.28	125.66	3.86	3.09	874	283		
			14:04:32	25.30	20.28	125.40	3.77	3.00	874	291		
			14:04:33	25.09	20.28	125.44	4.40	3.57	874	245		
			14:04:34	25.32	20.28	125.87	3.71	2.95	874	296		
			14:04:35	25.12	20.28	126.08	3.89	3.11	874	281		
			14:04:36	25.24	20.28	126.57	4.74	3.87	874	226		
			14:04:37	25.26	20.28	126.58	6.10	5.10	874	171		
			14:04:38	25.07	20.28	126.42	6.11	5.11	874	171		
			14:04:39	25.40	20.28	125.49	7.19	6.07	874	144		
			14:04:40	25.03	20.28	125.86	6.86	5.78	874	151		
			14:04:41	25.30	20.28	126.31	5.36	4.43	874	197		
			14:04:42	25.15	20.28	126.60	6.43	5.39	874	162		
			14:04:43	25.13	20.28	126.10	7.41	6.27	874	139		
			14:04:44	25.32	20.28	125.55	8.01	6.81	874	128		
			14:04:45	25.00	20.28	125.44	6.53	5.48	874	160		
			14:04:46	25.47	20.28	124.99	3.89	3.11	874	281		

**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

88	Instantaneous Minimum Dilution in Profile
123	Minimum Average Dilution in Profile
259	Detected Plume Average Dilution
2383	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:04:47	24.98	20.28	124.97	3.47	2.74	874	319		
			14:04:48	25.42	20.27	124.77	2.51	1.87	874	466		
			14:04:49	25.08	20.27	124.76	2.30	1.68	874	520		
			14:04:50	25.24	20.27	124.77	2.10	1.51	874	581		
			14:04:51	25.32	20.27	124.68	1.85	1.28	874	683		
			14:04:52	25.05	20.27	124.57	1.48	0.95	874	921		
			14:04:53	25.35	20.27	124.44	1.32	0.81	874	1083		
			14:04:54	25.06	20.27	124.42	1.15	0.65	874	1338		
			14:04:55	25.29	20.27	124.44	1.47	0.94	874	925		
			14:04:56	25.16	20.27	124.32	1.24	0.73	874	1190		
			14:04:57	25.13	20.27	124.32	1.55	1.02	874	861		
			14:04:58	25.31	20.27	124.63	1.73	1.18	874	743		
			14:04:59	25.06	20.27	124.77	1.67	1.12	874	780		
			14:05:00	25.30	20.27	125.30	2.50	1.86	874	469		
			14:05:01	25.08	20.27	125.24	3.11	2.41	874	362		
			14:05:02	25.25	20.27	125.12	4.40	3.57	874	245		
			14:05:03	25.22	20.27	124.76	5.13	4.23	874	207		
			14:05:04	25.13	20.27	124.99	4.12	3.32	874	263		
			14:05:05	25.27	20.27	125.06	2.10	1.51	874	580		
			14:05:06	25.14	20.27	124.68	1.83	1.26	874	694		
			14:05:07	25.25	20.27	124.76	2.45	1.82	874	480		
			14:05:08	25.20	20.27	125.27	4.18	3.37	874	259		
			14:05:09	25.27	20.27	125.61	4.33	3.51	874	249		
			14:05:10	25.18	20.27	125.63	4.54	3.69	874	237		
			14:05:11	25.32	20.27	125.60	4.41	3.58	874	244		
			14:05:12	25.25	20.27	125.64	4.29	3.47	874	252		
			14:05:13	25.16	20.27	125.64	5.02	4.12	874	212		
			14:05:14	25.34	20.27	125.72	5.14	4.23	874	206		
			14:05:15	25.08	20.27	125.74	5.05	4.15	874	210		
			14:05:16	25.26	20.27	125.72	5.03	4.14	874	211		
			14:05:17	25.34	20.27	125.85	5.11	4.20	874	208		
			14:05:18	25.13	20.27	125.85	5.30	4.38	874	200		
			14:05:19	25.40	20.27	125.55	5.42	4.48	874	195		
			14:05:20	25.15	20.27	125.52	5.24	4.32	874	202		
			14:05:21	25.23	20.27	125.41	4.85	3.98	874	220		
			14:05:22	25.35	20.27	125.71	4.87	3.99	874	219		
			14:05:23	25.11	20.27	125.63	4.48	3.64	874	240		
			14:05:24	25.39	20.27	125.71	4.39	3.56	874	246		
			14:05:25	25.12	20.27	125.68	4.63	3.77	874	232		

**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

88	Instantaneous Minimum Dilution in Profile
123	Minimum Average Dilution in Profile
259	Detected Plume Average Dilution
2383	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:05:26	25.29	20.27	125.70	5.20	4.29	874	204	204	Plume measurements at 25 ft
			14:05:27	25.27	20.27	125.74	5.63	4.67	874	187		
			14:05:28	25.12	20.27	125.90	5.68	4.72	874	185		
			14:05:29	25.33	20.27	125.99	6.16	5.15	874	170		
			14:05:30	25.21	20.27	125.95	6.71	5.64	874	155		
			14:05:31	25.21	20.27	126.04	6.32	5.29	874	165		
			14:05:32	25.26	20.27	125.97	6.07	5.07	874	172		
			14:05:33	25.22	20.27	125.99	7.23	6.11	874	143		
			14:05:34	25.23	20.28	126.08	5.88	4.90	874	178		
			14:05:35	25.16	20.28	126.16	5.79	4.81	874	182		
			14:05:36	25.19	20.28	126.04	6.03	5.03	874	174		
			14:05:37	25.05	20.27	126.05	6.33	5.31	874	165		
			14:05:38	25.20	20.27	126.06	6.13	5.12	874	171		
			14:05:39	25.24	20.28	126.18	6.11	5.10	874	171		
			14:05:40	25.23	20.28	126.34	6.23	5.21	874	168		
			14:05:41	25.24	20.28	126.35	6.50	5.46	874	160		
			14:05:42	25.23	20.28	126.33	6.50	5.45	874	160		
			14:05:43	25.60	20.28	126.32	6.25	5.23	874	167		
			14:05:44	26.04	20.28	126.25	6.31	5.28	874	165		
			14:05:45	28.94	20.27	126.04	6.11	5.10	874	171		
			14:05:46	30.63	20.27	125.93	5.50	4.56	874	192		
			14:05:47	30.85	20.27	125.85	5.44	4.50	874	194		
			14:05:48	30.90	20.27	125.99	5.51	4.57	874	191		
			14:05:49	30.91	20.27	125.80	5.99	4.99	874	175		
			14:05:50	30.98	20.28	125.76	5.86	4.88	874	179		
			14:05:51	30.86	20.28	125.91	5.88	4.90	874	178		
			14:05:52	30.97	20.28	125.89	6.04	5.04	874	173		
			14:05:53	30.91	20.28	126.08	6.15	5.14	874	170		
			14:05:54	30.89	20.28	126.35	6.71	5.64	874	155		
			14:05:55	30.93	20.28	126.28	7.26	6.14	874	142		
			14:05:56	30.89	20.28	126.11	6.36	5.33	874	164		
			14:05:57	30.97	20.28	125.91	5.28	4.36	874	201		
			14:05:58	30.82	20.28	125.99	4.72	3.86	874	226		
			14:05:59	31.02	20.28	125.70	4.64	3.78	874	231		
			14:06:00	30.87	20.28	125.78	5.10	4.20	874	208		
			14:06:01	30.95	20.28	125.91	5.19	4.28	874	204		
			14:06:02	30.88	20.28	126.38	6.09	5.08	874	172		
			14:06:03	30.82	20.28	126.02	4.96	4.07	874	215		
			14:06:04	30.96	20.28	126.16	4.45	3.61	874	242		

**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>88</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>123</b>	<b>Minimum Average Dilution in Profile</b>
<b>259</b>	<b>Detected Plume Average Dilution</b>
<b>2383</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:06:05	30.76	20.28	126.17	4.05	3.25	874	269		
			14:06:06	30.91	20.28	125.99	5.44	4.50	874	194		
			14:06:07	30.87	20.28	126.21	7.22	6.10	874	143		
			14:06:08	30.94	20.28	126.44	7.06	5.96	874	147	212	Plume measurements at 30-31 ft
			14:06:09	30.97	20.28	126.10	6.61	5.55	874	158		
			14:06:10	30.78	20.28	125.89	6.54	5.49	874	159		
			14:06:11	30.99	20.28	125.70	4.52	3.68	874	238		
			14:06:12	30.84	20.28	125.60	3.80	3.03	874	289		
			14:06:13	30.94	20.28	125.52	3.61	2.86	874	305		
			14:06:14	30.89	20.28	125.64	4.43	3.59	874	243		
			14:06:15	30.87	20.28	125.70	4.87	3.99	874	219		
			14:06:16	30.96	20.28	125.66	5.00	4.10	874	213		
			14:06:17	30.83	20.28	125.55	4.58	3.73	874	234		
			14:06:18	30.97	20.28	125.41	4.08	3.28	874	266		
			14:06:19	30.80	20.28	124.94	2.95	2.27	874	386		
			14:06:20	30.97	20.28	124.99	3.32	2.60	874	336		
			14:06:21	30.88	20.28	125.06	2.40	1.77	874	493		
			14:06:22	30.87	20.28	125.11	3.37	2.64	874	331		
			14:06:23	30.96	20.28	125.44	4.89	4.01	874	218		
			14:06:24	30.77	20.28	125.85	5.24	4.33	874	202		
			14:06:25	30.99	20.28	125.93	5.20	4.29	874	204		
			14:06:26	30.80	20.28	125.91	5.25	4.33	874	202		
			14:06:27	30.86	20.28	125.87	5.02	4.12	874	212		
			14:06:28	30.94	20.28	125.34	5.08	4.18	874	209		
			14:06:29	30.82	20.28	125.32	5.07	4.17	874	210		
			14:06:30	30.95	20.28	125.52	3.67	2.91	874	300		
			14:06:31	30.86	20.28	125.63	3.31	2.59	874	337		
			14:06:32	30.88	20.28	125.45	3.56	2.82	874	310		
			14:06:33	30.85	20.28	125.45	3.84	3.07	874	285		
			14:06:34	30.94	20.28	125.55	4.26	3.45	874	254		
			14:06:35	30.81	20.28	125.83	4.89	4.01	874	218		
			14:06:36	30.88	20.28	125.95	5.41	4.48	874	195		
			14:06:37	30.96	20.28	126.18	5.82	4.84	874	180		
			14:06:38	30.88	20.27	126.33	5.93	4.94	874	177		
			14:06:39	30.95	20.27	126.37	6.37	5.34	874	164		
			14:06:40	30.91	20.27	126.37	6.40	5.36	874	163		
			14:06:41	30.87	20.28	126.34	6.22	5.20	874	168		
			14:06:42	30.98	20.28	126.22	6.27	5.24	874	167		
			14:06:43	30.82	20.28	126.03	5.58	4.62	874	189		

**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

88	Instantaneous Minimum Dilution in Profile
123	Minimum Average Dilution in Profile
259	Detected Plume Average Dilution
2383	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:06:44	30.98	20.28	126.14	5.00	4.11	874	213		
			14:06:45	30.80	20.28	126.21	5.58	4.63	874	189		
			14:06:46	30.89	20.28	126.23	5.57	4.62	874	189		
			14:06:47	30.87	20.28	125.97	5.74	4.77	874	183		
			14:06:48	30.88	20.28	126.06	5.27	4.35	874	201		
			14:06:49	30.87	20.28	126.10	5.24	4.32	874	202		
			14:06:50	30.78	20.28	126.16	5.24	4.32	874	202		
			14:06:51	30.91	20.28	126.14	5.23	4.31	874	203		
			14:06:52	30.77	20.28	126.21	5.34	4.41	874	198		
			14:06:53	30.88	20.28	126.27	5.27	4.35	874	201		
			14:06:54	30.77	20.28	126.28	6.02	5.03	874	174		
			14:06:55	30.85	20.28	126.12	5.99	5.00	874	175		
			14:06:56	30.90	20.28	126.12	5.94	4.95	874	177		
			14:06:57	30.71	20.29	125.91	5.71	4.75	874	184		
			14:06:58	30.94	20.29	126.10	6.18	5.16	874	169		
			14:06:59	30.67	20.28	126.16	5.95	4.96	874	176		
			14:07:00	30.79	20.28	126.40	6.82	5.74	874	152		
			14:07:01	30.94	20.28	126.68	7.89	6.70	874	130		
			14:07:02	33.51	20.28	125.99	7.20	6.08	874	144		
			14:07:03	36.05	20.28	126.18	5.58	4.62	874	189		
			14:07:04	36.47	20.28	126.12	5.95	4.96	874	176		
			14:07:05	36.61	20.28	126.14	5.46	4.52	874	193		
			14:07:06	36.62	20.28	126.04	5.83	4.85	874	180		
			14:07:07	36.72	20.28	126.18	5.56	4.61	874	190		
			14:07:08	36.69	20.28	126.24	5.62	4.67	874	187		
			14:07:09	36.66	20.28	126.42	5.98	4.99	874	175		
			14:07:10	36.77	20.28	126.41	6.24	5.22	874	167		
			14:07:11	36.63	20.27	126.44	6.64	5.58	874	157		
			14:07:12	36.75	20.27	126.28	7.71	6.54	874	134		
			14:07:13	36.64	20.26	126.04	6.91	5.83	874	150		
			14:07:14	36.79	20.25	125.77	6.50	5.45	874	160		
			14:07:15	36.85	20.24	125.49	5.56	4.61	874	190		
			14:07:16	36.72	20.23	125.35	5.91	4.93	874	177	188	Plume measurements at 36 ft
			14:07:17	36.83	20.23	125.16	5.56	4.61	874	190		
			14:07:18	36.74	20.23	124.96	5.43	4.50	874	194		
			14:07:19	36.84	20.22	124.82	5.79	4.82	874	181		
			14:07:20	36.77	20.22	124.95	4.68	3.82	874	229		
			14:07:21	36.79	20.22	125.40	3.56	2.81	874	311		
			14:07:22	36.83	20.23	125.66	4.36	3.54	874	247		

**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

88	Instantaneous Minimum Dilution in Profile
123	Minimum Average Dilution in Profile
259	Detected Plume Average Dilution
2383	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:07:23	36.77	20.23	125.32	5.09	4.19	874	209		
			14:07:24	36.82	20.23	124.77	3.56	2.82	874	310		
			14:07:25	36.82	20.21	124.25	3.28	2.56	874	341		
			14:07:26	36.83	20.21	124.11	2.78	2.11	874	414		
			14:07:27	36.78	20.21	124.34	3.05	2.36	874	371		
			14:07:28	36.82	20.21	124.46	2.91	2.23	874	392		
			14:07:29	36.70	20.22	124.61	3.88	3.10	874	282		
			14:07:30	36.73	20.22	124.36	2.91	2.23	874	392		
			14:07:31	36.78	20.21	124.27	3.50	2.76	874	317		
			14:07:32	36.74	20.21	124.49	2.21	1.61	874	544		
			14:07:33	36.78	20.22	125.43	4.29	3.47	874	252		
			14:07:34	36.66	20.24	126.22	7.24	6.12	874	143		
			14:07:35	36.80	20.24	126.44	7.86	6.67	874	131		
			14:07:36	36.74	20.25	126.73	8.42	7.18	874	122		
			14:07:37	36.73	20.25	126.93	8.55	7.29	874	120		
			14:07:38	36.81	20.26	127.04	8.88	7.59	874	115		
			14:07:39	36.72	20.26	127.15	9.11	7.79	874	112		
			14:07:40	36.77	20.26	127.06	9.25	7.92	874	110		
			14:07:41	36.76	20.27	126.98	9.10	7.79	874	112		
			14:07:42	36.80	20.27	126.77	8.91	7.61	874	115		
			14:07:43	36.73	20.27	126.58	8.05	6.84	874	128		
			14:07:44	36.74	20.27	126.30	6.98	5.88	874	149		
			14:07:45	36.68	20.27	126.12	7.33	6.20	874	141		
			14:07:46	36.66	20.27	126.21	7.26	6.14	874	142		
			14:07:47	36.69	20.27	126.25	6.43	5.39	874	162		
			14:07:48	36.60	20.27	126.46	6.17	5.16	874	169		
			14:07:49	36.72	20.27	126.60	7.07	5.97	874	146		
			14:07:50	36.67	20.27	126.66	7.45	6.31	874	139		
			14:07:51	36.62	20.27	126.69	7.47	6.32	874	138		
			14:07:52	36.65	20.27	126.60	7.80	6.62	874	132		
			14:07:53	36.61	20.27	126.50	6.91	5.82	874	150		
			14:07:54	36.71	20.26	126.47	7.13	6.02	874	145		
			14:07:55	36.66	20.26	126.81	8.89	7.60	874	115		
			14:07:56	36.69	20.27	126.90	9.00	7.69	874	114		
			14:07:57	36.66	20.27	126.99	9.06	7.75	874	113		
			14:07:58	36.65	20.27	127.06	8.75	7.47	874	117		
			14:07:59	36.67	20.27	126.92	8.62	7.35	874	119		
			14:08:00	36.67	20.27	126.94	7.99	6.79	874	129		
			14:08:01	36.71	20.27	126.93	7.86	6.68	874	131		



**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

88	Instantaneous Minimum Dilution in Profile
123	Minimum Average Dilution in Profile
259	Detected Plume Average Dilution
2383	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:08:02	36.59	20.27	126.81	7.56	6.40	874	136		
			14:08:03	36.69	20.27	126.75	7.11	6.00	874	146		
			14:08:04	36.60	20.27	126.39	6.00	5.01	874	175		
			14:08:05	36.62	20.26	126.23	6.63	5.57	874	157		
			14:08:06	36.65	20.26	126.23	7.64	6.48	874	135		
			14:08:07	36.60	20.26	126.45	7.40	6.26	874	140		
			14:08:08	36.60	20.26	126.66	8.08	6.88	874	127		
			14:08:09	36.65	20.26	126.50	9.05	7.74	874	113		
			14:08:10	36.62	20.26	126.27	8.04	6.84	874	128		
			14:08:11	36.61	20.26	126.04	6.81	5.73	874	153		
			14:08:12	36.63	20.26	125.76	5.78	4.80	874	182		
			14:08:13	36.61	20.26	125.51	4.63	3.78	874	231		
			14:08:14	36.64	20.25	125.30	4.47	3.63	874	240		
			14:08:15	36.56	20.25	125.03	4.12	3.32	874	263		
			14:08:16	36.65	20.24	124.90	3.15	2.45	874	357		
			14:08:17	36.56	20.24	124.85	1.97	1.39	874	628		
			14:08:18	36.63	20.24	124.87	1.78	1.22	874	717		
			14:08:19	36.63	20.24	124.85	2.69	2.03	874	430		
			14:08:20	36.56	20.24	125.34	3.08	2.39	874	366		
			14:08:21	36.66	20.25	125.70	4.48	3.64	874	240		
			14:08:22	36.57	20.25	125.42	4.16	3.36	874	260		
			14:08:23	36.61	20.25	124.91	2.51	1.88	874	466		
			14:08:24	36.51	20.24	124.57	2.05	1.46	874	599		
			14:08:25	36.59	20.24	125.10	2.69	2.04	874	429	307	Plume measurements at 36 ft
			14:08:26	36.59	20.25	125.93	3.57	2.82	874	310		
			14:08:27	36.56	20.26	126.42	6.70	5.63	874	155		
			14:08:28	36.68	20.27	126.69	8.01	6.81	874	128		
			14:08:29	36.61	20.27	126.79	7.97	6.77	874	129		
			14:08:30	36.74	20.27	126.67	8.63	7.36	874	119		
			14:08:31	37.17	20.26	126.95	7.27	6.14	874	142		
			14:08:32	37.55	20.26	126.71	7.74	6.56	874	133		
			14:08:33	37.75	20.26	126.56	8.42	7.18	874	122		
			14:08:34	38.97	20.25	126.11	6.84	5.76	874	152		
			14:08:35	41.88	20.25	125.30	5.52	4.57	874	191		
			14:08:36	42.48	20.23	125.20	6.27	5.25	874	167		
			14:08:37	42.59	20.24	125.36	5.69	4.73	874	185		
			14:08:38	42.60	20.23	124.84	4.75	3.88	874	225		
			14:08:39	42.61	20.23	124.59	4.16	3.35	874	261		
			14:08:40	42.70	20.23	124.77	2.54	1.90	874	461		

**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

88	Instantaneous Minimum Dilution in Profile
123	Minimum Average Dilution in Profile
259	Detected Plume Average Dilution
2383	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:08:41	42.60	20.23	125.18	2.09	1.49	874	585		
			14:08:42	42.73	20.24	125.07	3.24	2.53	874	346		
			14:08:43	42.61	20.23	124.94	3.28	2.57	874	341		
			14:08:44	42.65	20.23	124.87	3.74	2.98	874	293		
			14:08:45	42.58	20.23	124.95	3.31	2.59	874	338		
			14:08:46	42.61	20.23	124.70	2.63	1.98	874	441		
			14:08:47	42.59	20.23	124.55	2.67	2.01	874	434		
			14:08:48	42.61	20.22	124.49	2.86	2.19	874	399		
			14:08:49	42.55	20.22	124.32	2.75	2.09	874	418		
			14:08:50	42.57	20.22	124.34	2.69	2.03	874	430		
			14:08:51	42.52	20.22	124.49	2.71	2.05	874	427		
			14:08:52	42.58	20.22	124.32	2.93	2.25	874	388		
			14:08:53	42.55	20.22	124.24	3.31	2.59	874	337		
			14:08:54	42.55	20.22	124.33	3.44	2.71	874	323		
			14:08:55	42.62	20.23	124.87	3.38	2.65	874	329		
			14:08:56	42.57	20.23	125.24	3.84	3.07	874	285		
			14:08:57	42.61	20.24	125.41	4.56	3.72	874	235		
			14:08:58	42.59	20.24	125.47	4.30	3.48	874	251		
			14:08:59	42.61	20.24	125.37	4.76	3.89	874	224		
			14:09:00	42.56	20.24	125.35	4.86	3.99	874	219		
			14:09:01	42.62	20.24	125.41	4.58	3.73	874	234		
			14:09:02	42.59	20.24	125.41	4.40	3.57	874	245		
			14:09:03	42.61	20.24	125.26	4.87	3.99	874	219		
			14:09:04	42.60	20.24	125.11	4.40	3.57	874	245		
			14:09:05	42.61	20.24	125.03	4.12	3.32	874	263		
			14:09:06	42.58	20.24	125.01	3.87	3.10	874	282		
			14:09:07	42.58	20.23	124.99	4.03	3.24	874	270		
			14:09:08	42.52	20.24	124.99	3.54	2.79	874	313		
			14:09:09	42.63	20.23	124.88	4.28	3.46	874	253		
			14:09:10	42.57	20.23	124.57	3.52	2.78	874	314		
			14:09:11	42.57	20.22	124.53	3.19	2.48	874	352		
			14:09:12	42.55	20.22	124.42	3.18	2.47	874	354		
			14:09:13	42.60	20.22	124.40	3.12	2.42	874	360		
			14:09:14	42.57	20.22	124.42	3.30	2.59	874	338		
			14:09:15	42.65	20.23	124.57	3.71	2.95	874	296		
			14:09:16	42.59	20.23	124.59	3.94	3.16	874	277	334	Plume measurements at 43 ft
			14:09:17	42.62	20.23	124.61	3.40	2.67	874	327		
			14:09:18	42.66	20.23	124.57	3.90	3.12	874	280		
			14:09:19	42.59	20.23	124.68	3.36	2.63	874	332		

**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

88	Instantaneous Minimum Dilution in Profile
123	Minimum Average Dilution in Profile
259	Detected Plume Average Dilution
2383	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:09:20	42.64	20.23	124.63	3.41	2.68	874	326		
			14:09:21	42.61	20.23	124.78	3.10	2.41	874	363		
			14:09:22	42.64	20.23	124.78	2.83	2.16	874	405		
			14:09:23	42.63	20.23	124.89	2.61	1.96	874	445		
			14:09:24	42.64	20.23	124.99	3.07	2.37	874	368		
			14:09:25	42.64	20.23	125.01	2.84	2.17	874	402		
			14:09:26	42.66	20.23	124.97	3.04	2.35	874	372		
			14:09:27	42.60	20.23	124.99	3.01	2.32	874	376		
			14:09:28	42.62	20.23	124.99	3.18	2.47	874	354		
			14:09:29	42.66	20.23	125.09	3.66	2.91	874	300		
			14:09:30	42.58	20.24	125.07	3.25	2.54	874	345		
			14:09:31	42.64	20.23	124.82	3.32	2.60	874	336		
			14:09:32	42.59	20.23	124.81	3.44	2.71	874	322		
			14:09:33	42.61	20.23	124.88	3.77	3.01	874	291		
			14:09:34	42.63	20.23	124.80	4.45	3.62	874	242		
			14:09:35	42.61	20.23	124.80	4.09	3.29	874	266		
			14:09:36	42.64	20.23	124.74	4.26	3.44	874	254		
			14:09:37	42.59	20.23	124.63	4.30	3.48	874	251		
			14:09:38	42.62	20.23	124.61	4.49	3.65	874	239		
			14:09:39	42.64	20.23	124.61	3.55	2.81	874	311		
			14:09:40	42.62	20.23	124.55	3.10	2.40	874	364		
			14:09:41	42.62	20.23	124.55	2.61	1.97	874	445		
			14:09:42	42.63	20.23	124.58	2.95	2.27	874	385		
			14:09:43	42.63	20.23	124.46	2.79	2.12	874	412		
			14:09:44	42.64	20.23	124.51	2.50	1.87	874	468		
			14:09:45	42.60	20.23	124.40	2.66	2.01	874	435		
			14:09:46	42.62	20.23	124.38	2.39	1.77	874	495		
			14:09:47	42.62	20.23	124.38	2.27	1.66	874	526		
			14:09:48	42.61	20.23	124.40	2.21	1.60	874	546		
			14:09:49	42.61	20.23	124.23	1.95	1.37	874	639		
			14:09:50	42.58	20.22	124.13	2.02	1.43	874	611		
			14:09:51	42.61	20.22	124.18	2.81	2.14	874	408		
			14:09:52	42.57	20.21	124.09	2.42	1.79	874	488		
			14:09:53	42.56	20.21	124.07	1.52	0.98	874	887		
			14:09:54	42.63	20.21	123.99	2.00	1.42	874	618		
			14:09:55	42.68	20.20	123.82	1.25	0.75	874	1171		
			14:09:56	42.73	20.18	123.60	1.25	0.74	874	1182		
			14:09:57	42.73	20.18	123.57	1.09	0.60	874	1461		
			14:09:58	42.66	20.17	123.54	1.69	1.13	874	771		

**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

88	Instantaneous Minimum Dilution in Profile
123	Minimum Average Dilution in Profile
259	Detected Plume Average Dilution
2383	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:09:59	42.78	20.17	123.46	1.50	0.97	874	899		
			14:10:00	42.62	20.17	123.51	0.25	0.25	874	3521		
			14:10:01	41.24	20.17	123.48	0.78	0.32	874	2693		
			14:10:02	40.03	20.17	123.46	0.79	0.33	874	2670		
			14:10:03	38.14	20.18	123.54	0.94	0.46	874	1896		
			14:10:04	36.44	20.19	123.56	0.63	0.19	874	4605		
			14:10:05	35.11	20.19	123.65	0.46	0.03	874	25143		
			14:10:06	33.44	20.20	123.84	0.48	0.05	874	16117		
			14:10:07	31.56	20.20	123.88	0.41	0.41	874	2113		
			14:10:08	29.59	20.20	123.94	1.09	0.60	874	1454		
			14:10:09	27.61	20.21	124.96	1.86	1.29	874	678		
			14:10:10	25.44	20.22	124.73	3.54	2.80	874	313		
			14:10:11	23.50	20.23	125.60	5.19	4.28	874	204		
			14:10:12	21.80	20.25	125.08	4.94	4.05	874	216		
			14:10:13	20.08	20.25	125.18	4.05	3.25	874	269		
			14:10:14	18.18	20.25	124.75	2.72	2.07	874	423		
			14:10:15	16.35	20.25	124.46	1.04	0.56	874	1573		
			14:10:16	14.17	20.25	124.15	1.19	0.69	874	1272		
			14:10:17	12.34	20.25	124.01	0.37	0.37	874	2389		
			14:10:18	10.47	20.25	123.96	0.24	0.24	874	3674		
			14:10:19	8.78	20.25	123.84	0.22	0.22	874	3975		
			14:10:20	7.06	20.25	123.83	0.33	0.33	874	2688		
			14:10:21	5.06	20.24	123.88	0.12	0.12	874	7071		
			14:10:22	3.42	20.26	124.15	0.15	0.15	874	5974		
			14:10:23	2.93	20.33	124.46	0.27	0.27	874	3280		
			14:10:24	2.80	20.37	124.49	0.16	0.16	874	5316		
			14:10:25	2.39	20.36	124.46	0.32	0.32	874	2770		
			14:10:26	2.25	20.36	124.40	0.06	0.06	874	15862		
			14:10:27	2.38	20.35	124.42	0.08	0.08	874	10581		
			14:10:28	2.36	20.34	124.44	0.87	0.40	874	2188		
			14:10:29	2.39	20.33	124.46	0.35	0.35	874	2517		
			14:10:30	2.37	20.33	124.42	0.59	0.15	874	5899		
			14:10:31	2.33	20.33	124.42	0.24	0.24	874	3696		
			14:10:32	2.15	20.33	124.40	0.29	0.29	874	2976		
			14:10:33	2.30	20.33	124.37	0.02	0.02	874	49943		
			14:10:34	2.23	20.32	124.31	0.24	0.24	874	3654		
			14:10:35	2.26	20.33	124.29	0.21	0.21	874	4125		
			14:10:36	2.21	20.33	124.29	0.20	0.20	874	4403	27508	Plume measurements repeated at surface
			14:10:37	2.27	20.33	124.32	0.02	0.02	874	50230		showed plume no longer present in

**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

88	Instantaneous Minimum Dilution in Profile
123	Minimum Average Dilution in Profile
259	Detected Plume Average Dilution
2383	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:10:38	2.24	20.34	124.32	0.23	0.23	874	3850		surface waters
			14:10:39	2.30	20.34	124.32	0.05	0.05	874	19000		
			14:10:40	2.29	20.33	124.30	0.02	0.02	874	47760		
			14:10:41	2.28	20.33	124.25	0.02	0.02	874	46243		
			14:10:42	2.29	20.32	124.18	0.05	0.05	874	16840		
			14:10:43	2.27	20.31	124.15	0.04	0.04	874	24620		
			14:10:44	2.36	20.31	124.20	0.02	0.02	874	50520		
			14:10:45	2.25	20.31	124.20	0.25	0.25	874	3503		
			14:10:46	2.32	20.30	124.11	0.02	0.02	874	43700		
			14:10:47	2.26	20.30	124.13	0.08	0.08	874	11515		
			14:10:48	2.29	20.30	124.09	0.07	0.07	874	11779		
			14:10:49	2.31	20.29	124.01	0.33	0.33	874	2662		
			14:10:50	2.30	20.27	123.93	0.37	0.37	874	2358		
			14:10:51	2.32	20.26	123.86	0.02	0.02	874	50814		
			14:10:52	2.24	20.26	123.88	0.02	0.02	874	48827		
			14:10:53	2.34	20.26	123.96	0.06	0.06	874	14097		
			14:10:54	2.34	20.28	123.96	0.20	0.20	874	4423		
			14:10:55	2.28	20.28	124.01	0.04	0.04	874	24345		
			14:10:56	2.31	20.28	124.03	0.50	0.07	874	12340		
			14:10:57	2.25	20.28	124.07	0.18	0.18	874	4797		
			14:10:58	2.28	20.28	124.05	0.12	0.12	874	7106		
			14:10:59	2.27	20.27	123.99	0.15	0.15	874	5838		
			14:11:00	2.23	20.27	124.07	0.09	0.09	874	10163		
			14:11:01	2.36	20.27	124.07	0.04	0.04	874	24620		
			14:11:02	2.26	20.28	124.15	0.39	0.39	874	2245		
			14:11:03	2.37	20.30	124.24	0.05	0.05	874	18918		
			14:11:04	2.28	20.33	124.31	0.02	0.02	874	46738		
			14:11:05	2.37	20.35	124.40	0.02	0.02	874	51412		
			14:11:06	2.29	20.35	124.36	0.06	0.06	874	14051		
			14:11:07	2.33	20.35	124.46	0.29	0.29	874	2989		
			14:11:08	2.30	20.39	124.55	0.02	0.02	874	49659		
			14:11:09	2.32	20.42	124.65	0.02	0.02	874	48827		
			14:11:10	2.30	20.42	124.57	0.06	0.06	874	13962		
			14:11:11	2.30	20.41	124.42	0.02	0.02	874	48827		
			14:11:12	2.26	20.37	124.25	0.11	0.11	874	8153		
			14:11:13	2.30	20.35	124.24	0.02	0.02	874	42843		
			14:11:14	2.27	20.35	124.25	0.10	0.10	874	8645		
			14:11:15	2.32	20.33	124.13	0.08	0.08	874	11292		
			14:11:16	2.28	20.31	124.11	0.14	0.14	874	6036		

**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

88	Instantaneous Minimum Dilution in Profile
123	Minimum Average Dilution in Profile
259	Detected Plume Average Dilution
2383	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:11:17	2.28	20.31	124.11	0.05	0.05	874	18918		
			14:11:18	2.29	20.31	124.09	0.04	0.04	874	20278		
			14:11:19	2.30	20.31	124.13	0.02	0.02	874	48827		
			14:11:20	2.31	20.31	124.15	0.06	0.06	874	13721		
			14:11:21	2.32	20.31	124.18	0.03	0.03	874	30775		
			14:11:22	2.29	20.31	124.18	0.09	0.09	874	9809		
			14:11:23	2.29	20.31	124.22	0.15	0.15	874	5720		
			14:11:24	2.32	20.30	124.25	0.73	0.28	874	3149		
			14:11:25	2.32	20.28	124.30	0.94	0.47	874	1867		
			14:11:26	2.30	20.28	124.32	0.90	0.43	874	2048		
			14:11:27	2.35	20.28	124.29	0.67	0.22	874	4003		
			14:11:28	2.33	20.29	124.20	0.03	0.03	874	25333		
			14:11:29	2.37	20.29	124.15	0.39	0.39	874	2251		
			14:11:30	2.30	20.29	124.24	0.09	0.09	874	9408		
			14:11:31	2.38	20.28	124.20	0.02	0.02	874	36878		
			14:11:32	2.37	20.29	124.20	0.28	0.28	874	3084		
			14:11:33	2.33	20.29	124.09	0.02	0.02	874	46243		
			14:11:34	2.37	20.29	124.07	0.05	0.05	874	18796		
			14:11:35	2.37	20.28	124.01	0.11	0.11	874	7982		
			14:11:36	2.36	20.28	123.98	0.11	0.11	874	7938		
			14:11:37	2.34	20.29	124.11	0.10	0.10	874	8611		
			14:11:38	2.35	20.32	124.22	0.02	0.02	874	41619		
			14:11:39	2.37	20.32	124.18	0.12	0.12	874	7515		
			14:11:40	2.26	20.33	124.23	0.02	0.02	874	42843		
			14:11:41	2.32	20.33	124.24	0.23	0.23	874	3849		
			14:11:42	2.33	20.32	124.11	0.02	0.02	874	43267		
			14:11:43	2.33	20.31	124.07	0.02	0.02	874	50520		
			14:11:44	2.36	20.30	124.03	0.06	0.06	874	13851		
			14:11:45	2.30	20.29	124.01	0.12	0.12	874	7283		
			14:11:46	2.30	20.28	123.96	0.17	0.17	874	5120		
			14:11:47	2.31	20.31	124.31	0.27	0.27	874	3277		
			14:11:48	2.30	20.41	124.65	0.02	0.02	874	52651		
			14:11:49	2.33	20.44	124.70	0.05	0.05	874	16125		
			14:11:50	2.33	20.45	124.74	0.03	0.03	874	28940		
			14:11:51	2.30	20.45	124.74	0.02	0.02	874	53951		
			14:11:52	2.25	20.44	124.65	0.02	0.02	874	45759		
			14:11:53	2.36	20.43	124.57	0.02	0.02	874	52651		
			14:11:54	2.30	20.39	124.38	0.02	0.02	874	50520		
			14:11:55	2.31	20.38	124.49	0.13	0.13	874	6576		

**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

88	Instantaneous Minimum Dilution in Profile
123	Minimum Average Dilution in Profile
259	Detected Plume Average Dilution
2383	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:11:56	2.34	20.44	124.82	0.02	0.02	874	47243		
			14:11:57	2.34	20.47	124.94	0.02	0.02	874	46738		
			14:11:58	2.37	20.48	124.92	0.02	0.02	874	48827		
			14:11:59	2.32	20.47	124.87	0.04	0.04	874	22239		
			14:12:00	2.34	20.47	124.94	0.02	0.02	874	50814		
			14:12:01	2.32	20.48	124.87	0.02	0.02	874	40276		
			14:12:02	2.40	20.48	124.90	0.02	0.02	874	36878		
			14:12:03	2.28	20.49	124.99	0.02	0.02	874	49379		
			14:12:04	2.36	20.52	125.03	0.13	0.13	874	6839		
			14:12:05	2.31	20.52	125.03	0.02	0.02	874	49101		
			14:12:06	2.33	20.52	125.07	0.02	0.02	874	50520		
			14:12:07	2.30	20.53	125.09	0.03	0.03	874	26975		
			14:12:08	2.35	20.53	125.07	0.02	0.02	874	46738		
			14:12:09	2.39	20.51	124.93	0.19	0.19	874	4586		
			14:12:10	2.35	20.49	124.92	0.02	0.02	874	37835		
			14:12:11	2.33	20.47	124.85	0.10	0.10	874	8535		
			14:12:12	2.30	20.46	124.80	0.06	0.06	874	15635		
			14:12:13	2.31	20.45	124.80	0.02	0.02	874	48827		
			14:12:14	2.33	20.45	124.74	0.02	0.02	874	49379		
			14:12:15	2.37	20.45	124.80	0.02	0.02	874	48287		
			14:12:16	2.36	20.48	124.94	0.02	0.02	874	48827		
			14:12:17	2.35	20.51	125.07	0.02	0.02	874	52651		
			14:12:18	2.33	20.56	125.26	0.02	0.02	874	48827		
			14:12:19	2.38	20.60	125.35	0.03	0.03	874	26810		
			14:12:20	2.34	20.58	125.16	0.02	0.02	874	45052		
			14:12:21	2.39	20.54	125.05	0.02	0.02	874	47760		
			14:12:22	2.36	20.53	124.97	0.02	0.02	874	47243		
			14:12:23	2.35	20.50	124.94	0.02	0.02	874	46738		
			14:12:24	2.37	20.49	124.92	0.02	0.02	874	48827		
			14:12:25	2.36	20.48	124.86	0.02	0.02	874	49943		
			14:12:26	2.36	20.47	124.85	0.04	0.04	874	23245		
			14:12:27	2.35	20.47	124.89	0.02	0.02	874	52651		
			14:12:28	2.31	20.48	124.94	0.02	0.02	874	52651		
			14:12:29	2.31	20.48	124.87	0.02	0.02	874	53293		
			14:12:30	2.32	20.46	124.78	0.02	0.02	874	49943		
			14:12:31	2.30	20.45	124.82	0.02	0.02	874	49659		
			14:12:32	2.35	20.46	124.80	0.02	0.02	874	49943		
			14:12:33	2.34	20.46	124.85	0.02	0.02	874	44821		
			14:12:34	2.33	20.47	124.85	0.02	0.02	874	51111		

**TABLE D-11**

Profile PRO-08 on September 21, 2022 (1353-1412 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>88</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>123</b>	<b>Minimum Average Dilution in Profile</b>
<b>259</b>	<b>Detected Plume Average Dilution</b>
<b>2383</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:12:35	2.34	20.49	124.95	0.02	0.02	874	53951		
			14:12:36	2.33	20.49	124.87	0.02	0.02	874	53293		
			14:12:37	2.33	20.48	124.80	0.02	0.02	874	45759		
			14:12:38	2.36	20.47	124.82	0.02	0.02	874	45759		
			14:12:39	2.34	20.48	124.92	0.02	0.02	874	48556		
			14:12:40	2.34	20.49	124.88	0.02	0.02	874	48287		
			14:12:41	2.31	20.48	124.87	0.02	0.02	874	48827		
			14:12:42	2.26	20.46	124.70	0.06	0.06	874	14640		
			14:12:43	2.31	20.44	124.68	0.09	0.09	874	9552		
			14:12:44	2.34	20.43	124.61	0.15	0.15	874	5942		
			14:12:45	2.42	20.42	124.74	0.02	0.02	874	47760		



**TABLE D-12**

Profile PRO-09 on September 21, 2022 (1435-1451 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-9 (South Acute Zone Boundary - 24 ft from Diffuser mid-point)	48 ft	0.21 m/sec 171 deg. (mag.) Flood tide	14:35:05	2.89	20.53	125.05	0.04	0.04	859	19657	No dye plume detected near surface	
			14:35:06	2.78	20.51	125.05	0.02	0.02	859	49942		
			14:35:07	2.20	20.50	124.95	0.02	0.02	859	47989		
			14:35:08	2.20	20.48	124.91	0.02	0.02	859	47459		
			14:35:09	2.22	20.48	124.92	0.02	0.02	859	53025		
			14:35:10	2.20	20.48	124.92	0.02	0.02	859	46940		
			14:35:11	2.19	20.47	124.89	0.05	0.05	859	16086		
			14:35:12	2.21	20.46	124.89	0.02	0.02	859	48807		
			14:35:13	2.23	20.45	124.85	0.02	0.02	859	46940		
			14:35:14	2.23	20.46	124.85	0.02	0.02	859	48531		
			14:35:15	2.23	20.45	124.82	0.02	0.02	859	52378		
			14:35:16	2.21	20.45	124.85	0.02	0.02	859	47989		
			14:35:17	2.19	20.45	124.82	0.02	0.02	859	50234		
			14:35:18	2.20	20.45	124.81	0.02	0.02	859	51747		
			14:35:19	2.20	20.45	124.80	0.02	0.02	859	48258		
			14:35:20	2.21	20.46	124.82	0.02	0.02	859	54025		
			14:35:21	2.13	20.46	124.82	0.02	0.02	859	41298		
			14:35:22	2.25	20.46	124.82	0.02	0.02	859	47989		
			14:35:23	2.21	20.45	124.76	0.02	0.02	859	46432		
			14:35:24	2.21	20.45	124.85	0.11	0.11	859	7830		
			14:35:25	2.19	20.45	124.85	0.02	0.02	859	49653		
			14:35:26	2.21	20.44	124.85	0.02	0.02	859	49086		
			14:35:27	2.24	20.43	124.74	0.02	0.02	859	47459		
14:35:28	2.21	20.43	124.77	0.02	0.02	859	37841					
14:35:29	2.21	20.42	124.74	0.02	0.02	859	51747					
14:35:30	2.22	20.42	124.68	0.02	0.02	859	49942					
14:35:31	2.21	20.42	124.70	0.03	0.03	859	28633					
14:35:32	2.23	20.42	124.72	0.02	0.02	859	45450					
14:35:33	2.18	20.42	124.70	0.02	0.02	859	48807					
14:35:34	2.18	20.42	124.72	0.02	0.02	859	48807					
14:35:35	2.18	20.42	124.68	0.23	0.23	859	3751					
14:35:36	2.19	20.42	124.72	0.02	0.02	859	44974					
14:35:37	2.19	20.43	124.72	0.02	0.02	859	49942					
14:35:38	2.17	20.43	124.70	0.02	0.02	859	51747					
14:35:39	2.13	20.43	124.72	0.02	0.02	859	44508					
14:35:40	2.13	20.43	124.72	0.02	0.02	859	47989					
14:35:41	2.14	20.43	124.74	0.03	0.03	859	27013					
14:35:42	2.16	20.43	124.74	0.02	0.02	859	49086					
14:35:43	2.14	20.43	124.78	0.02	0.02	859	51131					

**TABLE D-12**

Profile PRO-09 on September 21, 2022 (1435-1451 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

19	Instantaneous Minimum Dilution in Profile
44	Minimum Average Dilution in Profile
56	Plume Average Dilution Detected
3230	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:35:44	2.18	20.43	124.74	0.02	0.02	859	38178		
			14:35:45	2.16	20.43	124.72	0.02	0.02	859	45936		
			14:35:46	2.20	20.43	124.74	0.02	0.02	859	46432		
			14:35:47	2.19	20.45	124.81	0.08	0.08	859	10450		
			14:35:48	2.15	20.44	124.78	0.02	0.02	859	50529		
			14:35:49	2.21	20.43	124.70	0.05	0.05	859	18433		
			14:35:50	2.14	20.43	124.72	0.03	0.03	859	33819		
			14:35:51	2.16	20.44	124.78	0.02	0.02	859	46940		
			14:35:52	2.19	20.45	124.76	0.02	0.02	859	46940		
			14:35:53	2.16	20.43	124.68	0.02	0.02	859	46940		
			14:35:54	2.18	20.43	124.72	0.02	0.02	859	49086		
			14:35:55	2.13	20.44	124.76	0.02	0.02	859	48531		
			14:35:56	2.18	20.45	124.85	0.02	0.02	859	49653		
			14:35:57	2.19	20.46	124.83	0.02	0.02	859	52378		
			14:35:58	2.16	20.46	124.78	0.03	0.03	859	30789		
			14:35:59	2.22	20.45	124.76	0.02	0.02	859	50529		
			14:36:00	2.22	20.44	124.72	0.02	0.02	859	47459		
			14:36:01	2.19	20.43	124.68	0.07	0.07	859	12917		
			14:36:02	2.14	20.42	124.68	0.02	0.02	859	49086		
			14:36:03	2.19	20.41	124.68	0.02	0.02	859	48531		
			14:36:04	2.18	20.41	124.61	0.02	0.02	859	37841		
			14:36:05	2.21	20.41	124.61	0.02	0.02	859	51131		
			14:36:06	2.14	20.41	124.63	0.05	0.05	859	18473		
			14:36:07	2.12	20.41	124.61	0.02	0.02	859	46432		
			14:36:08	2.16	20.41	124.63	0.02	0.02	859	41298		
			14:36:09	2.18	20.41	124.63	0.02	0.02	859	50529		
			14:36:10	2.20	20.41	124.59	0.07	0.07	859	12688		
			14:36:11	2.16	20.41	124.65	0.03	0.03	859	31011		
			14:36:12	2.16	20.42	124.70	0.02	0.02	859	44051		
			14:36:13	2.14	20.43	124.72	0.02	0.02	859	47459		
			14:36:14	2.13	20.43	124.68	0.11	0.11	859	7968		
			14:36:15	2.18	20.42	124.63	0.02	0.02	859	48531		
			14:36:16	2.13	20.41	124.64	0.25	0.25	859	3414		
			14:36:17	2.22	20.41	124.61	0.02	0.02	859	46940		
			14:36:18	2.26	20.41	124.72	0.02	0.02	859	48258		
			14:36:19	2.29	20.43	124.76	0.03	0.03	859	26030		
			14:36:20	2.42	20.46	124.85	0.02	0.02	859	47989		
			14:36:21	2.98	20.43	124.55	0.02	0.02	859	46432		
			14:36:22	3.48	20.38	124.42	0.06	0.06	859	15017		

**TABLE D-12**

Profile PRO-09 on September 21, 2022 (1435-1451 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							19	44	56	3230	Instantaneous Minimum Dilution in Profile	
			14:36:23	4.75	20.34	124.23	0.02	0.02	859	45450		
			14:36:24	6.57	20.31	124.13	0.02	0.02	859	50234		
			14:36:25	6.95	20.30	124.18	0.02	0.02	859	52378		
			14:36:26	7.06	20.31	124.20	0.02	0.02	859	51747		
			14:36:27	7.00	20.31	124.24	0.02	0.02	859	37511		
			14:36:28	6.96	20.31	124.22	0.02	0.02	859	48531		
			14:36:29	6.96	20.30	124.09	0.02	0.02	859	36867		
			14:36:30	6.87	20.30	124.11	0.02	0.02	859	46940		
			14:36:31	6.93	20.29	124.13	0.02	0.02	859	50529		
			14:36:32	6.84	20.29	124.11	0.12	0.12	859	7105		
			14:36:33	6.83	20.29	124.07	0.02	0.02	859	50529		Only sporadic traces of dye plume detected at 6-7 ft
			14:36:34	6.94	20.29	124.07	0.14	0.14	859	6167		
			14:36:35	6.88	20.29	124.06	0.02	0.02	859	49086		
			14:36:36	6.91	20.29	124.11	0.05	0.05	859	16086		
			14:36:37	6.87	20.29	124.09	0.13	0.13	859	6527		
			14:36:38	6.90	20.29	124.09	0.11	0.11	859	7636		
			14:36:39	6.87	20.29	124.15	0.02	0.02	859	42950		
			14:36:40	6.92	20.30	124.23	0.02	0.02	859	37186		
			14:36:41	6.87	20.32	124.32	0.03	0.03	859	26844		
			14:36:42	6.87	20.32	124.29	0.24	0.24	859	3634	5491	Sporadic traces of dye plume
			14:36:43	6.91	20.33	124.27	0.12	0.12	859	7348		
			14:36:44	6.89	20.32	124.23	0.07	0.07	859	12540		
			14:36:45	6.90	20.31	124.22	0.23	0.23	859	3712		
			14:36:46	6.88	20.31	124.22	0.07	0.07	859	12840		
			14:36:47	6.91	20.31	124.20	0.09	0.09	859	9307		
			14:36:48	7.00	20.30	124.18	0.10	0.10	859	8920		
			14:36:49	6.92	20.30	124.22	0.07	0.07	859	11577		
			14:36:50	6.97	20.31	124.20	0.02	0.02	859	40905		
			14:36:51	6.87	20.31	124.18	0.24	0.24	859	3515		
			14:36:52	6.99	20.31	124.22	0.07	0.07	859	12976		
			14:36:53	6.88	20.31	124.18	0.03	0.03	859	30246		
			14:36:54	6.95	20.30	124.13	0.02	0.02	859	51131		
			14:36:55	6.92	20.30	124.12	0.02	0.02	859	47459		
			14:36:56	6.94	20.29	124.13	0.02	0.02	859	47989		
			14:36:57	6.92	20.29	124.11	0.02	0.02	859	47459		
			14:36:58	6.96	20.29	124.13	0.04	0.04	859	23928		
			14:36:59	6.91	20.30	124.20	0.02	0.02	859	50529		
			14:37:00	6.95	20.30	124.13	0.02	0.02	859	46940		
			14:37:01	6.89	20.30	124.11	0.07	0.07	859	11546		

**TABLE D-12**

Profile PRO-09 on September 21, 2022 (1435-1451 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:37:02	6.93	20.30	124.09	0.02	0.02	859	51747		
			14:37:03	6.92	20.30	124.15	0.02	0.02	859	46432		
			14:37:04	6.93	20.30	124.08	0.10	0.10	859	8530		
			14:37:05	6.90	20.30	124.13	0.02	0.02	859	36867		
			14:37:06	6.87	20.30	124.13	0.07	0.07	859	12840		
			14:37:07	6.97	20.30	124.05	0.02	0.02	859	48531		
			14:37:08	6.89	20.29	124.05	0.02	0.02	859	47459		
			14:37:09	6.98	20.30	124.09	0.05	0.05	859	18838		
			14:37:10	6.86	20.29	124.11	0.03	0.03	859	27621		
			14:37:11	7.02	20.31	124.24	0.02	0.02	859	48531		
			14:37:12	6.89	20.32	124.13	0.02	0.02	859	44974		
			14:37:13	6.93	20.31	124.09	0.02	0.02	859	50529		
			14:37:14	6.89	20.29	124.08	0.03	0.03	859	26677		
			14:37:15	6.97	20.29	124.03	0.10	0.10	859	8389		
			14:37:16	6.88	20.28	124.03	0.11	0.11	859	7622		
			14:37:17	6.95	20.28	123.96	0.28	0.28	859	3018	5320	Sporadic traces of dye plume
			14:37:18	6.90	20.28	124.01	0.06	0.06	859	13990		
			14:37:19	6.98	20.28	124.01	0.09	0.09	859	9080		
			14:37:20	6.89	20.28	124.01	0.16	0.16	859	5369		
			14:37:21	6.91	20.28	123.98	0.02	0.02	859	48531		
			14:37:22	6.91	20.28	123.98	0.02	0.02	859	48807		
			14:37:23	6.92	20.28	123.96	0.15	0.15	859	5629		
			14:37:24	6.94	20.28	123.99	0.15	0.15	859	5693		
			14:37:25	6.86	20.29	124.01	0.02	0.02	859	51747		
			14:37:26	6.99	20.30	124.20	0.02	0.02	859	47989		
			14:37:27	6.88	20.31	124.20	0.02	0.02	859	47459		
			14:37:28	6.97	20.31	124.27	0.18	0.18	859	4728		
			14:37:29	6.85	20.31	124.18	0.07	0.07	859	11816		
			14:37:30	7.01	20.31	124.20	0.02	0.02	859	44278		
			14:37:31	6.88	20.31	124.22	0.10	0.10	859	8939		
			14:37:32	6.96	20.30	124.18	0.09	0.09	859	9100	9019	Sporadic traces of dye plume
			14:37:33	6.88	20.31	124.26	0.02	0.02	859	51131		
			14:37:34	6.89	20.31	124.15	0.07	0.07	859	13095		
			14:37:35	6.97	20.31	124.15	0.18	0.18	859	4770		
			14:37:36	6.86	20.30	124.20	0.02	0.02	859	46432		
			14:37:37	6.94	20.31	124.20	0.11	0.11	859	8089		
			14:37:38	6.85	20.31	124.18	0.02	0.02	859	48807		
			14:37:39	6.97	20.31	124.18	0.02	0.02	859	49368		
			14:37:40	6.87	20.31	124.24	0.02	0.02	859	50234		

**TABLE D-12**

Profile PRO-09 on September 21, 2022 (1435-1451 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

19	Instantaneous Minimum Dilution in Profile
44	Minimum Average Dilution in Profile
56	Plume Average Dilution Detected
3230	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:37:41	6.97	20.31	124.20	0.02	0.02	859	50234		
			14:37:42	6.87	20.31	124.20	0.03	0.03	859	27184		
			14:37:43	7.01	20.31	124.20	0.02	0.02	859	46940		
			14:37:44	6.89	20.31	124.22	0.05	0.05	859	18161		
			14:37:45	6.95	20.31	124.20	0.07	0.07	859	11881		
			14:37:46	6.93	20.31	124.20	0.09	0.09	859	9795		
			14:37:47	6.94	20.31	124.20	0.02	0.02	859	47989		
			14:37:48	6.90	20.31	124.18	0.11	0.11	859	8073		
			14:37:49	6.91	20.30	124.13	0.06	0.06	859	13401		
			14:37:50	6.93	20.30	124.09	0.40	0.40	859	2165		
			14:37:51	6.86	20.29	124.07	0.37	0.37	859	2344	2255	Sporadic traces of dye plume
			14:37:52	6.92	20.29	124.09	0.02	0.02	859	51131		
			14:37:53	6.94	20.29	123.99	0.02	0.02	859	47459		
			14:37:54	6.92	20.29	124.07	0.02	0.02	859	48807		
			14:37:55	6.94	20.29	124.09	0.04	0.04	859	20355		
			14:37:56	6.94	20.30	124.13	0.02	0.02	859	45936		
			14:37:57	6.93	20.30	124.22	0.02	0.02	859	44974		
			14:37:58	6.93	20.30	124.13	0.13	0.13	859	6415		
			14:37:59	6.91	20.30	124.11	0.15	0.15	859	5896	6155	Sporadic traces of dye plume
			14:38:00	6.93	20.29	124.11	0.02	0.02	859	51747		
			14:38:01	6.98	20.29	124.11	0.05	0.05	859	16208		
			14:38:02	6.93	20.30	124.11	0.02	0.02	859	46432		
			14:38:03	6.91	20.30	124.13	0.02	0.02	859	54367		
			14:38:04	6.92	20.30	124.13	0.06	0.06	859	13678		
			14:38:05	6.93	20.29	124.03	0.14	0.14	859	5990		
			14:38:06	6.93	20.29	124.07	0.11	0.11	859	7642		
			14:38:07	6.94	20.29	124.05	0.02	0.02	859	47989		
			14:38:08	6.97	20.29	124.05	0.02	0.02	859	51747		
			14:38:09	6.92	20.29	124.11	0.02	0.02	859	48807		
			14:38:10	6.96	20.29	124.07	0.03	0.03	859	27621		
			14:38:11	6.95	20.30	124.09	0.03	0.03	859	24899		
			14:38:12	6.96	20.29	124.08	0.12	0.12	859	7444		
			14:38:13	6.94	20.29	124.03	0.02	0.02	859	46940		
			14:38:14	6.98	20.28	123.96	0.02	0.02	859	47989		
			14:38:15	7.00	20.27	123.88	0.07	0.07	859	11848		
			14:38:16	6.94	20.27	123.88	0.02	0.02	859	45450		
			14:38:17	7.01	20.27	123.86	0.05	0.05	859	18633		
			14:38:18	6.96	20.27	123.84	0.02	0.02	859	50529		
			14:38:19	6.96	20.26	123.86	0.02	0.02	859	49368		

**TABLE D-12**

Profile PRO-09 on September 21, 2022 (1435-1451 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							19	44	56	3230	Instantaneous Minimum Dilution in Profile	
			14:38:20	6.94	20.27	123.90	0.02	0.02	859	48531		
			14:38:21	7.00	20.27	123.94	0.18	0.18	859	4658		
			14:38:22	6.93	20.27	123.95	0.24	0.24	859	3597		
			14:38:23	7.06	20.27	123.88	0.19	0.19	859	4467	4032	Sporadic traces of dye plume
			14:38:24	6.88	20.27	123.90	0.06	0.06	859	13945		
			14:38:25	7.04	20.27	123.86	0.02	0.02	859	49368		
			14:38:26	6.92	20.27	123.84	0.02	0.02	859	45936		
			14:38:27	6.96	20.27	123.90	0.04	0.04	859	23216		
			14:38:28	6.91	20.27	123.88	0.06	0.06	859	14293		
			14:38:29	7.05	20.27	124.01	0.02	0.02	859	43827		
			14:38:30	6.90	20.28	124.03	0.06	0.06	859	15477		
			14:38:31	6.98	20.28	124.03	0.02	0.02	859	50529		
			14:38:32	6.92	20.28	124.03	0.03	0.03	859	24613		
			14:38:33	6.96	20.29	124.11	0.02	0.02	859	47989		
			14:38:34	6.98	20.30	124.09	0.02	0.02	859	47989		
			14:38:35	6.90	20.30	124.09	0.02	0.02	859	47459		
			14:38:36	6.96	20.30	124.11	0.02	0.02	859	49653		
			14:38:37	6.94	20.29	123.98	0.08	0.08	859	10166		
			14:38:38	6.99	20.27	123.77	0.02	0.02	859	46940		
			14:38:39	6.93	20.25	123.75	0.02	0.02	859	49368		
			14:38:40	7.03	20.25	123.77	0.02	0.02	859	51131		
			14:38:41	6.93	20.26	123.94	0.08	0.08	859	11170		
			14:38:42	7.00	20.28	123.99	0.09	0.09	859	9555		
			14:38:43	6.96	20.28	124.01	0.07	0.07	859	13215		
			14:38:44	6.99	20.28	123.98	0.07	0.07	859	11546		
			14:38:45	6.97	20.28	124.07	0.03	0.03	859	24755		
			14:38:46	7.01	20.29	124.03	0.08	0.08	859	11423		
			14:38:47	6.88	20.29	124.05	0.02	0.02	859	47459		
			14:38:48	6.96	20.29	124.07	0.04	0.04	859	24473		
			14:38:49	6.85	20.29	124.07	0.02	0.02	859	48807		
			14:38:50	7.01	20.29	124.03	0.02	0.02	859	42108		
			14:38:51	6.93	20.29	124.06	0.09	0.09	859	9576		
			14:38:52	7.52	20.29	124.01	0.02	0.02	859	50234		
			14:38:53	7.87	20.28	123.96	0.02	0.02	859	45936		
			14:38:54	8.30	20.28	123.86	0.02	0.02	859	47989		
			14:38:55	11.36	20.26	123.77	0.02	0.02	859	48807		
			14:38:56	12.60	20.25	123.75	0.02	0.02	859	50529		
			14:38:57	12.66	20.25	123.75	0.02	0.02	859	49653		
			14:38:58	12.74	20.25	123.77	0.02	0.02	859	43384		

**TABLE D-12**

Profile PRO-09 on September 21, 2022 (1435-1451 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							19	44	56	3230	Instantaneous Minimum Dilution in Profile	
			14:38:59	12.75	20.26	123.77	0.02	0.02	859	47989		
			14:39:00	12.75	20.26	123.84	0.02	0.02	859	51747		
			14:39:01	12.71	20.26	123.85	0.02	0.02	859	41699		
			14:39:02	12.78	20.26	123.79	0.02	0.02	859	47989		
			14:39:03	12.71	20.25	123.77	0.02	0.02	859	49368		
			14:39:04	12.84	20.25	123.79	0.02	0.02	859	54367		
			14:39:05	12.68	20.26	123.84	0.02	0.02	859	46940		
			14:39:06	12.85	20.26	123.82	0.02	0.02	859	47459		
			14:39:07	12.68	20.26	123.79	0.02	0.02	859	47989		
			14:39:08	12.80	20.25	123.75	0.02	0.02	859	46940		
			14:39:09	12.69	20.25	123.71	0.02	0.02	859	47459		
			14:39:10	12.83	20.25	123.75	0.02	0.02	859	46940		
			14:39:11	12.71	20.25	123.75	0.11	0.11	859	7802		
			14:39:12	12.78	20.25	123.71	0.02	0.02	859	45936		
			14:39:13	12.72	20.25	123.82	0.02	0.02	859	45450		
			14:39:14	12.78	20.26	123.88	0.02	0.02	859	47459		
			14:39:15	12.71	20.26	123.88	0.02	0.02	859	46940		
			14:39:16	12.77	20.26	123.84	0.02	0.02	859	51131		
			14:39:17	12.74	20.27	123.86	0.02	0.02	859	53025		
			14:39:18	12.73	20.27	123.86	0.02	0.02	859	48531		
			14:39:19	12.76	20.27	123.88	0.02	0.02	859	47459		
			14:39:20	12.77	20.26	123.90	0.02	0.02	859	45450		
			14:39:21	12.73	20.26	123.81	0.02	0.02	859	52378		
			14:39:22	12.74	20.25	123.73	0.02	0.02	859	49942		
			14:39:23	12.76	20.25	123.71	0.02	0.02	859	44508		
			14:39:24	12.74	20.25	123.73	0.02	0.02	859	50234		
			14:39:25	12.73	20.25	123.67	0.02	0.02	859	47989		
			14:39:26	12.67	20.24	123.73	0.02	0.02	859	49942		
			14:39:27	12.72	20.25	123.79	0.02	0.02	859	45450		
			14:39:28	12.60	20.25	123.73	0.31	0.31	859	2743		
			14:39:29	12.73	20.25	123.73	0.02	0.02	859	51747		
			14:39:30	12.67	20.25	123.77	0.02	0.02	859	51747		
			14:39:31	12.73	20.25	123.75	0.02	0.02	859	47989		
			14:39:32	12.69	20.25	123.75	0.02	0.02	859	46940		
			14:39:33	12.72	20.26	123.79	0.02	0.02	859	47459		
			14:39:34	12.64	20.26	123.75	0.02	0.02	859	47459		
			14:39:35	12.70	20.26	123.79	0.02	0.02	859	47722		
			14:39:36	12.68	20.25	123.79	0.02	0.02	859	45936		
			14:39:37	12.72	20.25	123.73	0.02	0.02	859	46940		

**TABLE D-12**

Profile PRO-09 on September 21, 2022 (1435-1451 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
3230												
Profile Average Dilution												
56												
Plume Average Dilution Detected												
44												
Minimum Average Dilution in Profile												
			14:39:38	12.68	20.25	123.69	0.02	0.02	859	47989		
			14:39:39	12.74	20.25	123.73	0.02	0.02	859	53025		
			14:39:40	12.67	20.25	123.79	0.02	0.02	859	47459		
			14:39:41	12.74	20.25	123.75	0.02	0.02	859	47989		
			14:39:42	12.68	20.25	123.77	0.02	0.02	859	45936		
			14:39:43	12.75	20.25	123.79	0.02	0.02	859	47459		
			14:39:44	12.67	20.26	123.77	0.02	0.02	859	46940		
			14:39:45	12.74	20.25	123.69	0.05	0.05	859	16551		
			14:39:46	12.67	20.25	123.79	0.02	0.02	859	47989		
			14:39:47	12.78	20.26	123.84	0.02	0.02	859	46940		
			14:39:48	12.66	20.26	123.84	0.02	0.02	859	47989		
			14:39:49	12.85	20.26	123.79	0.02	0.02	859	47459		
			14:39:50	12.69	20.26	123.85	0.02	0.02	859	49086		
			14:39:51	12.80	20.26	123.84	0.05	0.05	859	16208		
			14:39:52	12.72	20.26	123.88	0.02	0.02	859	46432		
			14:39:53	12.80	20.27	123.84	0.04	0.04	859	20212		
			14:39:54	12.72	20.27	123.88	0.02	0.02	859	45936		
			14:39:55	12.80	20.27	123.84	0.04	0.04	859	24062		
			14:39:56	12.75	20.27	123.84	0.02	0.02	859	48807		
			14:39:57	12.79	20.27	123.84	0.11	0.11	859	7502		
			14:39:58	12.75	20.27	123.84	0.02	0.02	859	47459		
			14:39:59	12.76	20.27	123.84	0.02	0.02	859	51747		
			14:40:00	12.78	20.26	123.79	0.02	0.02	859	46432		
			14:40:01	12.76	20.26	123.77	0.02	0.02	859	49942		
			14:40:02	12.75	20.26	123.82	0.02	0.02	859	52378		
			14:40:03	12.72	20.26	123.86	0.02	0.02	859	49368		
			14:40:04	12.79	20.26	123.84	0.02	0.02	859	50234		
			14:40:05	12.74	20.26	123.77	0.02	0.02	859	52378		
			14:40:06	12.80	20.25	123.71	0.02	0.02	859	43604		
			14:40:07	12.76	20.25	123.75	0.02	0.02	859	44278		
			14:40:08	12.77	20.25	123.75	0.02	0.02	859	47459		
			14:40:09	12.81	20.26	123.82	0.02	0.02	859	46940		
			14:40:10	12.75	20.27	123.87	0.02	0.02	859	51131		
			14:40:11	12.76	20.27	123.90	0.04	0.04	859	19434		
			14:40:12	12.79	20.27	123.84	0.10	0.10	859	8300		
			14:40:13	12.79	20.27	123.86	0.31	0.31	859	2784	5542	Sporadic traces of dye plume at 13 ft
			14:40:14	12.83	20.26	123.75	0.06	0.06	859	13277		
			14:40:15	12.82	20.25	123.69	0.02	0.02	859	51747		
			14:40:16	12.83	20.24	123.69	0.02	0.02	859	46432		



**TABLE D-12**

Profile PRO-09 on September 21, 2022 (1435-1451 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

19	Instantaneous Minimum Dilution in Profile
44	Minimum Average Dilution in Profile
56	Plume Average Dilution Detected
3230	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:40:17	12.79	20.24	123.73	0.02	0.02	859	47459		
			14:40:18	12.60	20.25	123.77	0.03	0.03	859	30246		
			14:40:19	12.65	20.25	123.71	0.06	0.06	859	13570		
			14:40:20	12.57	20.25	123.71	0.06	0.06	859	13359		
			14:40:21	12.74	20.25	123.71	0.02	0.02	859	46432		
			14:40:22	12.51	20.25	123.71	0.02	0.02	859	51131		
			14:40:23	12.59	20.25	123.71	0.02	0.02	859	47459		
			14:40:24	12.56	20.25	123.69	0.02	0.02	859	47459		
			14:40:25	12.61	20.25	123.73	0.02	0.02	859	51747		
			14:40:26	12.56	20.25	123.73	0.02	0.02	859	49653		
			14:40:27	12.57	20.25	123.69	0.04	0.04	859	20212		
			14:40:28	12.56	20.25	123.69	0.14	0.14	859	6144		
			14:40:29	12.59	20.25	123.71	0.02	0.02	859	47989		
			14:40:30	12.58	20.25	123.75	0.02	0.02	859	48807		
			14:40:31	12.54	20.25	123.71	0.02	0.02	859	47459		
			14:40:32	12.56	20.25	123.65	0.02	0.02	859	44974		
			14:40:33	12.54	20.25	123.69	0.14	0.14	859	6363		
			14:40:34	12.54	20.25	123.73	0.02	0.02	859	49653		
			14:40:35	12.53	20.25	123.73	0.02	0.02	859	46432		
			14:40:36	12.65	20.24	123.67	0.02	0.02	859	50529		
			14:40:37	12.59	20.24	123.67	0.02	0.02	859	46432		
			14:40:38	12.60	20.24	123.73	0.02	0.02	859	41699		
			14:40:39	12.59	20.25	123.75	0.02	0.02	859	51747		
			14:40:40	12.58	20.25	123.77	0.22	0.22	859	3982		
			14:40:41	12.63	20.25	123.79	0.02	0.02	859	47989		
			14:40:42	12.58	20.25	123.75	0.02	0.02	859	46940		
			14:40:43	12.50	20.26	123.75	0.06	0.06	859	14913		
			14:40:44	12.64	20.25	123.73	0.04	0.04	859	21158		
			14:40:45	12.58	20.26	123.82	0.04	0.04	859	20212		
			14:40:46	12.66	20.26	123.75	0.02	0.02	859	47989		
			14:40:47	12.74	20.25	123.69	0.02	0.02	859	47459		
			14:40:48	14.17	20.25	123.71	0.02	0.02	859	48807		
			14:40:49	17.25	20.24	123.55	0.02	0.02	859	49942		
			14:40:50	18.20	20.22	123.55	0.02	0.02	859	48531		
			14:40:51	18.24	20.23	123.59	0.02	0.02	859	48807		
			14:40:52	18.21	20.23	123.55	0.13	0.13	859	6478		
			14:40:53	18.27	20.23	123.57	0.02	0.02	859	45450		
			14:40:54	18.17	20.23	123.60	0.07	0.07	859	12937		
			14:40:55	18.28	20.23	123.57	0.02	0.02	859	49368		

**TABLE D-12**

Profile PRO-09 on September 21, 2022 (1435-1451 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

19	Instantaneous Minimum Dilution in Profile
44	Minimum Average Dilution in Profile
56	Plume Average Dilution Detected
3230	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:40:56	18.18	20.23	123.55	0.02	0.02	859	51747		No dye detected at 18 ft
			14:40:57	18.28	20.23	123.63	0.07	0.07	859	13015		
			14:40:58	18.27	20.23	123.63	0.02	0.02	859	46432		
			14:40:59	18.23	20.24	123.63	0.02	0.02	859	47989		
			14:41:00	18.27	20.24	123.65	0.02	0.02	859	48531		
			14:41:01	18.26	20.24	123.65	0.02	0.02	859	47989		
			14:41:02	18.23	20.23	123.63	0.02	0.02	859	53025		
			14:41:03	18.29	20.23	123.58	0.02	0.02	859	49942		
			14:41:04	18.18	20.23	123.54	0.03	0.03	859	29418		
			14:41:05	18.28	20.23	123.54	0.02	0.02	859	52378		
			14:41:06	18.22	20.23	123.63	0.02	0.02	859	51131		
			14:41:07	18.28	20.23	123.57	0.02	0.02	859	47989		
			14:41:08	18.21	20.23	123.55	0.02	0.02	859	47989		
			14:41:09	18.29	20.23	123.59	0.02	0.02	859	49368		
			14:41:10	18.24	20.23	123.59	0.02	0.02	859	47989		
			14:41:11	18.27	20.23	123.63	0.12	0.12	859	7231		
			14:41:12	18.27	20.23	123.60	0.02	0.02	859	49086		
			14:41:13	18.29	20.23	123.60	0.02	0.02	859	48531		
			14:41:14	18.21	20.23	123.59	0.02	0.02	859	47989		
			14:41:15	18.31	20.23	123.61	0.02	0.02	859	49086		
			14:41:16	18.24	20.23	123.59	0.02	0.02	859	48531		
			14:41:17	18.27	20.23	123.58	0.02	0.02	859	48531		
			14:41:18	18.24	20.23	123.59	0.02	0.02	859	44974		
			14:41:19	18.25	20.24	123.59	0.02	0.02	859	50529		
			14:41:20	18.24	20.24	123.67	0.02	0.02	859	47989		
			14:41:21	18.25	20.24	123.71	0.23	0.23	859	3781		
			14:41:22	18.24	20.24	123.60	0.02	0.02	859	48531		
			14:41:23	18.25	20.24	123.69	0.02	0.02	859	48531		
			14:41:24	18.25	20.24	123.71	0.02	0.02	859	45450		
			14:41:25	18.28	20.25	123.77	0.02	0.02	859	49368		
			14:41:26	18.28	20.25	123.71	0.02	0.02	859	44508		
			14:41:27	18.20	20.26	123.79	0.03	0.03	859	26928		
			14:41:28	18.28	20.26	123.79	0.02	0.02	859	47459		
			14:41:29	18.27	20.26	123.73	0.02	0.02	859	48258		
			14:41:30	18.22	20.26	123.73	0.02	0.02	859	53025		
			14:41:31	18.22	20.25	123.73	0.02	0.02	859	51131		
			14:41:32	18.29	20.25	123.73	0.02	0.02	859	51131		
			14:41:33	18.27	20.25	123.79	0.02	0.02	859	53688		
			14:41:34	18.18	20.25	123.73	0.02	0.02	859	48531		

**TABLE D-12**

Profile PRO-09 on September 21, 2022 (1435-1451 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

19	Instantaneous Minimum Dilution in Profile
44	Minimum Average Dilution in Profile
56	Plume Average Dilution Detected
3230	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:41:35	18.28	20.25	123.71	0.02	0.02	859	46940		
			14:41:36	18.21	20.25	123.73	0.02	0.02	859	48531		
			14:41:37	18.24	20.25	123.71	0.02	0.02	859	44508		
			14:41:38	18.25	20.25	123.65	0.16	0.16	859	5406		
			14:41:39	18.24	20.25	123.75	0.02	0.02	859	46940		
			14:41:40	18.28	20.25	123.67	0.02	0.02	859	49653		
			14:41:41	18.25	20.24	123.69	0.03	0.03	859	30035		
			14:41:42	18.28	20.24	123.71	0.02	0.02	859	50234		
			14:41:43	18.23	20.24	123.67	0.02	0.02	859	48531		
			14:41:44	18.27	20.24	123.65	0.02	0.02	859	48531		
			14:41:45	18.26	20.24	123.65	0.02	0.02	859	46940		
			14:41:46	18.26	20.24	123.57	0.02	0.02	859	46432		
			14:41:47	18.23	20.23	123.59	0.02	0.02	859	49368		
			14:41:48	18.24	20.23	123.51	0.02	0.02	859	44508		
			14:41:49	18.23	20.23	123.54	0.02	0.02	859	51131		
			14:41:50	18.30	20.23	123.53	0.02	0.02	859	46940		
			14:41:51	18.27	20.22	123.53	0.02	0.02	859	49086		
			14:41:52	18.28	20.22	123.55	0.02	0.02	859	47459		
			14:41:53	18.24	20.22	123.51	0.02	0.02	859	50529		
			14:41:54	18.28	20.22	123.51	0.02	0.02	859	50529		
			14:41:55	18.23	20.22	123.52	0.02	0.02	859	47989		
			14:41:56	18.21	20.22	123.51	0.02	0.02	859	50529		
			14:41:57	18.23	20.22	123.51	0.02	0.02	859	49086		
			14:41:58	18.22	20.22	123.52	0.02	0.02	859	50234		
			14:41:59	18.25	20.22	123.51	0.02	0.02	859	50529		
			14:42:00	18.21	20.22	123.55	0.06	0.06	859	15422		
			14:42:01	18.28	20.23	123.55	0.02	0.02	859	50234		
			14:42:02	18.27	20.23	123.55	0.02	0.02	859	52378		
			14:42:03	18.25	20.23	123.54	0.02	0.02	859	48807		
			14:42:04	18.22	20.23	123.55	0.06	0.06	859	14059		
			14:42:05	18.25	20.23	123.55	0.02	0.02	859	46940		
			14:42:06	18.28	20.23	123.54	0.02	0.02	859	47989		
			14:42:07	18.25	20.23	123.57	0.02	0.02	859	47989		
			14:42:08	18.22	20.23	123.55	0.02	0.02	859	46432		
			14:42:09	18.27	20.23	123.54	0.02	0.02	859	47989		
			14:42:10	18.22	20.23	123.63	0.02	0.02	859	45450		
			14:42:11	18.18	20.23	123.60	0.02	0.02	859	46940		
			14:42:12	18.18	20.24	123.67	0.02	0.02	859	47459		
			14:42:13	18.19	20.24	123.67	0.02	0.02	859	48807		

**TABLE D-12**

Profile PRO-09 on September 21, 2022 (1435-1451 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							19	44	56	3230	Instantaneous Minimum Dilution in Profile	
			14:42:14	18.26	20.24	123.69	0.02	0.02	859	49368		
			14:42:15	18.25	20.24	123.71	0.02	0.02	859	46940		
			14:42:16	18.40	20.24	123.69	0.02	0.02	859	47989		
			14:42:17	18.80	20.24	123.71	0.02	0.02	859	50529		
			14:42:18	20.79	20.24	123.62	0.02	0.02	859	50529		
			14:42:19	23.71	20.20	123.53	0.02	0.02	859	47459		
			14:42:20	24.12	20.18	123.48	0.02	0.02	859	47459		
			14:42:21	24.15	20.19	123.54	0.02	0.02	859	46432		
			14:42:22	24.23	20.19	123.52	0.02	0.02	859	53688		
			14:42:23	24.24	20.19	123.51	0.02	0.02	859	45450		
			14:42:24	24.27	20.19	123.50	0.02	0.02	859	44508		
			14:42:25	24.25	20.19	123.54	0.02	0.02	859	50529		
			14:42:26	24.20	20.19	123.51	0.02	0.02	859	48531		
			14:42:27	24.20	20.19	123.53	0.02	0.02	859	48531		No dye detected at 24 ft
			14:42:28	24.18	20.19	123.52	0.02	0.02	859	47459		
			14:42:29	24.25	20.20	123.53	0.02	0.02	859	47459		
			14:42:30	24.23	20.21	123.57	0.02	0.02	859	46432		
			14:42:31	24.27	20.21	123.52	0.02	0.02	859	45936		
			14:42:32	24.22	20.22	123.57	0.02	0.02	859	52378		
			14:42:33	24.27	20.22	123.59	0.06	0.06	859	15422		
			14:42:34	24.24	20.22	123.57	0.02	0.02	859	51131		
			14:42:35	24.25	20.22	123.57	0.02	0.02	859	49368		
			14:42:36	24.26	20.23	123.63	0.02	0.02	859	45936		
			14:42:37	24.26	20.23	123.60	0.02	0.02	859	48807		
			14:42:38	24.21	20.23	123.59	0.02	0.02	859	43166		
			14:42:39	24.25	20.23	123.60	0.02	0.02	859	48531		
			14:42:40	24.22	20.23	123.59	0.02	0.02	859	48258		
			14:42:41	24.22	20.22	123.59	0.02	0.02	859	51131		
			14:42:42	24.24	20.22	123.60	0.02	0.02	859	46940		
			14:42:43	24.23	20.23	123.65	0.02	0.02	859	47459		
			14:42:44	24.18	20.24	123.71	0.02	0.02	859	50529		
			14:42:45	24.23	20.24	123.67	0.02	0.02	859	51131		
			14:42:46	24.18	20.24	123.69	0.02	0.02	859	50529		
			14:42:47	24.20	20.24	123.69	0.02	0.02	859	51747		
			14:42:48	24.16	20.25	123.75	0.02	0.02	859	49942		
			14:42:49	24.17	20.25	123.71	0.02	0.02	859	49942		
			14:42:50	24.18	20.25	123.75	0.02	0.02	859	47459		
			14:42:51	24.16	20.25	123.67	0.02	0.02	859	46940		
			14:42:52	24.21	20.25	123.65	0.02	0.02	859	46940		

**TABLE D-12**

Profile PRO-09 on September 21, 2022 (1435-1451 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

19	Instantaneous Minimum Dilution in Profile
44	Minimum Average Dilution in Profile
56	Plume Average Dilution Detected
3230	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:42:53	24.17	20.24	123.67	0.02	0.02	859	45936		
			14:42:54	24.09	20.24	123.69	0.02	0.02	859	47989		
			14:42:55	24.10	20.24	123.71	0.02	0.02	859	47459		
			14:42:56	24.16	20.25	123.69	0.02	0.02	859	48258		
			14:42:57	24.15	20.24	123.67	0.02	0.02	859	46940		
			14:42:58	24.16	20.24	123.65	0.02	0.02	859	49368		
			14:42:59	24.10	20.24	123.65	0.02	0.02	859	49653		
			14:43:00	24.20	20.24	123.71	0.02	0.02	859	53688		
			14:43:01	24.16	20.24	123.67	0.02	0.02	859	50529		
			14:43:02	24.17	20.24	123.60	0.02	0.02	859	49368		
			14:43:03	24.14	20.24	123.67	0.02	0.02	859	49368		
			14:43:04	24.15	20.24	123.65	0.02	0.02	859	47459		
			14:43:05	24.12	20.24	123.60	0.02	0.02	859	47459		
			14:43:06	24.19	20.24	123.63	0.02	0.02	859	50529		
			14:43:07	24.17	20.24	123.61	0.02	0.02	859	49086		
			14:43:08	24.14	20.23	123.63	0.02	0.02	859	47459		
			14:43:09	24.16	20.23	123.57	0.02	0.02	859	44508		
			14:43:10	24.16	20.23	123.59	0.02	0.02	859	56887		
			14:43:11	24.16	20.23	123.57	0.02	0.02	859	52378		
			14:43:12	24.18	20.23	123.57	0.02	0.02	859	44974		
			14:43:13	24.13	20.22	123.57	0.02	0.02	859	44974		
			14:43:14	24.21	20.22	123.59	0.02	0.02	859	45936		
			14:43:15	24.14	20.22	123.55	0.02	0.02	859	44051		
			14:43:16	24.19	20.22	123.55	0.02	0.02	859	48531		
			14:43:17	24.16	20.22	123.57	0.02	0.02	859	45936		
			14:43:18	24.19	20.22	123.58	0.02	0.02	859	55419		
			14:43:19	24.12	20.22	123.53	0.02	0.02	859	53025		
			14:43:20	24.17	20.22	123.54	0.02	0.02	859	49086		
			14:43:21	24.18	20.22	123.57	0.02	0.02	859	43166		
			14:43:22	24.19	20.22	123.53	0.02	0.02	859	49942		
			14:43:23	24.20	20.22	123.50	0.02	0.02	859	47459		
			14:43:24	24.17	20.22	123.55	0.02	0.02	859	47989		
			14:43:25	24.16	20.22	123.54	0.02	0.02	859	49653		
			14:43:26	24.12	20.22	123.58	0.02	0.02	859	45936		
			14:43:27	24.12	20.22	123.50	0.02	0.02	859	48531		
			14:43:28	24.03	20.22	123.53	0.02	0.02	859	50529		
			14:43:29	24.07	20.22	123.52	0.02	0.02	859	49086		
			14:43:30	24.20	20.22	123.55	0.02	0.02	859	52378		
			14:43:31	24.14	20.22	123.57	0.02	0.02	859	50529		

**TABLE D-12**

Profile PRO-09 on September 21, 2022 (1435-1451 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
3230												
Profile Average Dilution												
56												
Plume Average Dilution Detected												
44												
Minimum Average Dilution in Profile												
			14:43:32	24.69	20.22	123.55	0.02	0.02	859	52378		
			14:43:33	25.34	20.21	123.51	0.02	0.02	859	45450		
			14:43:34	28.15	20.19	123.56	0.02	0.02	859	51747		
			14:43:35	29.84	20.17	123.63	0.02	0.02	859	40905		
			14:43:36	29.99	20.17	123.71	0.04	0.04	859	24062		
			14:43:37	30.07	20.17	123.71	0.02	0.02	859	46940		
			14:43:38	30.08	20.16	123.75	0.02	0.02	859	51747		
			14:43:39	30.12	20.16	123.75	0.02	0.02	859	44974		
			14:43:40	30.08	20.16	123.86	0.02	0.02	859	51747		
			14:43:41	30.02	20.15	123.84	0.02	0.02	859	44508		
			14:43:42	30.17	20.15	123.79	0.02	0.02	859	51747		
			14:43:43	30.10	20.15	123.79	0.02	0.02	859	48531		
			14:43:44	30.16	20.15	123.86	0.02	0.02	859	35941		
			14:43:45	30.06	20.15	123.83	0.62	0.18	859	4869		
			14:43:46	30.08	20.15	123.86	0.40	0.40	859	2127	3498	Sporatic traces of dye plume at 30 ft
			14:43:47	30.16	20.16	123.86	0.02	0.02	859	45450		
			14:43:48	30.04	20.15	123.88	0.02	0.02	859	47989		
			14:43:49	30.13	20.15	123.90	0.02	0.02	859	44974		
			14:43:50	30.03	20.15	123.92	0.10	0.10	859	8883		
			14:43:51	30.02	20.15	123.92	0.06	0.06	859	13855		
			14:43:52	30.03	20.15	123.88	0.13	0.13	859	6680		
			14:43:53	30.06	20.15	123.90	0.02	0.02	859	47989		
			14:43:54	30.07	20.15	123.94	0.08	0.08	859	10553		
			14:43:55	30.05	20.15	124.06	0.02	0.02	859	52378		
			14:43:56	30.07	20.14	123.94	0.02	0.02	859	53025		
			14:43:57	30.05	20.14	123.96	0.02	0.02	859	44974		
			14:43:58	30.04	20.14	123.99	0.03	0.03	859	26760		
			14:43:59	30.08	20.14	123.99	0.02	0.02	859	45936		
			14:44:00	30.08	20.15	124.03	0.07	0.07	859	12307		
			14:44:01	30.06	20.15	124.03	0.02	0.02	859	48531		
			14:44:02	30.01	20.15	124.01	0.02	0.02	859	51131		
			14:44:03	30.06	20.15	124.03	0.02	0.02	859	46432		
			14:44:04	30.00	20.15	123.96	0.02	0.02	859	49086		
			14:44:05	30.09	20.15	123.97	0.02	0.02	859	51131		
			14:44:06	30.03	20.15	123.94	0.02	0.02	859	47459		
			14:44:07	30.06	20.15	124.03	0.02	0.02	859	52378		
			14:44:08	30.11	20.15	123.96	0.02	0.02	859	54367		
			14:44:09	30.02	20.15	124.01	0.02	0.02	859	46940		
			14:44:10	30.11	20.15	123.96	0.02	0.02	859	39045		

**TABLE D-12**

Profile PRO-09 on September 21, 2022 (1435-1451 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:44:11	30.04	20.15	123.96	0.17	0.17	859	5026		
			14:44:12	30.17	20.15	123.99	0.35	0.35	859	2436	3731	Sporadic traces of dye plume at 30 ft
			14:44:13	30.05	20.15	123.96	0.06	0.06	859	13359		
			14:44:14	30.13	20.15	123.94	0.04	0.04	859	21262		
			14:44:15	30.08	20.16	123.95	0.02	0.02	859	48807		
			14:44:16	30.05	20.16	123.88	0.19	0.19	859	4623		
			14:44:17	30.05	20.16	123.88	0.02	0.02	859	48531		
			14:44:18	30.04	20.16	123.88	0.02	0.02	859	48531		
			14:44:19	29.99	20.16	123.82	0.02	0.02	859	46940		
			14:44:20	29.92	20.16	123.86	0.07	0.07	859	12840		
			14:44:21	30.01	20.16	123.88	0.02	0.02	859	48531		
			14:44:22	29.95	20.16	123.90	0.13	0.13	859	6377		
			14:44:23	30.00	20.16	123.90	0.02	0.02	859	45936		
			14:44:24	29.97	20.16	123.96	0.02	0.02	859	48531		
			14:44:25	29.97	20.16	123.90	0.02	0.02	859	50234		
			14:44:26	29.99	20.16	123.90	0.02	0.02	859	46940		
			14:44:27	29.95	20.16	123.88	0.02	0.02	859	49086		
			14:44:28	29.99	20.16	123.90	0.04	0.04	859	20550		
			14:44:29	30.00	20.16	123.88	0.02	0.02	859	47989		
			14:44:30	30.00	20.16	123.86	0.02	0.02	859	44974		
			14:44:31	29.98	20.16	123.84	0.02	0.02	859	46432		
			14:44:32	30.07	20.16	123.84	0.06	0.06	859	13900		
			14:44:33	30.10	20.16	123.88	0.02	0.02	859	44974		
			14:44:34	30.15	20.16	123.85	0.02	0.02	859	50234		
			14:44:35	30.10	20.16	123.88	0.02	0.02	859	47989		
			14:44:36	30.12	20.16	123.88	0.52	0.08	859	10202		
			14:44:37	30.13	20.16	123.88	0.02	0.02	859	40140		
			14:44:38	30.06	20.16	123.92	0.02	0.02	859	45936		
			14:44:39	30.08	20.16	123.90	0.02	0.02	859	49368		
			14:44:40	30.06	20.16	123.88	0.02	0.02	859	51747		
			14:44:41	30.12	20.16	123.90	0.04	0.04	859	24473		
			14:44:42	30.10	20.16	123.86	0.02	0.02	859	45450		
			14:44:43	30.06	20.16	123.92	0.04	0.04	859	19478		
			14:44:44	30.07	20.16	123.85	0.02	0.02	859	49942		
			14:44:45	30.01	20.16	123.88	0.02	0.02	859	51131		
			14:44:46	30.07	20.16	123.90	0.02	0.02	859	50234		
			14:44:47	30.01	20.16	123.84	0.02	0.02	859	46432		
			14:44:48	30.01	20.16	123.88	0.02	0.02	859	50529		
			14:44:49	30.09	20.16	123.88	0.02	0.02	859	49653		

**TABLE D-12**

Profile PRO-09 on September 21, 2022 (1435-1451 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

19	Instantaneous Minimum Dilution in Profile
44	Minimum Average Dilution in Profile
56	Plume Average Dilution Detected
3230	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:44:50	30.03	20.16	123.90	0.02	0.02	859	44974		
			14:44:51	30.01	20.16	123.86	0.05	0.05	859	18838		
			14:44:52	29.96	20.16	123.88	0.02	0.02	859	55779		
			14:44:53	30.13	20.16	123.90	0.02	0.02	859	50529		
			14:44:54	30.11	20.16	123.91	0.02	0.02	859	49368		
			14:44:55	30.23	20.16	123.88	0.04	0.04	859	24334		
			14:44:56	30.48	20.16	123.79	0.02	0.02	859	47459		
			14:44:57	32.07	20.16	123.88	0.04	0.04	859	20117		
			14:44:58	34.98	20.15	124.05	0.07	0.07	859	12840		
			14:44:59	35.70	20.14	124.09	0.08	0.08	859	10697		
			14:45:00	35.86	20.14	124.07	0.36	0.36	859	2410		
			14:45:01	35.87	20.14	124.09	0.13	0.13	859	6780	4595	Sporatic traces of dye plume at 36 ft
			14:45:02	35.98	20.14	124.09	0.02	0.02	859	49086		
			14:45:03	35.92	20.14	124.12	0.17	0.17	859	5015		
			14:45:04	35.90	20.13	124.13	0.04	0.04	859	21475		
			14:45:05	36.02	20.13	124.15	0.32	0.32	859	2711		
			14:45:06	35.84	20.13	124.18	0.10	0.10	859	8865		
			14:45:07	35.98	20.13	124.18	0.17	0.17	859	5032		
			14:45:08	35.91	20.13	124.15	0.18	0.18	859	4859		
			14:45:09	35.97	20.13	124.18	0.15	0.15	859	5614	5168	Sporatic traces of dye plume at 36 ft
			14:45:10	35.92	20.13	124.13	0.05	0.05	859	17249		
			14:45:11	35.90	20.13	124.15	0.19	0.19	859	4576		
			14:45:12	35.90	20.13	124.13	0.16	0.16	859	5309		
			14:45:13	35.97	20.13	124.14	0.06	0.06	859	13443		
			14:45:14	35.92	20.13	124.18	0.57	0.13	859	6419		
			14:45:15	35.94	20.13	124.20	0.54	0.10	859	8440		
			14:45:16	35.87	20.13	124.13	0.22	0.22	859	3926		
			14:45:17	35.87	20.13	124.13	0.71	0.25	859	3370		
			14:45:18	35.88	20.12	124.18	0.14	0.14	859	6075	4457	Sporatic traces of dye plume at 36 ft
			14:45:19	35.91	20.12	124.20	0.02	0.02	859	42950		
			14:45:20	35.90	20.12	124.63	0.17	0.17	859	4942		
			14:45:21	35.87	20.13	124.31	0.09	0.09	859	9663		
			14:45:22	35.90	20.12	124.29	0.34	0.34	859	2549		
			14:45:23	35.90	20.13	124.22	0.15	0.15	859	5788		
			14:45:24	35.88	20.13	124.15	0.18	0.18	859	4681	4340	Sporatic traces of dye plume at 36 ft
			14:45:25	35.94	20.13	124.11	0.09	0.09	859	9896		
			14:45:26	35.91	20.13	124.09	0.09	0.09	859	9988		
			14:45:27	35.92	20.14	124.13	0.02	0.02	859	49368		
			14:45:28	35.94	20.13	124.13	0.02	0.02	859	49942		



**TABLE D-12**

Profile PRO-09 on September 21, 2022 (1435-1451 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							19	44	56	3230		
			14:45:29	35.88	20.13	124.18	0.02	0.02	859	49653		
			14:45:30	35.94	20.13	124.15	0.19	0.19	859	4446		
			14:45:31	35.92	20.13	124.18	0.23	0.23	859	3680		
			14:45:32	35.86	20.13	124.15	0.06	0.06	859	13855		
			14:45:33	35.95	20.13	124.13	0.03	0.03	859	29218		
			14:45:34	35.92	20.13	124.22	0.23	0.23	859	3746		
			14:45:35	35.91	20.13	124.13	0.08	0.08	859	11229		
			14:45:36	35.90	20.13	124.11	0.02	0.02	859	39585		
			14:45:37	35.91	20.13	124.18	0.03	0.03	859	26350		
			14:45:38	35.91	20.13	124.18	0.05	0.05	859	18473		
			14:45:39	35.91	20.13	124.18	0.03	0.03	859	29020		
			14:45:40	35.86	20.12	124.22	0.03	0.03	859	26928		
			14:45:41	35.90	20.12	124.15	0.06	0.06	859	13318		
			14:45:42	35.89	20.12	124.20	0.02	0.02	859	46940		
			14:45:43	35.89	20.12	124.20	0.02	0.02	859	43604		
			14:45:44	35.88	20.12	124.18	0.07	0.07	859	12378		
			14:45:45	35.91	20.12	124.15	0.71	0.26	859	3349		
			14:45:46	35.98	20.12	124.20	0.38	0.38	859	2258		
			14:45:47	35.92	20.12	124.20	0.58	0.14	859	6062		
			14:45:48	35.89	20.12	124.15	0.08	0.08	859	10166		
			14:45:49	35.95	20.12	124.22	0.12	0.12	859	7418		
			14:45:50	35.86	20.12	124.18	0.27	0.27	859	3196		
			14:45:51	35.92	20.12	124.18	0.20	0.20	859	4323		
			14:45:52	35.91	20.12	124.20	0.22	0.22	859	3971	3830	Sporatic traces of dye plume at 36 ft
			14:45:53	35.95	20.12	124.23	0.02	0.02	859	48258		
			14:45:54	35.89	20.12	124.20	0.14	0.14	859	6153		
			14:45:55	35.93	20.12	124.20	0.02	0.02	859	49086		
			14:45:56	35.95	20.12	124.15	0.03	0.03	859	30035		
			14:45:57	35.93	20.12	124.20	0.02	0.02	859	45936		
			14:45:58	35.96	20.12	124.18	0.12	0.12	859	6911		
			14:45:59	35.94	20.12	124.20	0.02	0.02	859	46432		
			14:46:00	35.90	20.12	124.20	0.18	0.18	859	4856		
			14:46:01	35.90	20.13	124.74	0.16	0.16	859	5369		
			14:46:02	35.95	20.13	125.08	0.10	0.10	859	8712		
			14:46:03	35.88	20.13	124.29	0.41	0.41	859	2113		
			14:46:04	35.91	20.13	124.15	0.07	0.07	859	11947		
			14:46:05	35.94	20.13	124.23	0.05	0.05	859	19089		
			14:46:06	35.93	20.13	125.26	0.46	0.04	859	22243		
			14:46:07	35.91	20.14	126.57	0.41	0.41	859	2115		

**TABLE D-12**

Profile PRO-09 on September 21, 2022 (1435-1451 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
3230												
Profile Average Dilution												
56												
Plume Average Dilution Detected												
44												
Minimum Average Dilution in Profile												
			14:46:08	35.89	20.13	124.47	0.08	0.08	859	10325		
			14:46:09	35.91	20.12	124.28	0.18	0.18	859	4829		
			14:46:10	35.89	20.12	124.19	0.08	0.08	859	10985		
			14:46:11	35.91	20.12	124.20	0.15	0.15	859	5738		
			14:46:12	35.91	20.13	124.11	0.08	0.08	859	11199		
			14:46:13	35.92	20.13	124.07	0.53	0.10	859	9012		
			14:46:14	35.94	20.13	124.09	0.04	0.04	859	22665		
			14:46:15	35.88	20.13	125.43	0.59	0.15	859	5674		
			14:46:16	35.94	20.15	134.04	5.17	4.26	859	202		
			14:46:17	35.88	20.19	140.05	27.02	23.86	859	36		
			14:46:18	35.92	20.19	137.22	47.76	42.47	859	20		
			14:46:19	35.86	20.18	136.21	50.00	44.48	859	19		
			14:46:20	35.90	20.18	134.67	42.10	37.39	859	23	44	Diffuser port plume at 36 ft
			14:46:21	35.93	20.16	129.59	14.70	12.81	859	67		
			14:46:22	35.87	20.14	126.48	10.19	8.76	859	98		
			14:46:23	35.93	20.13	125.29	8.51	7.26	859	118		
			14:46:24	35.88	20.12	124.49	5.97	4.98	859	173		
			14:46:25	35.91	20.12	124.40	6.11	5.10	859	168		
			14:46:26	35.85	20.12	124.72	6.58	5.53	859	155		
			14:46:27	35.91	20.12	124.30	6.89	5.80	859	148		
			14:46:28	35.94	20.13	126.07	6.83	5.75	859	149		
			14:46:29	35.91	20.13	124.65	7.88	6.70	859	128		
			14:46:30	35.91	20.13	124.24	8.47	7.22	859	119		
			14:46:31	35.93	20.13	124.13	8.82	7.53	859	114		
			14:46:32	35.95	20.13	124.13	8.46	7.21	859	119		
			14:46:33	35.91	20.13	124.07	8.04	6.84	859	126		
			14:46:34	35.92	20.13	124.11	6.16	5.15	859	167		
			14:46:35	36.00	20.13	124.15	3.74	2.97	859	289		
			14:46:36	36.05	20.12	124.18	2.16	1.56	859	549		
			14:46:37	36.05	20.12	124.15	1.28	0.77	859	1119		
			14:46:38	36.07	20.13	124.15	0.62	0.17	859	4916		
			14:46:39	36.06	20.13	124.10	1.23	0.73	859	1181		
			14:46:40	36.05	20.14	124.09	1.01	0.53	859	1620		
			14:46:41	36.07	20.14	124.11	1.42	0.90	859	957		
			14:46:42	36.04	20.14	124.05	2.17	1.57	859	549		
			14:46:43	36.05	20.14	123.99	1.71	1.16	859	743		
			14:46:44	36.06	20.14	124.05	2.04	1.45	859	592		
			14:46:45	36.06	20.14	124.03	1.39	0.87	859	984		
			14:46:46	36.07	20.14	124.05	1.94	1.37	859	629		

**TABLE D-12**

Profile PRO-09 on September 21, 2022 (1435-1451 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							19	44	56	3230	Instantaneous Minimum Dilution in Profile	
			14:46:47	36.08	20.14	124.09	1.40	0.88	859	974		
			14:46:48	36.05	20.14	124.08	1.64	1.09	859	785		
			14:46:49	36.03	20.14	124.07	1.82	1.26	859	683		
			14:46:50	36.06	20.14	124.11	1.62	1.07	859	802		
			14:46:51	36.05	20.13	124.09	1.51	0.98	859	877		
			14:46:52	36.07	20.13	124.11	1.43	0.90	859	953		
			14:46:53	36.07	20.13	124.13	1.25	0.75	859	1152		
			14:46:54	36.03	20.13	124.13	0.99	0.51	859	1690		
			14:46:55	36.04	20.13	124.09	1.19	0.69	859	1244		
			14:46:56	36.05	20.13	124.20	0.70	0.25	859	3403		
			14:46:57	36.08	20.13	124.13	0.74	0.29	859	2976		
			14:46:58	36.05	20.13	124.14	0.28	0.28	859	3080		
			14:46:59	36.07	20.13	124.15	0.26	0.26	859	3285		
			14:47:00	36.06	20.13	124.11	0.17	0.17	859	5107		
			14:47:01	36.07	20.13	124.29	0.43	0.01	859	126922		
			14:47:02	36.05	20.13	124.42	1.19	0.69	859	1244		
			14:47:03	36.04	20.13	126.68	0.20	0.20	859	4236		
			14:47:04	36.05	20.15	129.82	0.77	0.31	859	2759		
			14:47:05	36.07	20.16	133.03	0.70	0.25	859	3480		
			14:47:06	36.04	20.16	133.23	0.46	0.03	859	25367		
			14:47:07	36.05	20.17	132.48	0.46	0.04	859	23441		
			14:47:08	36.03	20.16	133.41	1.40	0.88	859	977		
			14:47:09	36.07	20.17	136.40	3.31	2.59	859	332		
			14:47:10	36.03	20.18	135.73	5.79	4.82	859	178		
			14:47:11	36.08	20.17	133.58	7.97	6.78	859	127		
			14:47:12	36.04	20.17	134.39	6.70	5.64	859	152		
			14:47:13	36.09	20.18	137.58	10.39	8.94	859	96		
			14:47:14	36.06	20.19	139.36	9.63	8.26	859	104		
			14:47:15	36.03	20.19	136.07	8.57	7.31	859	118		
			14:47:16	36.11	20.18	133.29	6.92	5.83	859	147		
			14:47:17	36.05	20.17	134.39	8.45	7.20	859	119		
			14:47:18	36.03	20.18	136.52	11.40	9.85	859	87		
			14:47:19	36.07	20.19	139.58	29.48	26.07	859	33		
			14:47:20	35.97	20.20	141.64	39.40	34.97	859	25		
			14:47:21	36.03	20.20	139.79	47.63	42.36	859	20	51	Diffuser port plume at 36 ft
			14:47:22	35.97	20.17	132.18	35.71	31.66	859	27		
			14:47:23	36.10	20.17	132.48	22.10	19.45	859	44		
			14:47:24	36.07	20.15	126.90	8.44	7.20	859	119		
			14:47:25	36.05	20.14	125.63	9.70	8.32	859	103		

**TABLE D-12**

Profile PRO-09 on September 21, 2022 (1435-1451 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
3230												
Profile Average Dilution												
56												
Plume Average Dilution Detected												
44												
Minimum Average Dilution in Profile												
			14:47:26	36.10	20.13	124.59	8.19	6.97	859	123		Diffuser port plume at 36 ft
			14:47:27	36.10	20.13	124.55	5.25	4.33	859	198		
			14:47:28	36.08	20.13	124.81	8.83	7.54	859	114		
			14:47:29	36.02	20.13	124.39	14.31	12.46	859	69		
			14:47:30	36.09	20.13	124.38	15.95	13.93	859	62		
			14:47:31	36.07	20.13	124.27	15.89	13.88	859	62		
			14:47:32	36.04	20.13	124.15	17.55	15.37	859	56		
			14:47:33	36.05	20.13	124.18	19.07	16.73	859	51	63	
			14:47:34	36.06	20.13	124.18	18.91	16.59	859	52		
			14:47:35	36.07	20.13	125.16	16.37	14.31	859	60		
			14:47:36	36.01	20.14	128.37	13.74	11.95	859	72		
			14:47:37	36.05	20.15	130.59	11.86	10.26	859	84		
			14:47:38	36.06	20.15	128.66	9.87	8.48	859	101		
			14:47:39	36.04	20.15	128.37	7.53	6.38	859	135		
			14:47:40	35.99	20.14	125.83	7.18	6.06	859	142		
			14:47:41	36.03	20.13	124.76	5.87	4.88	859	176		
			14:47:42	36.01	20.13	124.57	4.49	3.65	859	235		
			14:47:43	36.06	20.13	124.37	3.86	3.08	859	279		
			14:47:44	36.03	20.13	124.34	3.49	2.75	859	312		
			14:47:45	36.08	20.13	124.46	3.14	2.44	859	352		
			14:47:46	36.05	20.13	124.32	1.97	1.39	859	616		
			14:47:47	36.06	20.13	124.26	2.09	1.49	859	575		
			14:47:48	36.01	20.13	125.53	2.51	1.88	859	458		
			14:47:49	36.05	20.14	129.58	2.04	1.45	859	592		
			14:47:50	36.11	20.15	129.51	2.98	2.30	859	374		
			14:47:51	36.06	20.15	129.52	3.34	2.62	859	328		
			14:47:52	36.07	20.16	130.80	4.24	3.43	859	251		
			14:47:53	36.06	20.15	129.82	5.20	4.29	859	200		
			14:47:54	36.14	20.15	127.94	4.94	4.06	859	212		
			14:47:55	36.07	20.14	125.55	3.99	3.21	859	268		
			14:47:56	36.06	20.13	125.06	3.58	2.84	859	303		
			14:47:57	36.04	20.13	124.44	3.77	3.00	859	286		
			14:47:58	36.07	20.13	125.26	2.53	1.89	859	455		
			14:47:59	36.07	20.13	125.71	2.60	1.96	859	439		
			14:48:00	36.01	20.13	126.03	2.84	2.17	859	396		
			14:48:01	36.06	20.14	126.93	3.57	2.83	859	304		
			14:48:02	35.99	20.15	132.16	14.24	12.40	859	69		
			14:48:03	36.03	20.16	132.88	33.20	29.40	859	29		
			14:48:04	35.91	20.16	129.87	43.95	39.05	859	22	45	Diffuser port plume at 36 ft

**TABLE D-12**

Profile PRO-09 on September 21, 2022 (1435-1451 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							19	44	56	3230		
			14:48:05	35.83	20.15	130.64	38.90	34.52	859	25		
			14:48:06	35.91	20.15	127.76	12.50	10.84	859	79		
			14:48:07	35.89	20.15	126.62	5.28	4.36	859	197		
			14:48:08	35.95	20.15	125.42	2.65	2.00	859	430		
			14:48:09	35.91	20.14	124.42	1.70	1.14	859	752		
			14:48:10	35.94	20.14	124.27	1.59	1.05	859	819		
			14:48:11	35.96	20.14	124.15	2.46	1.83	859	470		
			14:48:12	36.43	20.14	124.01	0.65	0.20	859	4222		
			14:48:13	36.67	20.14	124.07	0.13	0.13	859	6845		
			14:48:14	38.49	20.14	125.20	0.23	0.23	859	3738		
			14:48:15	41.01	20.13	128.98	12.89	11.19	859	77		
			14:48:16	41.66	20.13	128.55	13.54	11.77	859	73		
			14:48:17	41.62	20.13	128.57	16.20	14.15	859	61		
			14:48:18	41.74	20.14	129.36	16.88	14.77	859	58		
			14:48:19	41.67	20.14	129.95	16.68	14.59	859	59		
			14:48:20	41.76	20.14	130.18	14.70	12.81	859	67		
			14:48:21	41.74	20.14	130.18	16.32	14.26	859	60		
			14:48:22	41.77	20.14	130.41	15.35	13.39	859	64		
			14:48:23	41.69	20.14	130.07	16.13	14.09	859	61		
			14:48:24	41.71	20.14	130.01	16.37	14.31	859	60		
			14:48:25	41.70	20.14	130.06	15.02	13.09	859	66	63	Diffuser port plume at 42 ft
			14:48:26	41.65	20.14	130.08	14.56	12.68	859	68		
			14:48:27	41.68	20.14	130.20	16.27	14.21	859	60		
			14:48:28	41.72	20.14	130.16	16.53	14.45	859	59		
			14:48:29	41.69	20.14	130.02	17.11	14.97	859	57		
			14:48:30	41.63	20.14	129.58	18.02	15.79	859	54		
			14:48:31	41.62	20.14	129.72	18.78	16.47	859	52		
			14:48:32	41.67	20.14	130.19	19.25	16.89	859	51		
			14:48:33	41.62	20.14	130.40	19.02	16.69	859	51		
			14:48:34	41.69	20.14	130.39	18.36	16.10	859	53		
			14:48:35	41.62	20.14	130.11	17.74	15.54	859	55		
			14:48:36	41.77	20.14	129.96	17.28	15.12	859	57		
			14:48:37	41.60	20.14	129.16	16.39	14.33	859	60		
			14:48:38	41.63	20.13	129.14	15.38	13.42	859	64		
			14:48:39	41.59	20.13	129.24	14.39	12.53	859	69		
			14:48:40	41.69	20.13	129.30	15.52	13.55	859	63		
			14:48:41	41.59	20.13	129.07	14.70	12.81	859	67		
			14:48:42	41.67	20.13	129.08	15.16	13.23	859	65		
			14:48:43	41.57	20.13	128.63	13.44	11.68	859	74		

**TABLE D-12**

Profile PRO-09 on September 21, 2022 (1435-1451 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:48:44	41.58	20.13	128.64	13.25	11.51	859	75		
			14:48:45	41.56	20.13	128.67	14.13	12.30	859	70		
			14:48:46	41.60	20.13	128.48	13.91	12.10	859	71		
			14:48:47	41.57	20.13	127.61	13.74	11.95	859	72		
			14:48:48	41.62	20.12	126.81	8.47	7.22	859	119		
			14:48:49	41.57	20.12	126.05	6.81	5.73	859	150		
			14:48:50	41.60	20.11	125.39	2.77	2.11	859	408		
			14:48:51	41.54	20.11	125.06	1.70	1.15	859	749		
			14:48:52	41.55	20.11	124.98	2.17	1.57	859	547		
			14:48:53	41.60	20.11	125.86	2.27	1.66	859	517		
			14:48:54	41.58	20.12	127.03	3.84	3.07	859	280		
			14:48:55	41.59	20.12	128.09	5.72	4.75	859	181		
			14:48:56	41.60	20.13	129.39	7.99	6.79	859	127		
			14:48:57	41.59	20.14	130.37	10.54	9.08	859	95		
			14:48:58	41.56	20.14	130.81	11.30	9.76	859	88		
			14:48:59	41.62	20.14	130.85	13.13	11.40	859	75		
			14:49:00	41.69	20.14	130.20	17.37	15.21	859	56		
			14:49:01	41.67	20.14	129.81	17.98	15.76	859	55		
			14:49:02	41.68	20.13	129.42	18.55	16.26	859	53	71	Diffuser port plume at 42 ft
			14:49:03	41.62	20.13	129.17	17.72	15.52	859	55		
			14:49:04	41.65	20.13	129.75	16.97	14.85	859	58		
			14:49:05	41.62	20.13	129.43	15.22	13.28	859	65		
			14:49:06	41.62	20.13	129.41	13.29	11.54	859	74		
			14:49:07	41.68	20.13	129.58	13.21	11.47	859	75		
			14:49:08	41.61	20.14	129.85	9.85	8.46	859	102		
			14:49:09	41.62	20.14	130.04	7.77	6.60	859	130		
			14:49:10	41.61	20.14	129.53	8.32	7.08	859	121		
			14:49:11	41.66	20.13	128.88	9.42	8.07	859	106		
			14:49:12	41.77	20.13	128.74	11.57	10.00	859	86		
			14:49:13	41.76	20.13	128.80	13.06	11.34	859	76		
			14:49:14	41.77	20.13	129.77	13.08	11.35	859	76		
			14:49:15	41.74	20.14	129.21	11.95	10.34	859	83		
			14:49:16	41.78	20.13	128.16	11.41	9.86	859	87		
			14:49:17	41.72	20.13	128.26	11.06	9.55	859	90		
			14:49:18	41.70	20.13	128.09	11.46	9.90	859	87		
			14:49:19	41.60	20.13	127.93	11.75	10.16	859	85		
			14:49:20	41.58	20.13	128.42	12.12	10.49	859	82		
			14:49:21	41.61	20.13	128.88	12.54	10.87	859	79		
			14:49:22	41.62	20.13	129.63	15.62	13.64	859	63		

**TABLE D-12**

Profile PRO-09 on September 21, 2022 (1435-1451 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

19	Instantaneous Minimum Dilution in Profile
44	Minimum Average Dilution in Profile
56	Plume Average Dilution Detected
3230	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:49:23	41.65	20.14	129.92	17.82	15.61	859	55	58	Diffuser port plume at 42 ft
			14:49:24	41.73	20.14	129.88	18.56	16.27	859	53		
			14:49:25	41.73	20.14	130.04	18.56	16.27	859	53		
			14:49:26	41.76	20.14	130.31	18.07	15.83	859	54		
			14:49:27	41.74	20.14	130.12	18.54	16.26	859	53		
			14:49:28	41.70	20.14	129.79	18.40	16.13	859	53		
			14:49:29	41.76	20.14	129.57	17.88	15.66	859	55		
			14:49:30	41.78	20.13	129.41	17.58	15.40	859	56		
			14:49:31	41.72	20.13	129.49	17.18	15.04	859	57		
			14:49:32	41.73	20.13	129.62	16.04	14.01	859	61		
			14:49:33	41.77	20.14	129.66	16.23	14.18	859	61		
			14:49:34	41.63	20.14	129.56	17.18	15.04	859	57		
			14:49:35	41.74	20.13	129.53	15.62	13.63	859	63		
			14:49:36	41.67	20.13	129.34	14.75	12.86	859	67		
			14:49:37	41.75	20.13	129.80	13.25	11.51	859	75		
			14:49:38	41.75	20.14	130.98	19.05	16.71	859	51		
			14:49:39	41.71	20.15	131.51	24.80	21.87	859	39		
			14:49:40	41.69	20.15	131.54	25.11	22.15	859	39		
			14:49:41	41.72	20.15	132.52	22.97	20.23	859	42		
			14:49:42	41.74	20.15	131.60	19.71	17.31	859	50		
			14:49:43	41.64	20.14	129.31	17.81	15.60	859	55		
			14:49:44	41.73	20.14	130.19	17.89	15.67	859	55		
			14:49:45	41.62	20.14	130.92	16.84	14.73	859	58		
			14:49:46	41.72	20.14	131.46	18.61	16.31	859	53		
			14:49:47	41.63	20.15	130.99	18.67	16.37	859	52		
			14:49:48	41.66	20.14	129.76	18.14	15.90	859	54		
			14:49:49	41.62	20.14	129.63	17.07	14.93	859	58		
			14:49:50	41.61	20.13	126.75	17.61	15.42	859	56		
			14:49:51	41.67	20.13	127.58	14.50	12.64	859	68		
			14:49:52	41.66	20.13	130.97	15.43	13.47	859	64		
			14:49:53	41.65	20.14	130.59	16.62	14.53	859	59		
			14:49:54	41.61	20.16	134.81	16.87	14.76	859	58		
			14:49:55	41.61	20.16	134.85	19.03	16.69	859	51		
			14:49:56	41.62	20.17	137.57	23.11	20.35	859	42		
			14:49:57	41.63	20.18	137.51	20.70	18.20	859	47		
			14:49:58	41.64	20.17	134.43	21.15	18.60	859	46		
			14:49:59	41.63	20.17	136.45	20.14	17.69	859	49		
			14:50:00	41.65	20.18	139.52	24.01	21.16	859	41		
			14:50:01	41.66	20.19	140.41	26.25	23.17	859	37		

**TABLE D-12**

Profile PRO-09 on September 21, 2022 (1435-1451 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
										19	44	
			14:50:02	41.64	20.18	136.47	23.09	20.34	859	42		
			14:50:03	41.61	20.17	136.00	20.07	17.63	859	49		
			14:50:04	41.63	20.16	133.32	20.02	17.58	859	49		
			14:50:05	41.69	20.15	132.56	20.61	18.12	859	47		
			14:50:06	41.62	20.15	131.58	21.64	19.03	859	45		
			14:50:07	41.73	20.15	132.50	22.73	20.02	859	43		
			14:50:08	41.70	20.15	131.50	20.87	18.35	859	47		
			14:50:09	41.68	20.15	130.66	23.41	20.63	859	42		
			14:50:10	41.63	20.15	130.91	26.51	23.41	859	37		
			14:50:11	41.69	20.15	129.80	26.06	23.01	859	37		
			14:50:12	41.63	20.14	128.57	25.25	22.28	859	39		
			14:50:13	41.66	20.14	129.10	24.65	21.74	859	40		
			14:50:14	41.65	20.14	128.17	22.96	20.22	859	42		
			14:50:15	41.68	20.13	128.80	23.10	20.34	859	42		
			14:50:16	41.62	20.14	129.94	22.34	19.67	859	44		
			14:50:17	41.78	20.14	130.12	20.92	18.39	859	47		
			14:50:18	41.72	20.14	129.94	21.60	19.00	859	45		
			14:50:19	41.76	20.14	127.36	22.03	19.38	859	44		
			14:50:20	41.73	20.13	127.63	19.53	17.14	859	50		
			14:50:21	41.73	20.13	126.95	16.42	14.35	859	60		
			14:50:22	41.69	20.13	125.91	15.11	13.18	859	65		
			14:50:23	41.71	20.13	127.25	16.55	14.47	859	59		
			14:50:24	41.70	20.13	128.50	18.56	16.27	859	53		
			14:50:25	41.73	20.13	128.27	18.49	16.21	859	53		
			14:50:26	41.71	20.13	128.90	16.30	14.25	859	60		
			14:50:27	41.71	20.14	129.30	14.86	12.95	859	66		
			14:50:28	41.69	20.14	128.89	11.81	10.22	859	84		
			14:50:29	41.71	20.13	128.27	13.68	11.89	859	72		
			14:50:30	41.69	20.13	129.16	13.25	11.51	859	75		
			14:50:31	41.72	20.14	129.26	12.11	10.49	859	82		
			14:50:32	41.71	20.14	129.55	13.50	11.73	859	73		
			14:50:33	41.72	20.14	129.43	14.63	12.74	859	67		
			14:50:34	41.75	20.14	129.34	14.70	12.81	859	67		
			14:50:35	41.70	20.14	129.24	14.86	12.95	859	66		
			14:50:36	41.68	20.14	129.02	14.30	12.45	859	69		
			14:50:37	41.67	20.14	128.93	14.46	12.59	859	68		
			14:50:38	41.75	20.14	129.07	14.91	13.00	859	66		
			14:50:39	41.70	20.14	128.79	15.07	13.15	859	65		
			14:50:40	41.72	20.15	129.16	14.51	12.64	859	68		



**TABLE D-12**

Profile PRO-09 on September 21, 2022 (1435-1451 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

19	Instantaneous Minimum Dilution in Profile
44	Minimum Average Dilution in Profile
56	Plume Average Dilution Detected
3230	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:50:41	41.69	20.15	127.92	14.41	12.55	859	68		
			14:50:42	41.71	20.15	128.70	15.07	13.14	859	65		
			14:50:43	41.67	20.15	130.30	14.70	12.81	859	67		
			14:50:44	41.67	20.15	129.75	15.24	13.30	859	65		
			14:50:45	41.68	20.15	130.03	16.50	14.42	859	60		
			14:50:46	41.59	20.16	129.92	16.67	14.58	859	59		
			14:50:47	41.64	20.15	130.25	19.84	17.42	859	49		
			14:50:48	41.63	20.16	131.23	21.03	18.49	859	46		
			14:50:49	41.62	20.16	129.94	20.39	17.92	859	48		
			14:50:50	41.63	20.16	131.07	17.42	15.25	859	56		
			14:50:51	41.61	20.17	131.60	17.30	15.15	859	57		
			14:50:52	41.65	20.17	131.64	17.98	15.75	859	55		
			14:50:53	41.62	20.16	130.44	18.24	15.98	859	54		
			14:50:54	41.66	20.15	130.31	18.08	15.85	859	54		
			14:50:55	41.70	20.15	128.57	17.31	15.16	859	57		
			14:50:56	41.64	20.14	129.10	15.63	13.64	859	63		
			14:50:57	41.65	20.15	129.80	17.11	14.97	859	57		
			14:50:58	41.65	20.15	130.16	19.41	17.04	859	50		
			14:50:59	41.65	20.15	131.10	19.27	16.91	859	51		
			14:51:00	41.61	20.16	132.55	17.13	14.99	859	57		
			14:51:01	41.66	20.16	134.74	17.19	15.04	859	57		
			14:51:02	41.63	20.18	138.02	16.90	14.78	859	58		
			14:51:03	41.63	20.18	136.98	17.37	15.20	859	57		
			14:51:04	41.73	20.18	136.95	18.96	16.64	859	52		

**TABLE D-13**

Profile PRO-10 on September 21, 2022 (1538-1550 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>79</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>151</b>	<b>Minimum Average Dilution in Profile</b>
<b>182</b>	<b>Plume Average Dilution Detected</b>
<b>8646</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-10 (South Mixing Zone Boundary - 242 ft from Diffuser and E of mid-point)	48 ft	0.16 m/sec 173 deg. (mag.) Flood tide	15:38:16	2.02	20.39	124.59	0.02	0.02	838	44339	2498	No dye plume detected near surface
			15:38:17	2.03	20.39	124.65	0.02	0.02	838	43874		
			15:38:18	2.11	20.39	124.63	0.02	0.02	838	41485		
			15:38:19	2.05	20.39	124.80	0.02	0.02	838	43874		
			15:38:20	2.11	20.39	124.63	0.34	0.34	838	2498		
			15:38:21	2.02	20.38	124.55	0.02	0.02	838	44813		
			15:38:22	2.04	20.38	124.94	0.02	0.02	838	43874		
			15:38:23	1.95	20.39	124.70	0.02	0.02	838	42755		
			15:38:24	1.97	20.38	124.73	0.02	0.02	838	42538		
			15:38:25	2.01	20.38	124.59	0.02	0.02	838	44339		
			15:38:26	2.03	20.38	124.70	0.02	0.02	838	49006		
			15:38:27	2.06	20.38	124.89	0.02	0.02	838	39905		
			15:38:28	2.14	20.38	124.88	0.02	0.02	838	42538		
			15:38:29	2.17	20.43	125.09	0.02	0.02	838	45792		
			15:38:30	2.18	20.56	125.18	0.02	0.02	838	42538		
			15:38:31	2.21	20.57	125.18	0.02	0.02	838	41078		
			15:38:32	2.14	20.55	125.22	0.02	0.02	838	44813		
			15:38:33	2.16	20.54	125.30	0.02	0.02	838	42111		
			15:38:34	2.18	20.56	125.25	0.02	0.02	838	41078		
			15:38:35	2.17	20.57	125.28	0.02	0.02	838	44813		
			15:38:36	2.10	20.57	125.30	0.02	0.02	838	41485		
			15:38:37	2.05	20.57	125.26	0.02	0.02	838	42538		
			15:38:38	2.07	20.56	125.07	0.02	0.02	838	47614		
			15:38:39	2.04	20.54	125.18	0.02	0.02	838	46816		
			15:38:40	2.08	20.53	125.24	0.02	0.02	838	47345		
			15:38:41	2.07	20.53	125.18	0.02	0.02	838	44105		
			15:38:42	1.99	20.52	125.11	0.02	0.02	838	42974		
			15:38:43	2.04	20.51	125.24	0.02	0.02	838	50482		
			15:38:44	2.04	20.51	125.24	0.02	0.02	838	44339		
			15:38:45	2.06	20.50	125.09	0.02	0.02	838	42974		
			15:38:46	2.03	20.48	125.22	0.02	0.02	838	43420		
			15:38:47	2.07	20.48	125.11	0.02	0.02	838	43874		
			15:38:48	2.03	20.48	125.16	0.17	0.17	838	4991		
15:38:49	2.05	20.48	125.24	0.02	0.02	838	45297					
15:38:50	2.05	20.48	125.16	0.02	0.02	838	42974					
15:38:51	2.07	20.43	124.44	0.02	0.02	838	44339					
15:38:52	2.09	20.40	124.44	0.02	0.02	838	43196					
15:38:53	2.03	20.40	124.46	0.02	0.02	838	42538					

**TABLE D-13**

Profile PRO-10 on September 21, 2022 (1538-1550 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

79	Instantaneous Minimum Dilution in Profile
151	Minimum Average Dilution in Profile
182	Plume Average Dilution Detected
8646	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:38:54	2.07	20.41	124.46	0.02	0.02	838	49294		
			15:38:55	2.04	20.40	124.44	0.02	0.02	838	43420		
			15:38:56	2.05	20.39	124.44	0.02	0.02	838	48161		
			15:38:57	2.02	20.39	124.44	0.02	0.02	838	45792		
			15:38:58	2.06	20.39	124.41	0.02	0.02	838	44339		
			15:38:59	2.07	20.36	124.27	0.02	0.02	838	43420		
			15:39:00	2.04	20.35	124.32	0.02	0.02	838	46816		
			15:39:01	2.02	20.36	124.34	0.02	0.02	838	42974		
			15:39:02	2.03	20.36	124.27	0.02	0.02	838	46298		
			15:39:03	2.06	20.36	124.30	0.30	0.30	838	2799		
			15:39:04	2.04	20.36	124.34	0.02	0.02	838	42755		
			15:39:05	2.03	20.37	124.32	0.02	0.02	838	44813		
			15:39:06	2.04	20.37	124.32	0.02	0.02	838	44339		
			15:39:07	2.02	20.37	124.34	0.02	0.02	838	45297		
			15:39:08	2.05	20.37	124.32	0.02	0.02	838	45297		
			15:39:09	2.03	20.36	124.30	0.02	0.02	838	45297		
			15:39:10	2.04	20.36	124.29	0.02	0.02	838	45297		
			15:39:11	2.03	20.35	124.32	0.02	0.02	838	45297		
			15:39:12	2.04	20.35	124.23	0.02	0.02	838	45297		
			15:39:13	2.05	20.34	124.29	0.02	0.02	838	44339		
			15:39:14	2.05	20.34	124.32	0.02	0.02	838	45297		
			15:39:15	2.03	20.35	124.32	0.02	0.02	838	43874		
			15:39:16	2.07	20.35	124.27	0.02	0.02	838	44339		
			15:39:17	2.02	20.35	124.30	0.02	0.02	838	40288		
			15:39:18	2.06	20.34	124.29	0.02	0.02	838	44813		
			15:39:19	2.05	20.35	124.25	0.02	0.02	838	45792		
			15:39:20	2.05	20.35	124.30	0.02	0.02	838	42538		
			15:39:21	2.04	20.35	124.30	0.02	0.02	838	49006		
			15:39:22	2.07	20.35	124.30	0.02	0.02	838	46556		
			15:39:23	2.07	20.36	124.36	0.02	0.02	838	45792		
			15:39:24	2.08	20.37	124.34	0.02	0.02	838	43420		
			15:39:25	2.35	20.37	124.32	0.02	0.02	838	47079		
			15:39:26	2.43	20.38	124.40	0.02	0.02	838	45792		
			15:39:27	2.44	20.38	124.38	0.02	0.02	838	45297		
			15:39:28	2.29	20.38	124.40	0.02	0.02	838	46298		
			15:39:29	2.36	20.37	124.38	0.02	0.02	838	46298		
			15:39:30	2.35	20.37	124.38	0.02	0.02	838	43874		
			15:39:31	2.49	20.36	124.30	0.02	0.02	838	45297		

**TABLE D-13**

Profile PRO-10 on September 21, 2022 (1538-1550 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>79</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>151</b>	<b>Minimum Average Dilution in Profile</b>
<b>182</b>	<b>Plume Average Dilution Detected</b>
<b>8646</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:39:32	3.11	20.37	124.42	0.02	0.02	838	34917		
			15:39:33	5.62	20.37	124.31	0.02	0.02	838	46816		
			15:39:34	7.00	20.34	124.24	0.02	0.02	838	43874		
			15:39:35	7.19	20.33	124.22	0.02	0.02	838	44339	44339	No dye plume detected at 7 ft
			15:39:36	7.30	20.32	124.22	0.02	0.02	838	47345		
			15:39:37	7.27	20.32	124.24	0.02	0.02	838	47614		
			15:39:38	7.29	20.32	124.20	0.02	0.02	838	42323		
			15:39:39	7.34	20.31	124.18	0.02	0.02	838	43420		
			15:39:40	7.31	20.30	124.18	0.02	0.02	838	45792		
			15:39:41	7.25	20.30	124.18	0.02	0.02	838	45297		
			15:39:42	7.30	20.31	124.15	0.02	0.02	838	45792		
			15:39:43	7.41	20.31	124.22	0.02	0.02	838	42538		
			15:39:44	7.33	20.32	124.20	0.02	0.02	838	44813		
			15:39:45	7.34	20.32	124.18	0.02	0.02	838	51728		
			15:39:46	7.30	20.31	124.11	0.02	0.02	838	44339		
			15:39:47	7.35	20.30	124.13	0.02	0.02	838	43874		
			15:39:48	7.35	20.29	124.15	0.02	0.02	838	43874		
			15:39:49	7.35	20.29	124.11	0.02	0.02	838	47345		
			15:39:50	7.34	20.30	124.18	0.02	0.02	838	43196		
			15:39:51	7.31	20.30	124.18	0.02	0.02	838	46556		
			15:39:52	7.34	20.31	124.15	0.02	0.02	838	49881		
			15:39:53	7.31	20.31	124.20	0.02	0.02	838	45297		
			15:39:54	7.30	20.31	124.18	0.02	0.02	838	48161		
			15:39:55	7.30	20.32	124.24	0.02	0.02	838	41485		
			15:39:56	7.31	20.32	124.20	0.02	0.02	838	48161		
			15:39:57	7.35	20.31	124.20	0.02	0.02	838	45792		
			15:39:58	7.35	20.31	124.20	0.02	0.02	838	44813		
			15:39:59	7.35	20.30	124.22	0.02	0.02	838	46298		
			15:40:00	7.38	20.30	124.13	0.02	0.02	838	42755		
			15:40:01	7.33	20.30	124.20	0.02	0.02	838	44339		
			15:40:02	7.35	20.29	124.22	0.02	0.02	838	43420		
			15:40:03	7.34	20.28	124.20	0.02	0.02	838	47079		
			15:40:04	7.34	20.28	124.22	0.02	0.02	838	48439		
			15:40:05	7.32	20.28	124.22	0.02	0.02	838	49881		
			15:40:06	7.32	20.28	124.20	0.02	0.02	838	48439		
			15:40:07	7.35	20.28	124.20	0.02	0.02	838	44813		
			15:40:08	7.34	20.28	124.18	0.02	0.02	838	45297		
			15:40:09	7.32	20.28	124.22	0.02	0.02	838	43420		

**TABLE D-13**

Profile PRO-10 on September 21, 2022 (1538-1550 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>79</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>151</b>	<b>Minimum Average Dilution in Profile</b>
<b>182</b>	<b>Plume Average Dilution Detected</b>
<b>8646</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:40:10	7.38	20.28	124.18	0.02	0.02	838	39528		
			15:40:11	7.37	20.28	124.20	0.02	0.02	838	46298		
			15:40:12	7.43	20.28	124.24	0.02	0.02	838	44813		
			15:40:13	7.39	20.28	124.20	0.02	0.02	838	53718		
			15:40:14	7.35	20.28	124.20	0.02	0.02	838	47614		
			15:40:15	7.30	20.29	124.18	0.02	0.02	838	48721		
			15:40:16	7.34	20.29	124.24	0.02	0.02	838	45792		
			15:40:17	7.31	20.29	124.13	0.02	0.02	838	49006		
			15:40:18	7.34	20.29	124.18	0.02	0.02	838	43874		
			15:40:19	7.35	20.29	124.20	0.02	0.02	838	43420		
			15:40:20	7.32	20.28	124.20	0.02	0.02	838	45792		
			15:40:21	7.33	20.28	124.20	0.02	0.02	838	43196		
			15:40:22	7.47	20.29	124.18	0.02	0.02	838	41078		
			15:40:23	7.53	20.30	124.20	0.02	0.02	838	44813		
			15:40:24	7.51	20.30	124.15	0.02	0.02	838	42974		
			15:40:25	7.72	20.30	124.18	0.02	0.02	838	45297		
			15:40:26	9.03	20.30	124.20	0.56	0.12	838	6978		
			15:40:27	12.09	20.27	124.21	0.21	0.21	838	3931		
			15:40:28	13.14	20.26	124.18	0.02	0.02	838	43874		
			15:40:29	13.33	20.26	124.15	0.02	0.02	838	45792		
			15:40:30	13.31	20.25	124.18	0.02	0.02	838	47345		
			15:40:31	13.32	20.26	124.13	0.02	0.02	838	46816	46816	No dye plume detected at 13 ft
			15:40:32	13.24	20.26	124.15	0.02	0.02	838	44339		
			15:40:33	13.24	20.26	124.11	0.02	0.02	838	47345		
			15:40:34	13.29	20.26	124.15	0.02	0.02	838	48161		
			15:40:35	13.25	20.26	124.13	0.02	0.02	838	49294		
			15:40:36	13.24	20.26	124.20	0.02	0.02	838	48161		
			15:40:37	13.29	20.26	124.18	0.02	0.02	838	49294		
			15:40:38	13.30	20.26	124.13	0.02	0.02	838	44813		
			15:40:39	13.28	20.27	124.18	0.02	0.02	838	44105		
			15:40:40	13.35	20.27	124.15	0.02	0.02	838	51728		
			15:40:41	13.31	20.27	124.18	0.02	0.02	838	42323		
			15:40:42	13.26	20.27	124.13	0.02	0.02	838	43420		
			15:40:43	13.30	20.27	124.20	0.02	0.02	838	45297		
			15:40:44	13.30	20.27	124.18	0.02	0.02	838	42538		
			15:40:45	13.26	20.27	124.15	0.02	0.02	838	42755		
			15:40:46	13.27	20.28	124.22	0.02	0.02	838	47614		
			15:40:47	13.29	20.28	124.22	0.02	0.02	838	49006		

**TABLE D-13**

Profile PRO-10 on September 21, 2022 (1538-1550 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>79</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>151</b>	<b>Minimum Average Dilution in Profile</b>
<b>182</b>	<b>Plume Average Dilution Detected</b>
<b>8646</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:40:48	13.27	20.29	124.22	0.02	0.02	838	41900		
			15:40:49	13.31	20.28	124.18	0.02	0.02	838	47614		
			15:40:50	13.28	20.28	124.22	0.02	0.02	838	45297		
			15:40:51	13.28	20.28	124.18	0.02	0.02	838	45297		
			15:40:52	13.26	20.27	124.20	0.02	0.02	838	43874		
			15:40:53	13.29	20.27	124.15	0.02	0.02	838	49294		
			15:40:54	13.28	20.27	124.15	0.02	0.02	838	43874		
			15:40:55	13.29	20.26	124.20	0.02	0.02	838	49006		
			15:40:56	13.28	20.26	124.15	0.02	0.02	838	47886		
			15:40:57	13.30	20.25	124.15	0.02	0.02	838	46556		
			15:40:58	13.25	20.25	124.15	0.02	0.02	838	44813		
			15:40:59	13.26	20.25	124.14	0.02	0.02	838	48721		
			15:41:00	13.31	20.26	124.20	0.02	0.02	838	47345		
			15:41:01	13.27	20.26	124.15	0.02	0.02	838	46298		
			15:41:02	13.28	20.26	124.15	0.02	0.02	838	44339		
			15:41:03	13.26	20.26	124.18	0.02	0.02	838	50482		
			15:41:04	13.22	20.27	124.20	0.02	0.02	838	43420		
			15:41:05	13.24	20.27	124.20	0.02	0.02	838	43874		
			15:41:06	13.23	20.28	124.20	0.02	0.02	838	44813		
			15:41:07	13.24	20.28	124.20	0.02	0.02	838	46298		
			15:41:08	13.23	20.28	124.15	0.02	0.02	838	43874		
			15:41:09	13.22	20.28	124.15	0.02	0.02	838	46298		
			15:41:10	13.25	20.28	124.13	0.02	0.02	838	41485		
			15:41:11	13.23	20.27	124.15	0.02	0.02	838	45792		
			15:41:12	13.28	20.26	124.13	0.02	0.02	838	45792		
			15:41:13	13.26	20.23	124.09	0.02	0.02	838	46816		
			15:41:14	13.23	20.23	124.15	0.02	0.02	838	44813		
			15:41:15	13.29	20.23	124.13	0.02	0.02	838	46816		
			15:41:16	13.24	20.23	124.11	0.02	0.02	838	43420		
			15:41:17	13.21	20.24	124.03	0.02	0.02	838	49881		
			15:41:18	13.26	20.24	124.06	0.02	0.02	838	44813		
			15:41:19	13.31	20.25	124.01	0.02	0.02	838	40680		
			15:41:20	13.30	20.25	124.07	0.02	0.02	838	46816		
			15:41:21	13.21	20.25	124.09	0.02	0.02	838	44813		
			15:41:22	13.35	20.25	124.09	0.02	0.02	838	42974		
			15:41:23	13.49	20.25	124.07	0.02	0.02	838	45297		
			15:41:24	13.70	20.25	124.11	0.02	0.02	838	43874		
			15:41:25	14.27	20.24	124.07	0.02	0.02	838	44339		

**TABLE D-13**

Profile PRO-10 on September 21, 2022 (1538-1550 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>79</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>151</b>	<b>Minimum Average Dilution in Profile</b>
<b>182</b>	<b>Plume Average Dilution Detected</b>
<b>8646</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:41:26	16.76	20.24	124.09	0.02	0.02	838	45792		No dye plume detected at 18 ft
			15:41:27	18.40	20.21	124.03	0.02	0.02	838	49294		
			15:41:28	18.76	20.20	124.06	0.02	0.02	838	46816		
			15:41:29	18.79	20.21	124.07	0.02	0.02	838	45792		
			15:41:30	18.81	20.21	124.05	0.02	0.02	838	47614		
			15:41:31	18.79	20.21	124.03	0.02	0.02	838	43420		
			15:41:32	18.75	20.20	124.05	0.02	0.02	838	43874		
			15:41:33	18.87	20.20	124.09	0.02	0.02	838	47345		
			15:41:34	18.77	20.20	124.03	0.02	0.02	838	48439		
			15:41:35	18.80	20.20	124.05	0.02	0.02	838	41900		
			15:41:36	18.79	20.20	124.05	0.02	0.02	838	46816		
			15:41:37	18.78	20.20	124.09	0.02	0.02	838	45297		
			15:41:38	18.77	20.20	124.08	0.02	0.02	838	43420		
			15:41:39	18.76	20.20	124.07	0.02	0.02	838	48161		
			15:41:40	18.79	20.20	124.07	0.02	0.02	838	45792		
			15:41:41	18.76	20.20	124.15	0.02	0.02	838	43196		
			15:41:42	18.81	20.20	124.22	0.02	0.02	838	45792		
			15:41:43	18.79	20.19	124.25	0.02	0.02	838	42111		
			15:41:44	18.78	20.19	124.25	0.02	0.02	838	45792		
			15:41:45	18.78	20.19	124.30	0.02	0.02	838	43196		
			15:41:46	18.78	20.19	124.20	0.02	0.02	838	46298		
			15:41:47	18.82	20.19	124.27	0.02	0.02	838	49294		
			15:41:48	18.76	20.19	124.26	0.02	0.02	838	51728		
			15:41:49	18.79	20.19	124.26	0.02	0.02	838	48161		
			15:41:50	18.80	20.19	124.31	0.02	0.02	838	42323		
			15:41:51	18.77	20.19	124.31	0.02	0.02	838	49881		
			15:41:52	18.74	20.19	124.29	0.02	0.02	838	45297		
			15:41:53	18.75	20.19	124.30	0.02	0.02	838	53038		
			15:41:54	18.80	20.19	124.27	0.02	0.02	838	44813		
			15:41:55	18.76	20.19	124.27	0.02	0.02	838	46298		
			15:41:56	18.77	20.19	124.25	0.02	0.02	838	49881		
			15:41:57	18.76	20.19	124.26	0.02	0.02	838	48161		
			15:41:58	18.80	20.19	124.13	0.02	0.02	838	42974		
			15:41:59	18.77	20.19	124.11	0.02	0.02	838	47886		
			15:42:00	18.78	20.20	124.18	0.02	0.02	838	46298		
			15:42:01	18.73	20.20	124.22	0.02	0.02	838	47345		
			15:42:02	18.81	20.20	124.22	0.02	0.02	838	47614		
			15:42:03	18.82	20.20	124.20	0.02	0.02	838	46556		

**TABLE D-13**

Profile PRO-10 on September 21, 2022 (1538-1550 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>79</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>151</b>	<b>Minimum Average Dilution in Profile</b>
<b>182</b>	<b>Plume Average Dilution Detected</b>
<b>8646</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:42:04	18.75	20.20	124.22	0.02	0.02	838	46816		
			15:42:05	18.76	20.20	124.24	0.02	0.02	838	46816		
			15:42:06	18.80	20.20	124.24	0.02	0.02	838	47345		
			15:42:07	18.74	20.20	124.20	0.02	0.02	838	48721		
			15:42:08	18.75	20.20	124.22	0.02	0.02	838	46298		
			15:42:09	18.70	20.20	124.18	0.02	0.02	838	46298		
			15:42:10	18.72	20.20	124.27	0.02	0.02	838	50482		
			15:42:11	18.81	20.20	124.20	0.02	0.02	838	43420		
			15:42:12	18.87	20.20	124.22	0.02	0.02	838	49006		
			15:42:13	19.24	20.20	124.20	0.02	0.02	838	45792		
			15:42:14	21.93	20.19	124.55	0.02	0.02	838	50482		
			15:42:15	24.22	20.17	124.70	0.02	0.02	838	45792		
			15:42:16	24.38	20.17	124.61	0.02	0.02	838	53038		
			15:42:17	24.43	20.18	124.56	0.02	0.02	838	46816		
			15:42:18	24.46	20.18	124.61	0.02	0.02	838	45297		
			15:42:19	24.49	20.17	124.80	0.02	0.02	838	46298		
			15:42:20	24.38	20.17	125.14	0.02	0.02	838	46816		
			15:42:21	24.43	20.17	127.00	1.67	1.12	838	750		
			15:42:22	24.44	20.17	126.83	3.82	3.05	838	275		
			15:42:23	24.45	20.17	127.21	2.76	2.10	838	399		
			15:42:24	24.49	20.17	127.67	2.79	2.13	838	394		
			15:42:25	24.45	20.17	127.72	3.04	2.35	838	357		
			15:42:26	24.44	20.17	127.89	4.33	3.51	838	239		
			15:42:27	24.44	20.17	127.94	5.63	4.67	838	179		
			15:42:28	24.50	20.17	128.07	7.08	5.97	838	140		
			15:42:29	24.44	20.17	127.40	6.00	5.00	838	168		
			15:42:30	24.43	20.17	126.47	3.47	2.73	838	307		
			15:42:31	24.49	20.17	126.97	2.66	2.01	838	416		
			15:42:32	24.40	20.17	127.57	4.66	3.80	838	220		
			15:42:33	24.50	20.17	127.98	5.53	4.58	838	183		
			15:42:34	24.42	20.17	127.90	4.11	3.31	838	253		
			15:42:35	24.47	20.16	128.13	4.32	3.50	838	240		
			15:42:36	24.46	20.16	127.88	3.87	3.09	838	271		
			15:42:37	24.45	20.17	127.00	3.37	2.65	838	317		
			15:42:38	24.46	20.17	127.03	3.03	2.34	838	358		
			15:42:39	24.46	20.16	127.33	3.36	2.64	838	318		
			15:42:40	24.47	20.16	127.25	4.73	3.86	838	217		
			15:42:41	24.44	20.16	127.38	4.63	3.77	838	222		



**TABLE D-13**

Profile PRO-10 on September 21, 2022 (1538-1550 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

79	Instantaneous Minimum Dilution in Profile
151	Minimum Average Dilution in Profile
182	Plume Average Dilution Detected
8646	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:42:42	24.44	20.16	127.31	4.07	3.27	838	256	225	Measured plume at 24 ft
			15:42:43	24.48	20.16	127.19	4.63	3.78	838	222		
			15:42:44	24.45	20.16	127.25	5.35	4.42	838	189		
			15:42:45	24.46	20.16	127.25	6.39	5.36	838	156		
			15:42:46	24.44	20.17	127.74	6.44	5.40	838	155		
			15:42:47	24.46	20.17	127.94	6.04	5.04	838	166		
			15:42:48	24.45	20.17	127.54	5.80	4.83	838	174		
			15:42:49	24.45	20.17	128.09	4.25	3.44	838	244		
			15:42:50	24.43	20.17	128.07	4.27	3.46	838	242		
			15:42:51	24.42	20.17	128.07	4.11	3.31	838	253		
			15:42:52	24.43	20.17	128.39	3.45	2.72	838	308		
			15:42:53	24.40	20.17	128.04	3.36	2.64	838	318		
			15:42:54	24.39	20.17	127.81	4.23	3.42	838	245		
			15:42:55	24.46	20.17	128.19	5.65	4.69	838	179		
			15:42:56	24.48	20.17	128.67	7.94	6.74	838	124		
			15:42:57	24.48	20.17	128.91	7.89	6.70	838	125		
			15:42:58	24.46	20.17	128.31	9.55	8.19	838	102		
			15:42:59	24.49	20.16	127.84	9.71	8.33	838	101		
			15:43:00	24.43	20.16	128.09	8.08	6.87	838	122		
			15:43:01	24.41	20.16	128.00	6.00	5.01	838	167		
			15:43:02	24.44	20.16	126.07	3.64	2.88	838	291		
			15:43:03	24.41	20.16	125.54	1.58	1.04	838	806		
			15:43:04	24.40	20.17	125.22	0.51	0.08	838	10743		
			15:43:05	24.41	20.17	124.94	0.40	0.40	838	2083		
			15:43:06	24.43	20.16	125.66	0.02	0.02	838	41078		
			15:43:07	24.39	20.16	125.94	0.02	0.02	838	44339		
			15:43:08	24.44	20.16	125.53	0.02	0.02	838	45297		
			15:43:09	24.48	20.16	125.71	0.02	0.02	838	46298		
			15:43:10	24.49	20.16	125.67	0.02	0.02	838	45297		
			15:43:11	24.47	20.16	125.56	0.02	0.02	838	48721		
			15:43:12	24.46	20.16	125.89	0.60	0.16	838	5182		
			15:43:13	24.44	20.16	126.18	1.37	0.85	838	984		
			15:43:14	24.46	20.16	125.55	0.38	0.38	838	2201		
			15:43:15	24.50	20.16	125.40	0.05	0.05	838	15752		
			15:43:16	24.43	20.16	125.18	0.26	0.26	838	3226		
			15:43:17	24.45	20.16	125.44	0.07	0.07	838	12040		
			15:43:18	24.44	20.17	126.18	0.02	0.02	838	35508		
			15:43:19	24.51	20.17	126.16	0.02	0.02	838	47079		

**TABLE D-13**

Profile PRO-10 on September 21, 2022 (1538-1550 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>79</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>151</b>	<b>Minimum Average Dilution in Profile</b>
<b>182</b>	<b>Plume Average Dilution Detected</b>
<b>8646</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:43:20	24.50	20.17	126.60	1.70	1.15	838	731		
			15:43:21	24.45	20.17	127.09	5.66	4.70	838	178		
			15:43:22	24.51	20.17	127.19	7.00	5.90	838	142		
			15:43:23	24.45	20.17	126.70	2.91	2.23	838	376		
			15:43:24	24.44	20.17	126.06	2.31	1.70	838	494		
			15:43:25	24.42	20.17	125.85	1.55	1.01	838	829		
			15:43:26	24.44	20.16	126.11	3.00	2.31	838	362		
			15:43:27	24.46	20.17	127.76	6.74	5.67	838	148		
			15:43:28	24.50	20.17	128.61	8.34	7.11	838	118		
			15:43:29	24.45	20.17	128.70	8.02	6.82	838	123		
			15:43:30	24.45	20.17	128.56	7.69	6.52	838	129		
			15:43:31	24.48	20.17	128.59	7.35	6.22	838	135		
			15:43:32	24.46	20.17	128.84	7.55	6.40	838	131		
			15:43:33	24.42	20.17	128.74	6.54	5.49	838	153		
			15:43:34	24.46	20.17	129.08	6.44	5.40	838	155		
			15:43:35	24.47	20.17	129.32	7.05	5.94	838	141		
			15:43:36	24.50	20.17	129.43	7.33	6.20	838	135		
			15:43:37	24.48	20.17	129.49	8.87	7.58	838	111		
			15:43:38	24.48	20.17	129.26	9.98	8.57	838	98		
			15:43:39	24.49	20.17	128.77	10.28	8.85	838	95		
			15:43:40	24.45	20.16	128.03	9.50	8.14	838	103		
			15:43:41	24.50	20.16	127.39	8.44	7.20	838	116		
			15:43:42	24.50	20.16	127.23	7.18	6.07	838	138		
			15:43:43	24.45	20.16	127.33	6.72	5.65	838	148		
			15:43:44	24.49	20.16	127.21	6.62	5.56	838	151		
			15:43:45	24.42	20.16	128.58	7.96	6.76	838	124		
			15:43:46	24.43	20.16	128.76	9.83	8.44	838	99		
			15:43:47	24.49	20.17	129.70	11.93	10.33	838	81		
			15:43:48	24.49	20.17	129.56	12.21	10.58	838	79	166	Measured plume at 24 ft
			15:43:49	24.50	20.17	129.56	12.09	10.47	838	80		
			15:43:50	24.50	20.17	129.43	10.86	9.37	838	89		
			15:43:51	24.47	20.17	129.43	9.35	8.01	838	105		
			15:43:52	24.52	20.17	129.41	9.59	8.22	838	102		
			15:43:53	24.43	20.17	129.24	6.98	5.89	838	142		
			15:43:54	24.46	20.16	127.90	4.95	4.06	838	206		
			15:43:55	24.48	20.16	126.62	3.99	3.20	838	262		
			15:43:56	24.42	20.16	126.58	3.90	3.12	838	269		
			15:43:57	24.47	20.16	126.64	3.23	2.52	838	333		

**TABLE D-13**

Profile PRO-10 on September 21, 2022 (1538-1550 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>79</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>151</b>	<b>Minimum Average Dilution in Profile</b>
<b>182</b>	<b>Plume Average Dilution Detected</b>
<b>8646</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:43:58	24.48	20.15	126.83	5.21	4.29	838	195		
			15:43:59	24.45	20.16	126.57	6.12	5.11	838	164		
			15:44:00	24.50	20.16	125.30	4.88	4.00	838	210		
			15:44:01	24.42	20.16	125.26	3.40	2.67	838	314		
			15:44:02	24.45	20.16	127.43	2.74	2.08	838	402		
			15:44:03	24.42	20.16	128.15	3.89	3.11	838	270		
			15:44:04	24.42	20.16	126.05	6.49	5.45	838	154		
			15:44:05	24.48	20.16	125.38	3.73	2.97	838	282		
			15:44:06	24.42	20.16	125.32	1.92	1.35	838	623		
			15:44:07	24.46	20.16	125.02	1.65	1.10	838	763		
			15:44:08	24.42	20.16	124.88	0.12	0.12	838	6709		
			15:44:09	24.42	20.16	125.59	0.03	0.03	838	28215		
			15:44:10	24.45	20.17	125.83	0.19	0.19	838	4333		
			15:44:11	24.46	20.17	125.30	0.99	0.51	838	1644		
			15:44:12	25.18	20.16	124.97	0.31	0.31	838	2707		
			15:44:13	28.44	20.17	127.09	3.60	2.85	838	294		
			15:44:14	30.07	20.16	127.08	4.88	4.00	838	210		
			15:44:15	30.20	20.16	126.93	4.69	3.83	838	219		
			15:44:16	30.22	20.16	126.88	4.56	3.71	838	226		
			15:44:17	30.15	20.16	126.79	4.67	3.81	838	220	222	Measured plume at 30 ft
			15:44:18	30.22	20.16	126.76	5.78	4.81	838	174		
			15:44:19	30.20	20.16	126.75	6.10	5.10	838	164		
			15:44:20	30.19	20.16	126.91	3.84	3.06	838	273		
			15:44:21	30.17	20.16	126.65	1.64	1.09	838	767		
			15:44:22	30.19	20.16	126.02	2.50	1.86	838	450		
			15:44:23	30.18	20.16	126.25	3.91	3.13	838	268		
			15:44:24	30.15	20.16	126.29	2.90	2.22	838	377		
			15:44:25	30.16	20.16	126.08	2.93	2.25	838	372		
			15:44:26	30.16	20.16	126.20	5.39	4.46	838	188		
			15:44:27	30.15	20.16	127.21	6.95	5.86	838	143		
			15:44:28	30.18	20.16	127.70	6.51	5.46	838	153		
			15:44:29	30.13	20.16	127.62	4.45	3.62	838	232		
			15:44:30	30.17	20.16	127.05	5.09	4.19	838	200		
			15:44:31	30.10	20.16	127.74	7.48	6.33	838	132		
			15:44:32	30.18	20.16	127.38	8.71	7.44	838	113	164	Measured plume at 30 ft
			15:44:33	30.04	20.16	127.28	6.90	5.81	838	144		
			15:44:34	30.08	20.15	126.42	6.72	5.65	838	148		
			15:44:35	30.13	20.15	126.74	6.42	5.38	838	156		

**TABLE D-13**

Profile PRO-10 on September 21, 2022 (1538-1550 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

79	Instantaneous Minimum Dilution in Profile
151	Minimum Average Dilution in Profile
182	Plume Average Dilution Detected
8646	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:44:36	30.20	20.15	127.08	6.36	5.33	838	157		
			15:44:37	30.12	20.15	127.00	5.52	4.57	838	183		
			15:44:38	30.21	20.15	127.12	5.15	4.25	838	197		
			15:44:39	30.12	20.15	127.19	5.63	4.67	838	179		
			15:44:40	30.19	20.15	127.10	7.06	5.96	838	141		
			15:44:41	30.15	20.15	127.25	8.12	6.91	838	121		
			15:44:42	30.16	20.15	127.36	7.73	6.55	838	128		
			15:44:43	30.10	20.15	127.44	7.74	6.56	838	128		
			15:44:44	30.14	20.16	127.55	7.25	6.12	838	137		
			15:44:45	30.16	20.16	127.48	7.25	6.12	838	137		
			15:44:46	30.25	20.16	127.42	7.25	6.12	838	137		
			15:44:47	30.19	20.15	127.55	7.61	6.45	838	130		
			15:44:48	30.26	20.16	127.52	7.20	6.09	838	138		
			15:44:49	30.19	20.16	127.42	7.01	5.91	838	142		
			15:44:50	30.20	20.15	127.21	6.68	5.61	838	149		
			15:44:51	30.28	20.15	127.17	5.85	4.87	838	172		
			15:44:52	30.21	20.15	127.17	5.70	4.73	838	177		
			15:44:53	30.21	20.15	127.21	6.29	5.27	838	159		
			15:44:54	30.18	20.15	127.10	6.10	5.09	838	164		
			15:44:55	30.23	20.15	126.75	5.21	4.30	838	195		
			15:44:56	30.23	20.15	126.85	4.94	4.05	838	207		
			15:44:57	30.27	20.15	126.95	4.88	4.00	838	210		
			15:44:58	30.26	20.15	126.90	5.02	4.13	838	203		
			15:44:59	30.26	20.15	127.07	5.88	4.90	838	171		
			15:45:00	30.25	20.15	127.17	5.45	4.51	838	186		
			15:45:01	30.26	20.15	127.31	5.90	4.92	838	170		
			15:45:02	30.19	20.15	127.29	6.17	5.15	838	163		
			15:45:03	30.14	20.15	127.42	6.59	5.54	838	151		
			15:45:04	30.13	20.15	127.48	6.28	5.26	838	159		
			15:45:05	30.09	20.15	127.42	6.52	5.47	838	153		
			15:45:06	30.16	20.15	127.03	3.70	2.94	838	285		
			15:45:07	30.21	20.16	126.75	1.78	1.22	838	687		
			15:45:08	30.27	20.15	126.62	2.01	1.42	838	589		
			15:45:09	30.25	20.15	126.62	2.46	1.82	838	459		
			15:45:10	30.24	20.15	126.66	3.28	2.56	838	327		
			15:45:11	30.24	20.15	126.73	4.18	3.37	838	249		
			15:45:12	30.19	20.15	126.71	3.65	2.89	838	290		
			15:45:13	30.20	20.15	126.66	3.73	2.97	838	282		

**TABLE D-13**

Profile PRO-10 on September 21, 2022 (1538-1550 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			15:45:14	30.23	20.15	126.33	3.70	2.94	838	285		
			15:45:15	30.21	20.15	126.45	3.48	2.74	838	306		
			15:45:16	30.19	20.15	126.38	1.59	1.05	838	797		
			15:45:17	30.16	20.15	126.39	3.70	2.94	838	285		
			15:45:18	30.20	20.15	126.76	4.49	3.65	838	230		
			15:45:19	30.24	20.16	127.58	7.46	6.32	838	133		
			15:45:20	30.23	20.16	127.23	7.68	6.51	838	129		
			15:45:21	30.24	20.16	126.91	7.55	6.40	838	131		
			15:45:22	30.21	20.15	126.54	7.59	6.43	838	130		
			15:45:23	30.21	20.15	126.42	8.96	7.66	838	109		
			15:45:24	30.27	20.15	126.30	9.59	8.23	838	102		
			15:45:25	30.23	20.15	127.03	9.45	8.10	838	103		
			15:45:26	30.26	20.16	128.41	9.13	7.81	838	107	151	Measured plume at 30 ft
			15:45:27	30.26	20.16	128.70	9.11	7.80	838	108		
			15:45:28	30.28	20.16	128.46	9.71	8.33	838	101		
			15:45:29	30.24	20.16	128.46	9.35	8.01	838	105		
			15:45:30	30.25	20.16	128.46	9.73	8.35	838	100		
			15:45:31	30.23	20.16	128.53	9.11	7.80	838	108		
			15:45:32	30.20	20.16	128.57	9.12	7.80	838	107		
			15:45:33	30.23	20.16	128.21	8.65	7.38	838	114		
			15:45:34	30.24	20.16	127.72	7.02	5.92	838	142		
			15:45:35	30.25	20.16	127.38	6.55	5.50	838	152		
			15:45:36	30.22	20.15	127.33	6.66	5.60	838	150		
			15:45:37	30.29	20.15	127.21	7.03	5.93	838	141		
			15:45:38	30.19	20.15	127.31	8.01	6.81	838	123		
			15:45:39	30.23	20.15	127.19	7.55	6.39	838	131		
			15:45:40	30.09	20.15	127.09	6.79	5.72	838	147		
			15:45:41	30.12	20.15	126.95	6.63	5.57	838	151		
			15:45:42	30.25	20.15	126.97	6.54	5.49	838	153		
			15:45:43	30.15	20.15	126.90	4.84	3.96	838	211		
			15:45:44	30.16	20.15	126.81	5.27	4.35	838	193		
			15:45:45	30.23	20.15	126.81	5.67	4.71	838	178		
			15:45:46	30.19	20.15	126.74	5.66	4.70	838	178		
			15:45:47	30.19	20.15	126.66	5.18	4.27	838	196		
			15:45:48	30.23	20.15	126.62	5.51	4.56	838	184		
			15:45:49	30.19	20.15	126.73	4.99	4.10	838	205		
			15:45:50	30.23	20.15	126.93	6.39	5.35	838	156		
			15:45:51	30.18	20.15	126.97	6.72	5.65	838	148		

79	Instantaneous Minimum Dilution in Profile
151	Minimum Average Dilution in Profile
182	Plume Average Dilution Detected
8646	Profile Average Dilution

**TABLE D-13**

Profile PRO-10 on September 21, 2022 (1538-1550 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			15:45:52	30.17	20.15	127.12	7.19	6.08	838	138		
			15:45:53	30.20	20.15	127.46	7.33	6.20	838	135		
			15:45:54	30.19	20.15	127.72	6.66	5.60	838	150		
			15:45:55	30.15	20.15	127.79	6.64	5.58	838	150		
			15:45:56	30.47	20.15	127.64	5.86	4.88	838	172		
			15:45:57	30.77	20.15	127.17	5.39	4.45	838	188		
			15:45:58	32.03	20.15	126.91	5.43	4.49	838	187		
			15:45:59	35.23	20.15	126.60	4.89	4.01	838	209		
			15:46:00	36.05	20.14	126.64	4.78	3.91	838	214		
			15:46:01	36.19	20.15	126.71	5.05	4.16	838	202		
			15:46:02	36.19	20.15	126.77	4.84	3.96	838	211		
			15:46:03	36.19	20.15	126.69	4.66	3.80	838	221		
			15:46:04	36.18	20.14	126.69	4.85	3.97	838	211		
			15:46:05	36.25	20.14	126.52	5.88	4.89	838	171	205	Measured plume at 36 ft
			15:46:06	36.21	20.15	126.83	6.01	5.01	838	167		
			15:46:07	36.19	20.15	127.08	6.13	5.12	838	164		
			15:46:08	36.24	20.15	127.25	5.68	4.72	838	178		
			15:46:09	36.19	20.15	127.05	5.37	4.44	838	189		
			15:46:10	36.20	20.15	126.93	4.83	3.95	838	212		
			15:46:11	36.16	20.15	126.75	5.17	4.26	838	197		
			15:46:12	36.20	20.15	126.77	4.66	3.80	838	221		
			15:46:13	36.20	20.15	126.77	4.67	3.81	838	220		
			15:46:14	36.20	20.15	126.76	4.16	3.35	838	250		
			15:46:15	36.19	20.15	126.71	4.46	3.63	838	231		
			15:46:16	36.20	20.15	126.62	4.75	3.88	838	216		
			15:46:17	36.21	20.15	126.31	4.54	3.69	838	227		
			15:46:18	36.18	20.15	126.08	3.15	2.45	838	343		
			15:46:19	36.23	20.15	125.95	3.37	2.64	838	317		
			15:46:20	36.19	20.15	126.04	3.87	3.09	838	271		
			15:46:21	36.21	20.15	126.21	3.77	3.00	838	279		
			15:46:22	36.15	20.15	126.37	3.87	3.09	838	271		
			15:46:23	36.21	20.15	126.54	3.92	3.14	838	267		
			15:46:24	36.20	20.15	126.46	1.64	1.09	838	770		
			15:46:25	36.18	20.15	126.06	1.09	0.60	838	1407		
			15:46:26	36.18	20.15	126.14	2.33	1.71	838	489		
			15:46:27	36.22	20.15	126.08	3.28	2.56	838	327		
			15:46:28	36.20	20.15	126.04	3.27	2.56	838	328		
			15:46:29	36.21	20.15	126.04	3.15	2.44	838	343		

**TABLE D-13**

Profile PRO-10 on September 21, 2022 (1538-1550 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>79</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>151</b>	<b>Minimum Average Dilution in Profile</b>
<b>182</b>	<b>Plume Average Dilution Detected</b>
<b>8646</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:46:30	36.12	20.15	125.95	3.65	2.90	838	289		
			15:46:31	36.19	20.15	125.70	3.33	2.61	838	321		
			15:46:32	36.17	20.15	126.16	1.99	1.41	838	594		
			15:46:33	36.17	20.15	126.48	0.86	0.39	838	2155		
			15:46:34	36.13	20.15	126.71	3.33	2.61	838	321		
			15:46:35	36.18	20.15	126.90	3.26	2.54	838	330		
			15:46:36	36.27	20.15	127.01	5.20	4.29	838	195		
			15:46:37	36.17	20.15	127.19	5.13	4.22	838	198		
			15:46:38	36.21	20.15	127.21	5.45	4.51	838	186		
			15:46:39	36.25	20.15	127.33	6.20	5.18	838	162		
			15:46:40	36.22	20.15	127.38	6.55	5.50	838	152		
			15:46:41	36.23	20.15	127.31	6.75	5.68	838	148		
			15:46:42	36.20	20.15	127.35	6.19	5.18	838	162		
			15:46:43	36.23	20.15	127.08	6.60	5.54	838	151	168	Measured plume at 36 ft
			15:46:44	36.23	20.15	126.97	6.01	5.01	838	167		
			15:46:45	36.20	20.15	126.85	6.23	5.21	838	161		
			15:46:46	36.20	20.15	126.83	5.62	4.67	838	180		
			15:46:47	36.21	20.15	126.92	5.57	4.62	838	181		
			15:46:48	36.23	20.15	126.92	5.61	4.65	838	180		
			15:46:49	36.22	20.14	126.88	6.27	5.25	838	160		
			15:46:50	36.25	20.14	126.90	6.40	5.36	838	156		
			15:46:51	36.23	20.14	126.86	6.14	5.13	838	163		
			15:46:52	36.21	20.14	126.88	6.40	5.36	838	156		
			15:46:53	36.29	20.14	126.99	5.90	4.92	838	170		
			15:46:54	36.21	20.15	127.10	6.15	5.14	838	163		
			15:46:55	36.20	20.15	127.19	5.38	4.45	838	188		
			15:46:56	36.23	20.15	127.25	5.92	4.93	838	170		
			15:46:57	36.21	20.15	127.31	6.24	5.22	838	161		
			15:46:58	36.22	20.15	127.23	6.35	5.32	838	158		
			15:46:59	36.20	20.15	127.23	6.45	5.41	838	155		
			15:47:00	36.23	20.15	127.23	6.86	5.78	838	145		
			15:47:01	36.23	20.15	127.14	6.32	5.29	838	158		
			15:47:02	36.23	20.15	127.12	6.12	5.11	838	164		
			15:47:03	36.15	20.15	127.02	6.21	5.20	838	161		
			15:47:04	36.28	20.14	127.02	6.45	5.41	838	155		
			15:47:05	36.22	20.14	127.10	6.56	5.51	838	152		
			15:47:06	36.26	20.14	127.12	6.25	5.23	838	160		
			15:47:07	36.23	20.15	127.21	6.22	5.20	838	161		

**TABLE D-13**

Profile PRO-10 on September 21, 2022 (1538-1550 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>79</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>151</b>	<b>Minimum Average Dilution in Profile</b>
<b>182</b>	<b>Plume Average Dilution Detected</b>
<b>8646</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:47:08	36.24	20.15	127.31	6.58	5.53	838	152		
			15:47:09	36.24	20.15	127.33	6.42	5.38	838	156		
			15:47:10	36.24	20.15	127.31	6.67	5.61	838	150		
			15:47:11	36.24	20.15	127.29	6.49	5.44	838	154		
			15:47:12	36.22	20.15	127.29	6.47	5.42	838	154		
			15:47:13	36.23	20.15	127.21	6.01	5.01	838	167		
			15:47:14	36.24	20.15	127.19	6.51	5.46	838	154		
			15:47:15	36.24	20.14	127.10	5.87	4.89	838	172		
			15:47:16	36.24	20.14	127.06	6.02	5.02	838	167		
			15:47:17	36.20	20.14	127.02	6.32	5.29	838	158		
			15:47:18	36.20	20.14	127.07	5.59	4.64	838	181		
			15:47:19	36.21	20.14	127.08	5.80	4.83	838	174		
			15:47:20	36.22	20.14	126.98	5.67	4.71	838	178		
			15:47:21	36.24	20.14	127.02	5.44	4.50	838	186		
			15:47:22	36.19	20.14	127.02	6.06	5.06	838	166		
			15:47:23	36.22	20.14	127.04	6.03	5.03	838	167		
			15:47:24	36.19	20.14	127.08	6.50	5.46	838	154		
			15:47:25	36.20	20.14	127.08	6.31	5.28	838	159		
			15:47:26	36.22	20.14	127.14	6.35	5.32	838	158		
			15:47:27	36.24	20.15	127.21	6.31	5.29	838	159		
			15:47:28	36.23	20.15	127.27	6.54	5.49	838	153		
			15:47:29	36.26	20.15	127.40	6.48	5.44	838	154		
			15:47:30	36.24	20.15	127.46	6.91	5.82	838	144		
			15:47:31	36.16	20.15	127.48	7.14	6.02	838	139		
			15:47:32	36.17	20.15	127.52	7.13	6.02	838	139		
			15:47:33	36.16	20.15	127.55	6.90	5.81	838	144		
			15:47:34	36.25	20.15	127.65	7.11	6.00	838	140		
			15:47:35	36.20	20.15	127.59	7.51	6.36	838	132		
			15:47:36	36.26	20.15	127.55	7.61	6.45	838	130		
			15:47:37	36.13	20.15	127.52	7.54	6.38	838	131		
			15:47:38	36.28	20.15	127.44	7.35	6.22	838	135		
			15:47:39	36.22	20.14	127.36	7.34	6.21	838	135		
			15:47:40	36.28	20.14	127.42	6.39	5.36	838	156		
			15:47:41	36.20	20.14	127.36	6.84	5.76	838	146		
			15:47:42	36.60	20.14	127.29	6.85	5.77	838	145		
			15:47:43	36.68	20.14	127.40	6.97	5.87	838	143		
			15:47:44	36.61	20.14	127.55	7.32	6.19	838	135		
			15:47:45	36.67	20.14	127.69	8.17	6.95	838	121		



**TABLE D-13**

Profile PRO-10 on September 21, 2022 (1538-1550 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

79	Instantaneous Minimum Dilution in Profile
151	Minimum Average Dilution in Profile
182	Plume Average Dilution Detected
8646	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:47:46	36.75	20.14	127.67	8.77	7.49	838	112		
			15:47:47	36.89	20.14	127.70	3.37	2.64	838	317		
			15:47:48	36.90	20.14	127.77	3.87	3.09	838	271		
			15:47:49	36.90	20.15	127.81	3.77	3.00	838	279		
			15:47:50	36.96	20.15	127.88	3.87	3.09	838	271		
			15:47:51	37.39	20.15	127.76	3.92	3.14	838	267		
			15:47:52	40.08	20.14	127.68	8.05	6.84	838	123		
			15:47:53	41.26	20.14	127.61	7.50	6.35	838	132		
			15:47:54	41.71	20.14	127.46	7.22	6.10	838	137		
			15:47:55	41.78	20.14	127.56	6.90	5.82	838	144		
			15:47:56	41.84	20.14	127.42	7.59	6.43	838	130		
			15:47:57	41.83	20.14	127.23	6.96	5.86	838	143		
			15:47:58	41.76	20.14	127.10	7.01	5.91	838	142		
			15:47:59	42.02	20.14	127.10	7.18	6.06	838	138		
			15:48:00	41.78	20.14	127.14	7.57	6.42	838	131		
			15:48:01	41.89	20.14	127.12	8.09	6.88	838	122	152	Measured plume at 42 ft
			15:48:02	41.89	20.14	127.12	7.65	6.48	838	129		
			15:48:03	41.86	20.14	127.12	8.35	7.12	838	118		
			15:48:04	41.91	20.14	127.21	6.92	5.83	838	144		
			15:48:05	41.82	20.14	127.19	6.85	5.77	838	145		
			15:48:06	41.83	20.14	127.17	6.84	5.76	838	146		
			15:48:07	41.81	20.14	127.25	6.73	5.66	838	148		
			15:48:08	41.86	20.14	127.25	7.41	6.27	838	134		
			15:48:09	41.88	20.14	127.31	7.16	6.05	838	139		
			15:48:10	41.75	20.14	127.27	7.49	6.34	838	132		
			15:48:11	41.88	20.14	127.29	7.44	6.29	838	133		
			15:48:12	41.76	20.14	127.29	7.57	6.41	838	131		
			15:48:13	41.79	20.14	127.23	6.68	5.61	838	149		
			15:48:14	41.77	20.14	127.27	7.33	6.20	838	135		
			15:48:15	41.80	20.14	127.29	7.22	6.10	838	137		
			15:48:16	41.84	20.14	127.25	6.99	5.89	838	142		
			15:48:17	41.78	20.14	127.33	7.39	6.25	838	134		
			15:48:18	41.81	20.14	127.27	6.65	5.59	838	150		
			15:48:19	41.81	20.14	127.17	5.47	4.53	838	185		
			15:48:20	41.80	20.14	126.73	5.90	4.92	838	170		
			15:48:21	41.86	20.14	126.69	6.77	5.69	838	147		
			15:48:22	41.80	20.14	126.76	6.28	5.26	838	159		
			15:48:23	41.78	20.14	126.88	6.26	5.24	838	160		

**TABLE D-13**

Profile PRO-10 on September 21, 2022 (1538-1550 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>79</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>151</b>	<b>Minimum Average Dilution in Profile</b>
<b>182</b>	<b>Plume Average Dilution Detected</b>
<b>8646</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:48:24	41.79	20.14	126.93	6.01	5.01	838	167		
			15:48:25	41.79	20.14	127.01	6.55	5.50	838	152		
			15:48:26	41.79	20.14	127.02	6.13	5.12	838	164		
			15:48:27	41.83	20.14	126.98	6.45	5.41	838	155		
			15:48:28	41.74	20.14	127.00	6.22	5.20	838	161		
			15:48:29	41.94	20.14	126.85	6.92	5.83	838	144		
			15:48:30	41.80	20.14	126.93	7.09	5.98	838	140		
			15:48:31	41.83	20.14	127.00	6.31	5.28	838	159		
			15:48:32	41.88	20.14	126.97	6.07	5.07	838	165		
			15:48:33	41.85	20.14	126.99	6.28	5.25	838	160		
			15:48:34	41.87	20.14	127.08	6.12	5.12	838	164		
			15:48:35	41.79	20.14	127.04	6.85	5.77	838	145		
			15:48:36	41.90	20.14	127.02	8.22	7.00	838	120		
			15:48:37	41.80	20.14	127.06	8.38	7.14	838	117		
			15:48:38	41.86	20.14	127.12	9.24	7.91	838	106		
			15:48:39	41.86	20.14	127.23	8.80	7.52	838	111		
			15:48:40	41.88	20.14	127.33	8.65	7.38	838	114		
			15:48:41	41.80	20.14	127.40	8.44	7.19	838	116		
			15:48:42	41.84	20.14	127.67	8.24	7.02	838	119		
			15:48:43	41.94	20.14	127.68	8.48	7.23	838	116		
			15:48:44	41.81	20.14	127.63	7.72	6.55	838	128		
			15:48:45	41.86	20.14	127.76	7.14	6.03	838	139		
			15:48:46	41.85	20.14	127.55	6.96	5.87	838	143		
			15:48:47	41.86	20.14	127.29	7.15	6.03	838	139		
			15:48:48	41.84	20.14	127.27	7.24	6.12	838	137		
			15:48:49	41.88	20.14	127.19	7.64	6.47	838	129		
			15:48:50	41.84	20.14	127.23	7.75	6.58	838	127		
			15:48:51	41.81	20.14	127.23	7.22	6.10	838	137		
			15:48:52	41.90	20.14	126.97	7.07	5.97	838	140		
			15:48:53	41.88	20.14	126.95	7.09	5.99	838	140		
			15:48:54	41.88	20.14	126.99	6.76	5.69	838	147		
			15:48:55	41.88	20.14	127.17	6.38	5.35	838	157		
			15:48:56	41.78	20.14	127.19	6.77	5.70	838	147		
			15:48:57	41.76	20.14	127.23	7.25	6.12	838	137		
			15:48:58	41.82	20.14	127.33	7.56	6.41	838	131		
			15:48:59	41.75	20.14	127.33	6.86	5.78	838	145		
			15:49:00	41.86	20.14	127.38	7.15	6.03	838	139		
			15:49:01	41.86	20.14	127.38	7.28	6.15	838	136		

**TABLE D-13**

Profile PRO-10 on September 21, 2022 (1538-1550 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

79	Instantaneous Minimum Dilution in Profile
151	Minimum Average Dilution in Profile
182	Plume Average Dilution Detected
8646	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:49:02	41.76	20.14	127.33	7.64	6.47	838	129		
			15:49:03	42.00	20.14	127.14	7.00	5.90	838	142		
			15:49:04	42.09	20.14	127.29	7.17	6.06	838	138		
			15:49:05	42.51	20.14	127.14	6.84	5.76	838	146		
			15:49:06	43.43	20.14	127.00	6.62	5.56	838	151		
			15:49:07	43.84	20.14	127.00	6.44	5.40	838	155		
			15:49:08	44.02	20.14	126.97	6.29	5.27	838	159		
			15:49:09	43.97	20.14	127.06	5.98	4.99	838	168		
			15:49:10	43.99	20.14	127.04	5.99	4.99	838	168		
			15:49:11	43.91	20.14	127.06	5.76	4.79	838	175		
			15:49:12	43.92	20.14	127.10	6.06	5.06	838	166		
			15:49:13	44.02	20.14	127.08	5.81	4.83	838	173		
			15:49:14	43.91	20.14	127.04	6.19	5.18	838	162		
			15:49:15	44.01	20.14	126.98	5.62	4.67	838	180		
			15:49:16	43.86	20.14	127.01	5.65	4.69	838	179		
			15:49:17	44.04	20.14	126.95	5.69	4.73	838	177		
			15:49:18	43.92	20.14	126.95	6.01	5.01	838	167		
			15:49:19	43.92	20.14	126.97	5.39	4.46	838	188		
			15:49:20	43.94	20.14	127.04	5.23	4.31	838	194		
			15:49:21	43.93	20.14	126.97	5.29	4.37	838	192		
			15:49:22	44.01	20.14	126.93	5.48	4.54	838	184		
			15:49:23	43.94	20.14	126.97	5.60	4.65	838	180		
			15:49:24	43.99	20.14	126.96	5.68	4.72	838	178		
			15:49:25	43.88	20.14	126.98	5.77	4.80	838	175		
			15:49:26	44.02	20.14	126.90	5.61	4.65	838	180		
			15:49:27	43.86	20.14	126.94	5.87	4.89	838	171		
			15:49:28	44.02	20.14	126.81	5.80	4.83	838	174		
			15:49:29	43.86	20.14	126.94	5.45	4.52	838	186		
			15:49:30	44.12	20.14	126.93	5.64	4.68	838	179		
			15:49:31	43.80	20.14	126.92	6.05	5.05	838	166		
			15:49:32	44.10	20.14	126.90	6.06	5.06	838	166		
			15:49:33	43.78	20.14	126.91	6.14	5.13	838	163		
			15:49:34	44.09	20.14	126.93	6.21	5.19	838	161		
			15:49:35	43.82	20.14	126.92	6.09	5.09	838	165		
			15:49:36	44.17	20.14	126.88	6.35	5.32	838	158		
			15:49:37	43.87	20.14	126.97	6.11	5.10	838	164		
			15:49:38	44.13	20.14	127.02	6.18	5.16	838	162		
			15:49:39	43.97	20.14	127.06	6.12	5.11	838	164		

**TABLE D-13**

Profile PRO-10 on September 21, 2022 (1538-1550 hours PDT) located at South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>79</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>151</b>	<b>Minimum Average Dilution in Profile</b>
<b>182</b>	<b>Plume Average Dilution Detected</b>
<b>8646</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:49:40	44.11	20.15	127.12	6.17	5.16	838	163		
			15:49:41	44.04	20.15	127.14	6.12	5.11	838	164		
			15:49:42	44.02	20.15	127.23	6.70	5.64	838	149		
			15:49:43	44.13	20.15	127.17	6.39	5.36	838	156		
			15:49:44	43.93	20.15	127.23	6.24	5.22	838	160		
			15:49:45	44.25	20.15	127.14	6.36	5.33	838	157		
			15:49:46	43.91	20.15	127.19	6.57	5.51	838	152		
			15:49:47	44.26	20.15	127.17	5.92	4.94	838	170		
			15:49:48	43.93	20.15	127.17	6.50	5.45	838	154		
			15:49:49	44.14	20.15	127.17	6.18	5.16	838	162		
			15:49:50	44.12	20.15	127.12	6.11	5.10	838	164		
			15:49:51	43.95	20.15	127.12	6.20	5.18	838	162		
			15:49:52	44.26	20.15	127.02	6.08	5.08	838	165		
			15:49:53	43.90	20.15	127.09	6.09	5.08	838	165		
			15:49:54	44.18	20.15	127.12	6.06	5.05	838	166		
			15:49:55	44.09	20.15	127.19	6.24	5.22	838	161		
			15:49:56	43.90	20.15	127.21	6.19	5.18	838	162		
			15:49:57	44.15	20.15	127.29	6.21	5.20	838	161		
			15:49:58	44.00	20.15	127.27	6.62	5.56	838	151		
			15:49:59	44.07	20.15	127.27	7.13	6.02	838	139		
			15:50:00	44.14	20.15	127.33	7.11	6.00	838	140		
			15:50:01	43.91	20.15	127.36	7.03	5.93	838	141		
			15:50:02	44.20	20.15	127.38	6.73	5.66	838	148		
			15:50:03	44.04	20.15	127.27	7.03	5.93	838	141		
			15:50:04	43.96	20.15	127.33	6.75	5.67	838	148		
			15:50:05	44.11	20.15	127.36	6.78	5.70	838	147		
			15:50:06	43.99	20.15	127.29	6.84	5.76	838	145		
			15:50:07	44.08	20.15	127.38	6.77	5.69	838	147		
			15:50:08	44.15	20.15	127.36	6.82	5.74	838	146		
			15:50:09	43.98	20.15	127.36	6.62	5.56	838	151		
			15:50:10	44.08	20.15	127.36	6.42	5.38	838	156		
			15:50:11	44.10	20.15	127.36	6.82	5.74	838	146		
			15:50:12	44.01	20.15	127.27	7.09	5.98	838	140		
			15:50:13	44.06	20.15	127.31	6.79	5.71	838	147		
			15:50:14	44.01	20.15	127.31	6.46	5.42	838	155		

**TABLE D-14**

Transect TRN-02 on September 21, 2022 (1606-1612 hours PDT) located along South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

68	Instantaneous Minimum Dilution in Profile
135	Minimum Average Dilution in Profile
334	Detected Plume Average Dilution
334	Transect Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
TRN-02 (Along South Mixing Zone Boundary at 242 ft from Diffuser (E to W) at 28 ft sampling depth)	35- 51 ft	0.09 m/sec 173 deg. (mag.) Late Flood tide	16:06:52	4.50	20.32	124.37	3.58	2.83	844	298	472	Inside discharge plume
			16:06:53	6.11	20.31	124.38	2.47	1.84	844	459		
			16:06:54	6.97	20.32	124.38	2.31	1.70	844	498		
			16:06:55	7.28	20.30	124.36	2.92	2.24	844	377		
			16:06:56	7.38	20.29	124.34	2.67	2.02	844	418		
			16:06:57	7.54	20.26	124.34	2.25	1.64	844	513		
			16:06:58	7.48	20.26	124.36	2.33	1.71	844	493		
			16:06:59	8.30	20.24	124.34	2.54	1.90	844	443		
			16:07:00	9.43	20.25	124.34	2.13	1.53	844	551		
			16:07:01	10.40	20.25	124.34	2.42	1.79	844	471		
			16:07:02	11.45	20.23	124.40	2.57	1.93	844	438		
			16:07:03	12.72	20.19	124.65	2.33	1.71	844	492		
			16:07:04	13.69	20.17	124.70	2.16	1.56	844	542		
			16:07:05	14.85	20.17	124.70	1.95	1.37	844	617		
			16:07:06	15.42	20.17	124.76	1.86	1.29	844	653		
			16:07:07	16.00	20.17	124.65	1.88	1.31	844	646		
			16:07:08	17.22	20.19	124.55	1.80	1.23	844	684		
			16:07:09	18.20	20.20	124.49	1.52	0.99	844	853		
			16:07:10	20.53	20.19	124.57	1.00	0.52	844	1616		
			16:07:11	22.41	20.16	124.72	0.09	0.09	844	9494		
			16:07:12	23.38	20.16	124.84	0.38	0.38	844	2234		
			16:07:13	24.51	20.15	125.04	0.31	0.31	844	2745		
			16:07:14	25.18	20.14	125.05	0.16	0.16	844	5383		
			16:07:15	26.13	20.14	124.99	0.18	0.18	844	4589		
			16:07:16	26.59	20.15	125.03	1.70	1.15	844	734		
			16:07:17	27.55	20.14	125.22	1.75	1.19	844	709		
			16:07:18	28.31	20.14	125.26	1.41	0.89	844	949		
			16:07:19	28.91	20.14	125.30	1.26	0.76	844	1116		
			16:07:20	29.19	20.15	125.18	0.75	0.29	844	2896		
			16:07:21	29.27	20.15	125.35	0.43	0.01	844	129870		
16:07:22	29.55	20.15	125.38	1.90	1.33	844	636					
16:07:23	29.83	20.14	125.37	1.56	1.02	844	828					
16:07:24	29.89	20.14	125.28	2.02	1.43	844	590	707	Inside discharge plume			
16:07:25	29.85	20.14	125.28	1.67	1.12	844	756					
16:07:26	29.99	20.14	125.26	1.72	1.17	844	724					
16:07:27	30.06	20.14	125.28	0.90	0.43	844	1964					
16:07:28	30.12	20.14	125.06	0.02	0.02	844	44656					
16:07:29	30.06	20.14	124.85	0.02	0.02	844	45134					
16:07:30	30.08	20.13	124.99	1.08	0.59	844	1419					

**TABLE D-14**

Transect TRN-02 on September 21, 2022 (1606-1612 hours PDT) located along South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

68	Instantaneous Minimum Dilution in Profile
135	Minimum Average Dilution in Profile
334	Detected Plume Average Dilution
334	Transect Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:07:31	30.05	20.14	125.07	0.83	0.37	844	2298		
			16:07:32	30.15	20.14	125.19	0.48	0.05	844	16491		
			16:07:33	30.10	20.14	124.96	0.46	0.04	844	23260		
			16:07:34	30.11	20.13	124.82	0.28	0.28	844	2974		
			16:07:35	30.08	20.13	124.94	0.02	0.02	844	44656		
			16:07:36	30.15	20.14	125.65	0.39	0.39	844	2152		
			16:07:37	30.20	20.14	126.02	0.49	0.06	844	14222		
			16:07:38	30.12	20.14	125.59	1.61	1.06	844	794		
			16:07:39	30.15	20.14	125.24	2.66	2.01	844	421		
			16:07:40	30.11	20.14	125.37	0.35	0.35	844	2422		
			16:07:41	30.13	20.14	125.16	0.07	0.07	844	12616		
			16:07:42	30.09	20.14	125.11	0.15	0.15	844	5777		
			16:07:43	30.12	20.14	125.36	0.64	0.19	844	4354		
			16:07:44	30.14	20.14	125.71	2.27	1.66	844	509		
			16:07:45	30.14	20.14	125.93	3.23	2.52	844	335		
			16:07:46	30.15	20.14	126.06	4.56	3.71	844	228		
			16:07:47	30.14	20.14	126.08	3.74	2.98	844	284		
			16:07:48	30.28	20.14	126.30	3.96	3.17	844	266		
			16:07:49	30.15	20.14	126.18	4.67	3.81	844	222	297	Inside discharge plume
			16:07:50	30.19	20.14	126.25	3.74	2.98	844	283		
			16:07:51	30.17	20.14	126.28	3.85	3.08	844	274		
			16:07:52	30.17	20.14	126.25	3.49	2.75	844	307		
			16:07:53	30.02	20.14	126.10	4.01	3.22	844	262		
			16:07:54	30.22	20.14	126.30	3.95	3.17	844	267		
			16:07:55	30.04	20.14	126.24	3.95	3.17	844	267		
			16:07:56	30.09	20.14	126.24	3.99	3.20	844	264		
			16:07:57	30.05	20.14	126.12	3.80	3.03	844	278		
			16:07:58	30.02	20.14	126.12	3.60	2.85	844	296		
			16:07:59	30.03	20.14	126.21	3.78	3.01	844	280		
			16:08:00	30.08	20.14	126.19	3.70	2.94	844	287		
			16:08:01	30.11	20.14	126.21	4.20	3.39	844	249		
			16:08:02	30.05	20.14	126.12	3.94	3.15	844	268		
			16:08:03	30.06	20.14	126.10	3.88	3.10	844	272		
			16:08:04	30.04	20.14	126.02	3.42	2.69	844	314		
			16:08:05	30.04	20.14	126.04	3.76	3.00	844	282		
			16:08:06	30.09	20.14	126.08	3.57	2.82	844	299		
			16:08:07	30.11	20.14	126.23	3.64	2.89	844	292		
			16:08:08	30.08	20.14	126.16	3.86	3.09	844	273		
			16:08:09	30.10	20.14	126.05	3.74	2.98	844	283		

**TABLE D-14**

Transect TRN-02 on September 21, 2022 (1606-1612 hours PDT) located along South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

68	Instantaneous Minimum Dilution in Profile
135	Minimum Average Dilution in Profile
334	Detected Plume Average Dilution
334	Transect Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:08:10	30.10	20.14	126.08	3.64	2.88	844	293		
			16:08:11	30.06	20.14	126.12	3.44	2.71	844	311		
			16:08:12	30.03	20.14	126.12	3.20	2.50	844	338		
			16:08:13	30.08	20.14	125.93	3.31	2.59	844	326		
			16:08:14	30.07	20.14	125.66	3.26	2.54	844	332		
			16:08:15	30.04	20.14	125.59	2.41	1.78	844	474		
			16:08:16	30.23	20.14	125.57	1.70	1.14	844	738		
			16:08:17	30.12	20.14	125.74	1.82	1.26	844	671		
			16:08:18	30.19	20.14	125.63	1.64	1.10	844	770		
			16:08:19	30.14	20.14	125.57	1.83	1.26	844	668		
			16:08:20	30.21	20.14	125.54	1.57	1.03	844	818		
			16:08:21	30.10	20.14	125.52	1.69	1.14	844	743		
			16:08:22	30.20	20.14	125.56	1.52	0.99	844	854		
			16:08:23	30.10	20.14	125.52	1.34	0.82	844	1028		
			16:08:24	30.17	20.14	125.55	1.84	1.27	844	665		
			16:08:25	30.19	20.14	125.59	1.96	1.38	844	612		
			16:08:26	30.14	20.14	125.59	1.96	1.38	844	611		
			16:08:27	30.15	20.14	125.64	1.54	1.00	844	845		
			16:08:28	30.19	20.14	125.71	2.04	1.45	844	581		
			16:08:29	30.10	20.14	125.62	2.00	1.41	844	598		Inside discharge plume
			16:08:30	30.13	20.14	125.52	2.01	1.43	844	591		
			16:08:31	30.11	20.14	125.26	2.30	1.68	844	501		
			16:08:32	30.16	20.15	125.13	0.97	0.49	844	1728		
			16:08:33	30.08	20.15	124.95	1.28	0.77	844	1101		
			16:08:34	30.17	20.15	125.30	0.30	0.30	844	2827		
			16:08:35	30.06	20.15	125.38	0.09	0.09	844	9295		
			16:08:36	30.12	20.15	125.83	1.48	0.95	844	886		
			16:08:37	30.01	20.14	125.91	1.71	1.16	844	728		
			16:08:38	30.01	20.14	125.84	0.66	0.22	844	3906		
			16:08:39	29.90	20.14	125.74	0.36	0.36	844	2331		
			16:08:40	29.90	20.14	126.08	1.28	0.77	844	1094		
			16:08:41	29.87	20.14	126.44	3.57	2.82	844	299		
			16:08:42	29.92	20.14	126.66	4.09	3.29	844	256		
			16:08:43	29.87	20.14	126.58	4.66	3.80	844	222		
			16:08:44	29.82	20.14	126.93	6.22	5.20	844	162		
			16:08:45	29.90	20.15	126.97	6.63	5.57	844	152	213	Inside discharge plume
			16:08:46	29.84	20.15	126.98	5.74	4.77	844	177		
			16:08:47	29.95	20.15	127.05	5.80	4.82	844	175		
			16:08:48	29.79	20.15	126.97	5.83	4.85	844	174		

**TABLE D-14**

Transect TRN-02 on September 21, 2022 (1606-1612 hours PDT) located along South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

68	Instantaneous Minimum Dilution in Profile
135	Minimum Average Dilution in Profile
334	Detected Plume Average Dilution
334	Transect Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:08:49	29.89	20.15	126.52	3.56	2.82	844	300		
			16:08:50	29.73	20.15	125.70	2.36	1.74	844	485		
			16:08:51	29.87	20.15	125.49	1.27	0.76	844	1106		
			16:08:52	29.78	20.15	125.53	1.25	0.75	844	1133		
			16:08:53	29.78	20.15	125.79	1.76	1.20	844	705		
			16:08:54	29.81	20.15	125.89	2.40	1.77	844	476		
			16:08:55	29.75	20.15	126.20	2.94	2.26	844	374		
			16:08:56	29.82	20.15	126.48	4.92	4.03	844	209		
			16:08:57	29.75	20.15	126.87	5.59	4.63	844	182		
			16:08:58	29.76	20.15	127.23	6.88	5.79	844	146		
			16:08:59	29.75	20.15	127.17	7.44	6.30	844	134		
			16:09:00	29.80	20.15	127.13	5.58	4.63	844	182		
			16:09:01	29.73	20.15	127.58	6.50	5.45	844	155		
			16:09:02	29.76	20.15	127.72	7.42	6.28	844	134		
			16:09:03	29.75	20.15	127.50	7.70	6.53	844	129		
			16:09:04	29.75	20.15	127.42	7.38	6.24	844	135		
			16:09:05	29.67	20.15	127.43	7.42	6.28	844	134		
			16:09:06	29.62	20.15	127.42	7.06	5.95	844	142		
			16:09:07	29.65	20.15	127.44	6.96	5.86	844	144		
			16:09:08	29.58	20.15	127.48	7.33	6.20	844	136		
			16:09:09	29.54	20.15	127.52	7.42	6.28	844	134		
			16:09:10	29.53	20.15	127.38	7.61	6.45	844	131		
			16:09:11	29.53	20.14	127.27	6.76	5.69	844	148		
			16:09:12	29.53	20.14	127.40	7.18	6.06	844	139		
			16:09:13	29.55	20.15	127.62	7.51	6.36	844	133	182	Discharge plume main body
			16:09:14	29.61	20.15	127.69	8.22	7.00	844	121		
			16:09:15	29.58	20.15	127.72	7.87	6.68	844	126		
			16:09:16	29.62	20.15	127.72	8.15	6.93	844	122		
			16:09:17	29.62	20.15	127.52	7.78	6.61	844	128		
			16:09:18	29.62	20.15	127.59	7.75	6.57	844	128		
			16:09:19	29.60	20.15	127.57	7.95	6.76	844	125		
			16:09:20	29.62	20.15	127.38	6.43	5.39	844	156		
			16:09:21	29.56	20.16	126.61	3.24	2.53	844	334		
			16:09:22	29.58	20.16	126.86	4.79	3.92	844	216		
			16:09:23	29.77	20.16	125.74	2.27	1.66	844	509		
			16:09:24	29.81	20.16	125.32	0.09	0.09	844	9367		
			16:09:25	29.90	20.16	125.47	0.17	0.17	844	5036		
			16:09:26	29.81	20.16	125.32	0.23	0.23	844	3694		
			16:09:27	30.07	20.16	125.24	0.31	0.31	844	2693		



**TABLE D-14**

Transect TRN-02 on September 21, 2022 (1606-1612 hours PDT) located along South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

68	Instantaneous Minimum Dilution in Profile
135	Minimum Average Dilution in Profile
334	Detected Plume Average Dilution
334	Transect Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:09:28	30.13	20.16	125.20	0.41	0.41	844	2045		
			16:09:29	30.15	20.16	125.52	2.61	1.96	844	431		
			16:09:30	30.11	20.16	125.95	3.79	3.02	844	279		
			16:09:31	30.21	20.16	126.40	3.43	2.69	844	313		
			16:09:32	30.11	20.16	126.06	2.94	2.26	844	374		
			16:09:33	30.15	20.16	126.13	2.34	1.72	844	492		
			16:09:34	30.18	20.16	126.10	2.30	1.68	844	502		
			16:09:35	30.08	20.16	126.06	2.50	1.86	844	453		
			16:09:36	30.25	20.16	126.21	3.17	2.47	844	342		
			16:09:37	30.14	20.16	125.97	3.37	2.65	844	319		
			16:09:38	30.08	20.16	125.97	2.98	2.30	844	367		
			16:09:39	30.06	20.16	125.76	2.65	2.00	844	421		
			16:09:40	30.11	20.16	126.61	3.95	3.17	844	267		
			16:09:41	30.12	20.17	126.62	3.31	2.60	844	325		
			16:09:42	30.01	20.16	126.17	3.72	2.96	844	285		
			16:09:43	30.13	20.16	126.23	4.44	3.61	844	234		
			16:09:44	30.00	20.16	126.45	5.76	4.79	844	176		
			16:09:45	29.99	20.16	127.25	5.44	4.50	844	187		
			16:09:46	30.00	20.17	127.95	6.35	5.32	844	159		
			16:09:47	29.89	20.17	127.97	7.84	6.66	844	127		
			16:09:48	29.88	20.17	127.79	7.07	5.96	844	142		
			16:09:49	29.94	20.17	128.57	8.01	6.81	844	124		
			16:09:50	29.77	20.17	128.27	7.38	6.24	844	135		
			16:09:51	29.68	20.17	127.81	8.14	6.93	844	122		
			16:09:52	29.69	20.17	128.84	12.06	10.44	844	81		
			16:09:53	29.76	20.18	128.90	11.61	10.03	844	84		
			16:09:54	29.74	20.18	129.82	13.56	11.79	844	72		
			16:09:55	29.72	20.18	129.37	12.69	11.01	844	77		
			16:09:56	29.70	20.18	129.64	13.10	11.37	844	74		
			16:09:57	29.82	20.18	129.53	12.19	10.56	844	80	135	Discharge plume main body
			16:09:58	29.73	20.18	129.32	10.59	9.13	844	92		
			16:09:59	29.72	20.18	129.49	12.68	11.00	844	77		
			16:10:00	29.74	20.18	129.36	12.77	11.07	844	76		
			16:10:01	29.78	20.18	129.82	11.08	9.56	844	88		
			16:10:02	29.70	20.18	129.62	10.44	8.99	844	94		
			16:10:03	29.73	20.18	129.47	12.66	10.98	844	77		
			16:10:04	29.67	20.18	129.72	13.10	11.37	844	74		
			16:10:05	29.76	20.18	129.85	13.69	11.90	844	71		
			16:10:06	29.72	20.18	129.91	13.12	11.39	844	74		

**TABLE D-14**

Transect TRN-02 on September 21, 2022 (1606-1612 hours PDT) located along South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

68	Instantaneous Minimum Dilution in Profile
135	Minimum Average Dilution in Profile
334	Detected Plume Average Dilution
334	Transect Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:10:07	29.70	20.18	129.93	13.81	12.01	844	70		
			16:10:08	29.72	20.18	130.01	14.19	12.35	844	68		
			16:10:09	29.62	20.18	130.14	7.42	6.28	844	134		
			16:10:10	29.71	20.18	130.01	7.06	5.95	844	142		
			16:10:11	29.67	20.18	130.06	6.96	5.86	844	144		
			16:10:12	29.74	20.18	130.08	7.33	6.20	844	136		
			16:10:13	29.67	20.18	130.23	7.42	6.28	844	134		
			16:10:14	29.73	20.18	130.04	7.61	6.45	844	131		
			16:10:15	29.72	20.18	130.23	6.76	5.69	844	148		
			16:10:16	29.81	20.18	130.25	7.18	6.06	844	139		
			16:10:17	29.79	20.17	130.13	7.51	6.36	844	133		
			16:10:18	29.85	20.17	129.70	8.22	7.00	844	121		
			16:10:19	29.84	20.17	129.95	7.87	6.68	844	126		
			16:10:20	29.87	20.17	129.60	12.96	11.25	844	75		
			16:10:21	29.75	20.17	129.17	11.64	10.07	844	84		
			16:10:22	29.80	20.17	128.82	8.58	7.32	844	115		
			16:10:23	29.77	20.17	128.91	6.74	5.67	844	149		
			16:10:24	29.83	20.17	128.12	6.75	5.68	844	149		
			16:10:25	29.76	20.17	127.50	7.20	6.08	844	139		
			16:10:26	29.77	20.17	127.86	8.45	7.20	844	117		
			16:10:27	29.78	20.17	127.86	8.46	7.21	844	117		
			16:10:28	29.82	20.17	128.37	9.25	7.92	844	107		
			16:10:29	29.76	20.17	129.03	11.04	9.53	844	89		
			16:10:30	29.71	20.17	128.86	11.70	10.12	844	83		
			16:10:31	29.81	20.17	128.59	10.36	8.91	844	95		
			16:10:32	29.88	20.17	128.74	11.19	9.66	844	87		
			16:10:33	29.74	20.16	128.42	11.36	9.81	844	86		
			16:10:34	29.69	20.16	128.74	10.65	9.18	844	92		
			16:10:35	29.90	20.16	128.94	10.13	8.71	844	97		
			16:10:36	29.83	20.17	128.67	10.90	9.40	844	90		
			16:10:37	29.81	20.18	128.37	9.77	8.39	844	101		
			16:10:38	29.75	20.18	128.89	10.67	9.20	844	92		
			16:10:39	29.78	20.18	128.96	11.41	9.86	844	86		
			16:10:40	29.79	20.18	129.22	11.32	9.78	844	86		
			16:10:41	29.74	20.19	129.49	11.69	10.11	844	83		
			16:10:42	29.61	20.19	129.51	12.84	11.14	844	76		
			16:10:43	29.62	20.19	129.66	11.57	10.00	844	84		
			16:10:44	29.72	20.19	130.00	13.63	11.85	844	71		
			16:10:45	29.57	20.20	130.32	7.42	6.28	844	134		

**TABLE D-14**

Transect TRN-02 on September 21, 2022 (1606-1612 hours PDT) located along South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

68	Instantaneous Minimum Dilution in Profile
135	Minimum Average Dilution in Profile
334	Detected Plume Average Dilution
334	Transect Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:10:46	29.56	20.20	131.04	7.06	5.95	844	142		
			16:10:47	29.65	20.20	131.59	6.96	5.86	844	144		
			16:10:48	29.68	20.21	132.17	7.33	6.20	844	136		
			16:10:49	29.60	20.20	132.26	7.42	6.28	844	134		
			16:10:50	29.60	20.20	132.26	7.61	6.45	844	131		
			16:10:51	29.66	20.20	132.05	6.76	5.69	844	148		
			16:10:52	29.62	20.20	130.11	7.18	6.06	844	139		
			16:10:53	29.60	20.20	128.48	7.51	6.36	844	133		
			16:10:54	29.51	20.19	127.48	8.22	7.00	844	121		
			16:10:55	29.46	20.19	127.60	7.87	6.68	844	126		
			16:10:56	29.41	20.20	128.10	9.36	8.02	844	105		
			16:10:57	29.40	20.20	129.02	11.08	9.56	844	88		
			16:10:58	29.27	20.20	129.34	11.46	9.90	844	85		
			16:10:59	29.33	20.20	128.61	9.84	8.45	844	100		
			16:11:00	29.40	20.19	128.00	6.96	5.87	844	144		
			16:11:01	29.43	20.19	128.18	8.77	7.49	844	113		
			16:11:02	29.35	20.19	128.15	8.91	7.62	844	111		
			16:11:03	29.49	20.19	128.25	9.90	8.50	844	99		
			16:11:04	29.72	20.19	128.47	11.94	10.33	844	82		
			16:11:05	29.84	20.19	128.61	11.09	9.57	844	88		
			16:11:06	29.85	20.19	129.26	12.62	10.95	844	77		
			16:11:07	30.01	20.19	129.37	12.57	10.90	844	77		
			16:11:08	30.04	20.20	129.15	10.96	9.46	844	89		
			16:11:09	30.14	20.20	128.84	11.28	9.74	844	87		
			16:11:10	30.11	20.19	128.41	10.58	9.12	844	93		
			16:11:11	30.17	20.19	128.07	8.43	7.19	844	117		
			16:11:12	30.18	20.19	127.86	7.20	6.08	844	139		
			16:11:13	30.18	20.19	128.09	7.10	5.99	844	141		
			16:11:14	30.16	20.19	128.27	7.43	6.29	844	134		
			16:11:15	30.14	20.19	128.03	8.12	6.91	844	122		
			16:11:16	30.12	20.19	127.98	8.28	7.05	844	120		
			16:11:17	30.17	20.19	128.07	8.39	7.15	844	118		
			16:11:18	30.12	20.18	128.11	8.93	7.63	844	111		
			16:11:19	30.12	20.18	128.20	9.23	7.90	844	107		
			16:11:20	30.01	20.18	128.36	9.29	7.95	844	106		
			16:11:21	30.17	20.18	128.53	9.36	8.02	844	105		
			16:11:22	30.07	20.18	128.35	9.16	7.84	844	108		
			16:11:23	30.03	20.18	128.46	10.01	8.60	844	98		
			16:11:24	30.06	20.18	128.53	10.84	9.34	844	90		

**TABLE D-14**

Transect TRN-02 on September 21, 2022 (1606-1612 hours PDT) located along South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

68	Instantaneous Minimum Dilution in Profile
135	Minimum Average Dilution in Profile
334	Detected Plume Average Dilution
334	Transect Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:11:25	29.97	20.17	128.74	11.04	9.53	844	89		
			16:11:26	29.96	20.17	128.84	11.52	9.96	844	85		
			16:11:27	30.00	20.17	129.03	11.72	10.14	844	83		
			16:11:28	29.90	20.17	129.13	11.51	9.95	844	85		
			16:11:29	29.89	20.17	129.10	11.59	10.02	844	84		
			16:11:30	29.95	20.17	129.12	11.88	10.28	844	82		
			16:11:31	30.01	20.17	129.11	11.73	10.15	844	83		
			16:11:32	29.84	20.18	129.17	11.47	9.92	844	85		
			16:11:33	29.78	20.18	129.08	11.91	10.31	844	82		
			16:11:34	29.87	20.18	129.05	11.75	10.16	844	83		
			16:11:35	29.78	20.17	128.89	11.64	10.06	844	84		
			16:11:36	29.70	20.17	128.78	11.38	9.83	844	86		
			16:11:37	29.63	20.17	128.59	11.49	9.93	844	85		
			16:11:38	29.65	20.17	128.15	10.87	9.38	844	90		
			16:11:39	29.59	20.17	128.47	10.87	9.37	844	90		
			16:11:40	29.46	20.17	128.57	9.90	8.50	844	99		
			16:11:41	29.47	20.17	128.50	9.37	8.03	844	105		
			16:11:42	29.44	20.17	128.27	8.34	7.10	844	119		
			16:11:43	29.43	20.17	127.36	6.99	5.90	844	143		
			16:11:44	29.34	20.17	127.54	7.03	5.93	844	142		
			16:11:45	29.35	20.17	127.79	7.53	6.37	844	132		
			16:11:46	29.30	20.17	126.28	5.94	4.95	844	170		
			16:11:47	29.26	20.16	125.30	0.81	0.35	844	2409		
			16:11:48	29.26	20.16	124.78	0.02	0.02	844	46630		West Edge of Plume
			16:11:49	29.32	20.17	124.74	0.02	0.02	844	45622		
			16:11:50	29.17	20.16	124.70	0.04	0.04	844	23060		
			16:11:51	29.27	20.16	124.65	0.02	0.02	844	47684		
			16:11:52	29.10	20.16	124.63	0.02	0.02	844	46630		
			16:11:53	29.19	20.16	124.61	0.02	0.02	844	47151		
			16:11:54	29.08	20.16	124.63	0.02	0.02	844	43061		
			16:11:55	29.11	20.16	124.67	0.02	0.02	844	43731		
			16:11:56	29.14	20.16	124.61	0.02	0.02	844	44188		
			16:11:57	29.11	20.16	124.65	0.02	0.02	844	49647		
			16:11:58	29.14	20.16	124.59	0.02	0.02	844	47955		
			16:11:59	29.38	20.16	124.59	0.02	0.02	844	49070		
			16:12:00	29.41	20.16	124.63	0.02	0.02	844	42843		
			16:12:01	29.53	20.16	124.59	0.02	0.02	844	46120		
			16:12:02	29.62	20.16	124.61	0.02	0.02	844	46630		
			16:12:03	29.79	20.16	124.61	0.02	0.02	844	44656		

**TABLE D-14**

Transect TRN-02 on September 21, 2022 (1606-1612 hours PDT) located along South MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

68	Instantaneous Minimum Dilution in Profile
135	Minimum Average Dilution in Profile
334	Detected Plume Average Dilution
334	Transect Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:12:04	29.70	20.16	124.57	0.02	0.02	844	43731		
			16:12:05	29.79	20.15	124.56	0.02	0.02	844	44188		
			16:12:06	29.79	20.15	124.59	0.02	0.02	844	46120		
			16:12:07	29.95	20.15	124.59	0.02	0.02	844	44656		
			16:12:08	29.84	20.15	124.55	0.02	0.02	844	45134		
			16:12:09	29.91	20.15	124.59	0.02	0.02	844	44656		
			16:12:10	29.88	20.15	124.61	0.02	0.02	844	46630		
			16:12:11	29.94	20.15	124.63	0.02	0.02	844	42843		
			16:12:12	29.92	20.15	124.59	0.03	0.03	844	24323		
			16:12:13	29.97	20.15	124.59	0.12	0.12	844	7263		
			16:12:14	29.93	20.16	124.63	0.02	0.02	844	49070		
			16:12:15	29.88	20.15	124.59	0.02	0.02	844	45134		
			16:12:16	29.95	20.15	124.61	0.02	0.02	844	50238		
			16:12:17	29.95	20.16	124.59	0.02	0.02	844	45134		
			16:12:18	29.88	20.16	124.61	0.02	0.02	844	47416		
			16:12:19	29.99	20.15	124.57	0.02	0.02	844	42200		
			16:12:20	29.94	20.16	124.65	0.02	0.02	844	49357		

**TABLE D-15**

Profile PRO-11 on September 21, 2022 (1624-1630 hours PDT) located at South MZB (242 feet from Outfall Diffuser and SE Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-11 (South Mixing Zone Boundary - 242 ft from Diffuser and SE of mid-point) (Located on inshore slope)	27 ft	0.06 m/sec 178 deg. (mag.) Late Flood tide	16:24:29	2.44	20.80	125.51	0.02	0.02	850	43590		No dye plume detected near surface
			16:24:30	2.74	20.74	125.41	0.03	0.03	850	26235		
			16:24:31	2.59	20.72	125.38	0.09	0.09	850	9341		
			16:24:32	2.51	20.69	125.30	0.02	0.02	850	50595		
			16:24:33	2.52	20.65	125.24	0.02	0.02	850	43590		
			16:24:34	2.55	20.64	125.22	0.02	0.02	850	44503		
			16:24:35	2.52	20.64	125.20	0.02	0.02	850	52469		
			16:24:36	2.58	20.64	125.22	0.02	0.02	850	40865		
			16:24:37	2.51	20.64	125.18	0.02	0.02	850	42929		
			16:24:38	2.47	20.64	125.13	0.02	0.02	850	45946		
			16:24:39	2.40	20.64	125.13	0.02	0.02	850	44041		
			16:24:40	2.42	20.64	125.13	0.02	0.02	850	45946		
			16:24:41	2.41	20.62	125.16	0.02	0.02	850	47486		
			16:24:42	2.50	20.60	125.09	0.02	0.02	850	46448		
			16:24:43	2.28	20.59	125.09	0.02	0.02	850	41262		
			16:24:44	2.30	20.59	125.01	0.02	0.02	850	45946		
			16:24:45	2.24	20.59	125.03	0.02	0.02	850	43367		
			16:24:46	2.13	20.59	125.03	0.02	0.02	850	45946		
			16:24:47	2.20	20.59	125.01	0.02	0.02	850	43367		
			16:24:48	2.13	20.58	124.96	0.02	0.02	850	48295		
			16:24:49	2.21	20.57	125.01	0.02	0.02	850	49419		
			16:24:50	2.36	20.58	124.99	0.02	0.02	850	46448		
			16:24:51	2.46	20.58	125.07	0.02	0.02	850	45455		
			16:24:52	2.43	20.60	125.13	0.02	0.02	850	45455		
			16:24:53	2.46	20.61	125.18	0.02	0.02	850	46961		
			16:24:54	2.46	20.62	125.16	0.02	0.02	850	45455		
			16:24:55	2.47	20.62	125.18	0.02	0.02	850	42079		
			16:24:56	2.49	20.63	125.20	0.02	0.02	850	44974		
			16:24:57	2.46	20.64	125.20	0.02	0.02	850	44974		
			16:24:58	2.47	20.64	125.26	0.02	0.02	850	46448		
16:24:59	2.46	20.65	125.30	0.02	0.02	850	42714					
16:25:00	2.46	20.66	125.30	0.02	0.02	850	43147					
16:25:01	2.43	20.67	125.32	0.02	0.02	850	42500					
16:25:02	2.44	20.67	125.20	0.02	0.02	850	48023					
16:25:03	2.43	20.66	125.18	0.02	0.02	850	45455					
16:25:04	2.46	20.65	125.16	0.02	0.02	850	50000					
16:25:05	2.56	20.65	125.18	0.02	0.02	850	50595					
16:25:06	3.49	20.65	125.22	0.39	0.39	850	2168					
16:25:07	6.57	20.58	124.98	0.51	0.08	850	10487					

**TABLE D-15**

Profile PRO-11 on September 21, 2022 (1624-1630 hours PDT) located at South MZB (242 feet from Outfall Diffuser and SE  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:25:08	7.64	20.52	125.05	0.02	0.02	850	43590		No dye plume detected at 8 ft
			16:25:09	8.03	20.55	125.07	0.02	0.02	850	50000		
			16:25:10	8.00	20.58	125.11	0.02	0.02	850	46448		
			16:25:11	8.00	20.59	125.18	0.02	0.02	850	45946		
			16:25:12	8.04	20.60	125.01	0.02	0.02	850	46448		
			16:25:13	8.05	20.41	124.40	0.02	0.02	850	43814		
			16:25:14	8.04	20.34	124.36	0.02	0.02	850	44041		
			16:25:15	7.99	20.34	124.42	0.02	0.02	850	44974		
			16:25:16	8.04	20.34	124.36	0.02	0.02	850	45946		
			16:25:17	8.01	20.33	124.38	0.02	0.02	850	50000		
			16:25:18	7.89	20.33	124.40	0.02	0.02	850	44041		
			16:25:19	8.08	20.34	124.36	0.02	0.02	850	43147		
			16:25:20	7.94	20.34	124.36	0.02	0.02	850	43590		
			16:25:21	8.02	20.34	124.40	0.02	0.02	850	46448		
			16:25:22	7.97	20.34	124.40	0.02	0.02	850	45946		
			16:25:23	8.10	20.34	124.42	0.02	0.02	850	48851		
			16:25:24	7.99	20.34	124.40	0.02	0.02	850	45455		
			16:25:25	8.03	20.34	124.38	0.02	0.02	850	47486		
			16:25:26	8.03	20.34	124.40	0.02	0.02	850	47222		
			16:25:27	8.02	20.34	124.40	0.02	0.02	850	48295		
			16:25:28	8.07	20.34	124.38	0.02	0.02	850	42500		
			16:25:29	8.01	20.34	124.38	0.02	0.02	850	46961		
			16:25:30	8.05	20.34	124.42	0.02	0.02	850	45455		
			16:25:31	8.07	20.34	124.40	0.02	0.02	850	48023		
			16:25:32	8.10	20.34	124.44	0.02	0.02	850	44974		
			16:25:33	8.00	20.35	124.44	0.02	0.02	850	45455		
			16:25:34	8.12	20.34	124.36	0.02	0.02	850	42079		
			16:25:35	8.08	20.35	124.40	0.02	0.02	850	45946		
			16:25:36	8.04	20.35	124.38	0.02	0.02	850	45455		
			16:25:37	8.08	20.35	124.42	0.02	0.02	850	44041		
			16:25:38	8.09	20.34	124.40	0.02	0.02	850	44041		
			16:25:39	8.04	20.34	124.38	0.02	0.02	850	46961		
			16:25:40	8.08	20.34	124.40	0.02	0.02	850	50000		
			16:25:41	8.07	20.34	124.36	0.02	0.02	850	45455		
			16:25:42	8.05	20.34	124.36	0.02	0.02	850	44974		
			16:25:43	8.13	20.34	124.38	0.02	0.02	850	44974		
			16:25:44	8.02	20.34	124.40	0.02	0.02	850	46448		
			16:25:45	8.05	20.34	124.38	0.02	0.02	850	44974		
			16:25:46	8.06	20.34	124.38	0.02	0.02	850	43814		

**TABLE D-15**

Profile PRO-11 on September 21, 2022 (1624-1630 hours PDT) located at South MZB (242 feet from Outfall Diffuser and SE Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:25:47	8.09	20.34	124.36	0.02	0.02	850	44503		
			16:25:48	8.06	20.34	124.40	0.02	0.02	850	47486		
			16:25:49	8.06	20.34	124.38	0.02	0.02	850	44503		
			16:25:50	8.06	20.34	124.36	0.02	0.02	850	48571		
			16:25:51	8.07	20.34	124.38	0.02	0.02	850	47222		
			16:25:52	8.05	20.34	124.40	0.02	0.02	850	41667		
			16:25:53	8.08	20.34	124.36	0.02	0.02	850	46961		
			16:25:54	8.06	20.34	124.42	0.02	0.02	850	47486		
			16:25:55	8.08	20.34	124.36	0.02	0.02	850	45455		
			16:25:56	8.02	20.34	124.36	0.02	0.02	850	44041		
			16:25:57	8.05	20.34	124.40	0.02	0.02	850	48023		
			16:25:58	8.05	20.34	124.40	0.02	0.02	850	49419		
			16:25:59	8.04	20.34	124.44	0.02	0.02	850	43814		
			16:26:00	8.03	20.34	124.40	0.02	0.02	850	46961		
			16:26:01	8.08	20.34	124.38	0.02	0.02	850	49708		
			16:26:02	7.99	20.33	124.36	0.02	0.02	850	48851		
			16:26:03	8.03	20.32	124.36	0.02	0.02	850	43147		
			16:26:04	8.01	20.31	124.38	0.02	0.02	850	44503		
			16:26:05	8.04	20.31	124.40	0.02	0.02	850	42929		
			16:26:06	7.99	20.32	124.42	0.02	0.02	850	44503		
			16:26:07	8.01	20.32	124.36	0.02	0.02	850	45946		
			16:26:08	7.99	20.32	124.40	0.02	0.02	850	48023		
			16:26:09	8.05	20.33	124.44	0.02	0.02	850	44041		
			16:26:10	7.96	20.32	124.38	0.02	0.02	850	48571		
			16:26:11	8.00	20.32	124.40	0.02	0.02	850	44503		
			16:26:12	8.00	20.32	124.40	0.02	0.02	850	46961		
			16:26:13	8.03	20.32	124.38	0.02	0.02	850	45946		
			16:26:14	7.99	20.31	124.37	0.02	0.02	850	44503		
			16:26:15	7.98	20.30	124.38	0.02	0.02	850	48571		
			16:26:16	8.03	20.31	124.36	0.02	0.02	850	46448		
			16:26:17	8.03	20.30	124.34	0.02	0.02	850	44974		
			16:26:18	8.05	20.31	124.44	0.02	0.02	850	45455		
			16:26:19	8.00	20.32	124.40	0.02	0.02	850	40865		
			16:26:20	8.02	20.30	124.34	0.02	0.02	850	46448		
			16:26:21	7.87	20.26	124.30	0.02	0.02	850	49708		
			16:26:22	8.00	20.26	124.27	0.02	0.02	850	42929		
			16:26:23	7.97	20.28	124.29	0.02	0.02	850	44503		
			16:26:24	8.00	20.28	124.32	0.02	0.02	850	42079		
			16:26:25	8.11	20.28	124.34	0.02	0.02	850	46961		



**TABLE D-15**

Profile PRO-11 on September 21, 2022 (1624-1630 hours PDT) located at South MZB (242 feet from Outfall Diffuser and SE Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:26:26	8.30	20.28	124.34	0.02	0.02	850	42500		No dye plume detected at 13 ft
			16:26:27	8.65	20.29	124.32	0.02	0.02	850	45455		
			16:26:28	10.86	20.25	124.27	0.02	0.02	850	46961		
			16:26:29	12.89	20.21	124.29	0.02	0.02	850	47486		
			16:26:30	13.16	20.20	124.27	0.02	0.02	850	43814		
			16:26:31	13.17	20.21	124.27	0.02	0.02	850	48851		
			16:26:32	13.27	20.20	124.30	0.02	0.02	850	44271		
			16:26:33	13.28	20.20	124.30	0.02	0.02	850	44974		
			16:26:34	13.29	20.20	124.34	0.02	0.02	850	47486		
			16:26:35	13.28	20.20	124.31	0.02	0.02	850	46448		
			16:26:36	13.30	20.19	124.34	0.02	0.02	850	43590		
			16:26:37	13.27	20.19	124.34	0.02	0.02	850	46448		
			16:26:38	13.23	20.19	124.36	0.02	0.02	850	48295		
			16:26:39	13.30	20.19	124.38	0.02	0.02	850	50595		
			16:26:40	13.30	20.19	124.38	0.02	0.02	850	44503		
			16:26:41	13.24	20.19	124.36	0.02	0.02	850	44974		
			16:26:42	13.29	20.19	124.38	0.02	0.02	850	42500		
			16:26:43	13.27	20.19	124.36	0.02	0.02	850	45455		
			16:26:44	13.22	20.19	124.34	0.02	0.02	850	44041		
			16:26:45	13.27	20.19	124.38	0.02	0.02	850	45455		
			16:26:46	13.20	20.19	124.34	0.02	0.02	850	42500		
			16:26:47	13.21	20.19	124.38	0.02	0.02	850	42500		
			16:26:48	13.23	20.19	124.34	0.02	0.02	850	46448		
			16:26:49	13.26	20.19	124.32	0.02	0.02	850	44041		
			16:26:50	13.23	20.19	124.36	0.02	0.02	850	46448		
			16:26:51	13.27	20.19	124.36	0.02	0.02	850	48851		
			16:26:52	13.25	20.19	124.40	0.02	0.02	850	42500		
			16:26:53	13.25	20.19	124.40	0.02	0.02	850	48023		
			16:26:54	13.26	20.18	124.40	0.02	0.02	850	48851		
			16:26:55	13.24	20.18	124.49	0.02	0.02	850	50000		
			16:26:56	13.19	20.18	124.46	0.02	0.02	850	45946		
			16:26:57	13.56	20.18	124.40	0.02	0.02	850	45455		
			16:26:58	13.70	20.18	124.40	0.02	0.02	850	42929		
			16:26:59	13.60	20.18	124.36	0.02	0.02	850	44503		
			16:27:00	13.69	20.18	124.42	0.02	0.02	850	45946		
			16:27:01	15.65	20.18	124.49	0.02	0.02	850	46961		
			16:27:02	18.24	20.16	124.55	0.02	0.02	850	44041		
			16:27:03	19.04	20.16	124.55	0.02	0.02	850	44737		
			16:27:04	19.47	20.15	124.65	0.02	0.02	850	44503	No dye plume detected at 19 ft	

**TABLE D-15**

Profile PRO-11 on September 21, 2022 (1624-1630 hours PDT) located at South MZB (242 feet from Outfall Diffuser and SE  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:27:05	19.60	20.15	124.59	0.02	0.02	850	51829		
			16:27:06	19.58	20.15	124.59	0.02	0.02	850	47486		
			16:27:07	19.61	20.15	124.59	0.02	0.02	850	44041		
			16:27:08	19.58	20.16	124.59	0.02	0.02	850	46961		
			16:27:09	19.55	20.16	124.61	0.02	0.02	850	50595		
			16:27:10	19.59	20.16	124.61	0.02	0.02	850	49419		
			16:27:11	19.56	20.16	124.72	0.02	0.02	850	45455		
			16:27:12	19.53	20.15	124.63	0.02	0.02	850	46448		
			16:27:13	19.53	20.15	124.63	0.02	0.02	850	46448		
			16:27:14	19.53	20.15	124.61	0.02	0.02	850	43590		
			16:27:15	19.52	20.15	124.63	0.02	0.02	850	46961		
			16:27:16	19.52	20.15	124.72	0.02	0.02	850	49708		
			16:27:17	19.59	20.14	124.68	0.02	0.02	850	40476		
			16:27:18	19.55	20.14	124.65	0.02	0.02	850	46448		
			16:27:19	19.57	20.15	124.63	0.02	0.02	850	50595		
			16:27:20	19.59	20.15	124.68	0.02	0.02	850	48571		
			16:27:21	19.60	20.15	124.68	0.02	0.02	850	44974		
			16:27:22	19.50	20.15	124.65	0.02	0.02	850	46961		
			16:27:23	19.63	20.15	124.72	0.02	0.02	850	47486		
			16:27:24	19.53	20.14	124.70	0.02	0.02	850	45946		
			16:27:25	19.52	20.14	124.70	0.02	0.02	850	44974		
			16:27:26	19.64	20.14	124.68	0.03	0.03	850	28620		
			16:27:27	19.53	20.14	124.70	0.02	0.02	850	49419		
			16:27:28	19.57	20.14	124.72	0.02	0.02	850	48023		
			16:27:29	19.60	20.14	124.72	0.02	0.02	850	50595		
			16:27:30	19.60	20.14	124.70	0.02	0.02	850	50000		
			16:27:31	19.51	20.14	124.70	0.02	0.02	850	45455		
			16:27:32	19.66	20.14	124.72	0.02	0.02	850	43147		
			16:27:33	19.58	20.14	124.73	0.02	0.02	850	47486		
			16:27:34	19.54	20.14	124.68	0.02	0.02	850	49419		
			16:27:35	19.65	20.14	124.72	0.02	0.02	850	46961		
			16:27:36	19.56	20.14	124.68	0.02	0.02	850	44503		
			16:27:37	19.50	20.14	124.70	0.02	0.02	850	48571		
			16:27:38	19.64	20.14	124.72	0.02	0.02	850	45946		
			16:27:39	19.53	20.14	124.70	0.02	0.02	850	45455		
			16:27:40	19.51	20.15	124.68	0.02	0.02	850	45455		
			16:27:41	19.61	20.15	124.65	0.02	0.02	850	47486		
			16:27:42	19.53	20.15	124.70	0.02	0.02	850	43590		
			16:27:43	19.49	20.15	124.68	0.02	0.02	850	43814		

**TABLE D-15**

Profile PRO-11 on September 21, 2022 (1624-1630 hours PDT) located at South MZB (242 feet from Outfall Diffuser and SE Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:27:44	19.63	20.15	124.68	0.02	0.02	850	46961		
			16:27:45	19.53	20.15	124.63	0.02	0.02	850	46961		
			16:27:46	19.50	20.15	124.63	0.02	0.02	850	47486		
			16:27:47	19.63	20.15	124.70	0.02	0.02	850	46448		
			16:27:48	19.53	20.15	124.70	0.02	0.02	850	46961		
			16:27:49	19.53	20.15	124.65	0.02	0.02	850	44041		
			16:27:50	19.65	20.15	124.70	0.02	0.02	850	46448		
			16:27:51	19.63	20.15	124.65	0.02	0.02	850	45946		
			16:27:52	19.48	20.16	124.70	0.02	0.02	850	44041		
			16:27:53	19.64	20.16	124.68	0.02	0.02	850	45455		
			16:27:54	19.61	20.16	124.65	0.02	0.02	850	46961		
			16:27:55	19.50	20.16	124.65	0.02	0.02	850	44041		
			16:27:56	19.60	20.16	124.59	0.02	0.02	850	48851		
			16:27:57	19.69	20.16	124.63	0.02	0.02	850	50595		
			16:27:58	19.51	20.16	124.65	0.02	0.02	850	50000		
			16:27:59	19.61	20.16	124.59	0.02	0.02	850	42079		
			16:28:00	19.68	20.16	124.61	0.02	0.02	850	51205		
			16:28:01	19.54	20.16	124.61	0.02	0.02	850	44041		
			16:28:02	19.53	20.16	124.64	0.02	0.02	850	50595		
			16:28:03	19.62	20.16	124.61	0.02	0.02	850	43590		
			16:28:04	19.56	20.16	124.63	0.02	0.02	850	47486		
			16:28:05	19.48	20.16	124.61	0.02	0.02	850	47753		
			16:28:06	19.65	20.15	124.63	0.02	0.02	850	44503		
			16:28:07	19.54	20.14	124.68	0.02	0.02	850	48295		
			16:28:08	19.46	20.15	124.63	0.02	0.02	850	44041		
			16:28:09	19.56	20.14	124.68	0.02	0.02	850	48571		
			16:28:10	19.55	20.14	124.65	0.02	0.02	850	43147		
			16:28:11	19.44	20.15	124.68	0.02	0.02	850	51205		
			16:28:12	19.49	20.15	124.67	0.02	0.02	850	45455		
			16:28:13	19.56	20.15	124.65	0.02	0.02	850	46448		
			16:28:14	19.36	20.15	124.70	0.02	0.02	850	46961		
			16:28:15	19.46	20.14	124.72	0.02	0.02	850	45455		
			16:28:16	19.56	20.14	124.72	0.02	0.02	850	45946		
			16:28:17	19.40	20.14	124.65	0.02	0.02	850	47486		
			16:28:18	19.35	20.15	124.68	0.02	0.02	850	48295		
			16:28:19	19.52	20.15	124.70	0.17	0.17	850	4879		
			16:28:20	19.37	20.15	124.68	0.02	0.02	850	47486		
			16:28:21	19.40	20.15	124.63	0.02	0.02	850	45455		
			16:28:22	19.49	20.16	124.57	0.02	0.02	850	48571		

**TABLE D-15**

Profile PRO-11 on September 21, 2022 (1624-1630 hours PDT) located at South MZB (242 feet from Outfall Diffuser and SE Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:28:23	19.46	20.16	124.61	0.02	0.02	850	49708		
			16:28:24	19.37	20.16	124.57	0.02	0.02	850	50595		
			16:28:25	19.50	20.16	124.57	0.02	0.02	850	48571		
			16:28:26	19.46	20.16	124.59	0.02	0.02	850	50000		
			16:28:27	19.39	20.15	124.61	0.02	0.02	850	44974		
			16:28:28	19.53	20.16	124.59	0.02	0.02	850	44041		
			16:28:29	19.54	20.16	124.59	0.02	0.02	850	46448		
			16:28:30	19.47	20.16	124.55	0.02	0.02	850	45455		
			16:28:31	19.55	20.16	124.54	0.02	0.02	850	47486		
			16:28:32	19.57	20.16	124.55	0.02	0.02	850	46448		
			16:28:33	19.52	20.16	124.51	0.02	0.02	850	44041		
			16:28:34	19.53	20.16	124.53	0.02	0.02	850	46961		
			16:28:35	19.57	20.16	124.53	0.02	0.02	850	44041		
			16:28:36	19.58	20.16	124.51	0.02	0.02	850	43590		
			16:28:37	19.53	20.16	124.49	0.02	0.02	850	44503		
			16:28:38	19.57	20.16	124.51	0.02	0.02	850	45455		
			16:28:39	19.48	20.17	124.49	0.02	0.02	850	44737		
			16:28:40	19.44	20.17	124.49	0.02	0.02	850	48571		
			16:28:41	19.52	20.17	124.42	0.02	0.02	850	46448		
			16:28:42	19.49	20.17	124.49	0.02	0.02	850	44974		
			16:28:43	19.40	20.17	124.49	0.02	0.02	850	49419		
			16:28:44	19.48	20.17	124.44	0.02	0.02	850	45946		
			16:28:45	19.46	20.17	124.44	0.02	0.02	850	47486		
			16:28:46	19.36	20.17	124.44	0.02	0.02	850	46961		
			16:28:47	19.38	20.17	124.51	0.02	0.02	850	45455		
			16:28:48	19.38	20.17	124.42	0.02	0.02	850	49419		
			16:28:49	19.30	20.17	124.44	0.02	0.02	850	47486		
			16:28:50	19.38	20.16	124.40	0.02	0.02	850	45455		
			16:28:51	19.38	20.16	124.38	0.02	0.02	850	46448		
			16:28:52	19.33	20.17	124.38	0.02	0.02	850	42714		
			16:28:53	19.40	20.17	124.38	0.02	0.02	850	46961		
			16:28:54	19.42	20.17	124.36	0.02	0.02	850	48571		
			16:28:55	19.45	20.17	124.38	0.02	0.02	850	50000		
			16:28:56	19.42	20.17	124.36	0.02	0.02	850	50000		
			16:28:57	19.53	20.16	124.34	0.02	0.02	850	49133		
			16:28:58	19.57	20.17	124.38	0.02	0.02	850	50000		
			16:28:59	19.54	20.17	124.36	0.02	0.02	850	44503		
			16:29:00	19.85	20.17	124.32	0.02	0.02	850	48023		
			16:29:01	20.37	20.17	124.32	0.02	0.02	850	51205		

**TABLE D-15**

Profile PRO-11 on September 21, 2022 (1624-1630 hours PDT) located at South MZB (242 feet from Outfall Diffuser and SE Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:29:02	23.53	20.17	124.38	0.02	0.02	850	48851		No dye plume detected at 25 ft
			16:29:03	25.04	20.16	124.51	0.02	0.02	850	44974		
			16:29:04	25.25	20.16	124.46	0.02	0.02	850	51829		
			16:29:05	25.27	20.16	124.51	0.02	0.02	850	49708		
			16:29:06	25.22	20.15	124.46	0.02	0.02	850	46448		
			16:29:07	25.15	20.16	124.46	0.08	0.08	850	10954		
			16:29:08	25.11	20.16	124.46	0.20	0.20	850	4181		
			16:29:09	25.08	20.16	124.44	0.02	0.02	850	45946		
			16:29:10	25.04	20.16	124.46	0.02	0.02	850	48571		
			16:29:11	25.02	20.16	124.42	0.02	0.02	850	48023		
			16:29:12	24.95	20.16	124.44	0.02	0.02	850	48023		
			16:29:13	24.85	20.16	124.42	0.02	0.02	850	44503		
			16:29:14	24.81	20.16	124.40	0.02	0.02	850	47486		
			16:29:15	24.71	20.16	124.40	0.02	0.02	850	48571		
			16:29:16	24.67	20.16	124.42	0.02	0.02	850	46448		
			16:29:17	24.64	20.16	124.40	0.02	0.02	850	51829		
			16:29:18	24.60	20.16	124.42	0.02	0.02	850	47753		
			16:29:19	24.54	20.16	124.36	0.02	0.02	850	44041		
			16:29:20	24.61	20.16	124.34	0.02	0.02	850	44503		
			16:29:21	24.59	20.16	124.42	0.02	0.02	850	45455		
			16:29:22	24.70	20.16	124.44	0.02	0.02	850	45455		
			16:29:23	24.95	20.16	124.44	0.02	0.02	850	47486		
			16:29:24	24.98	20.16	124.49	0.02	0.02	850	42929		
			16:29:25	25.06	20.15	124.51	0.02	0.02	850	44974		
			16:29:26	25.19	20.15	124.55	0.02	0.02	850	41667		
			16:29:27	25.17	20.15	124.51	0.02	0.02	850	47486		
			16:29:28	25.23	20.15	124.44	0.17	0.17	850	4908		
			16:29:29	25.30	20.15	124.52	0.02	0.02	850	48851		
			16:29:30	25.13	20.15	124.51	0.02	0.02	850	43590		
			16:29:31	25.13	20.15	124.53	0.02	0.02	850	42929		
			16:29:32	25.19	20.15	124.53	0.07	0.07	850	12687		
			16:29:33	25.04	20.16	124.46	0.02	0.02	850	47486		
			16:29:34	25.07	20.16	124.51	0.02	0.02	850	53125		
			16:29:35	25.16	20.16	124.49	0.02	0.02	850	52469		
			16:29:36	25.03	20.16	124.55	0.02	0.02	850	47753		
			16:29:37	25.16	20.16	124.59	0.02	0.02	850	47486		
			16:29:38	25.25	20.15	124.63	0.32	0.32	850	2678		
			16:29:39	25.13	20.14	124.68	0.19	0.19	850	4575		
			16:29:40	25.32	20.14	124.65	0.02	0.02	850	48851		

**TABLE D-15**

Profile PRO-11 on September 21, 2022 (1624-1630 hours PDT) located at South MZB (242 feet from Outfall Diffuser and SE Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:29:41	25.31	20.14	124.65	0.02	0.02	850	48023		
			16:29:42	25.20	20.14	124.70	0.09	0.09	850	9953		
			16:29:43	25.28	20.14	124.68	0.02	0.02	850	46961		
			16:29:44	25.35	20.14	124.70	0.02	0.02	850	47486		
			16:29:45	25.26	20.14	124.72	0.02	0.02	850	48023		
			16:29:46	25.40	20.14	124.68	0.02	0.02	850	46961		
			16:29:47	25.37	20.14	124.70	0.02	0.02	850	45455		
			16:29:48	25.20	20.14	124.73	0.02	0.02	850	51205		
			16:29:49	25.42	20.14	124.72	0.02	0.02	850	47486		
			16:29:50	25.35	20.14	124.68	0.02	0.02	850	46961		
			16:29:51	25.26	20.14	124.70	0.02	0.02	850	45455		
			16:29:52	25.34	20.14	124.68	0.02	0.02	850	44503		
			16:29:53	25.27	20.14	124.68	0.02	0.02	850	39720		
			16:29:54	25.28	20.14	124.70	0.02	0.02	850	48023		
			16:29:55	25.33	20.14	124.70	0.02	0.02	850	45946		
			16:29:56	25.27	20.14	124.70	0.02	0.02	850	46961		
			16:29:57	25.24	20.14	124.73	0.02	0.02	850	50000		
			16:29:58	25.26	20.14	124.68	0.02	0.02	850	56667		

**TABLE D-16**

Profile PRO-12 on September 21, 2022 (1648-1702 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

77	Instantaneous Minimum Dilution in Profile
138	Minimum Average Dilution in Profile
149	Plume Average Dilution Detected
218	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-12 (North Mixing Zone Boundary - 242 ft from Diffuser and near mid-point)	50 ft	0.08 m/sec 350 deg. (mag.) Early Ebb Tide	16:48:09	2.02	20.52	126.25	3.43	2.70	890	330	367	Measured Plume Dilutions near Surface
			16:48:10	2.03	20.52	126.30	3.22	2.51	890	354		
			16:48:11	2.06	20.52	126.42	3.32	2.60	890	342		
			16:48:12	2.20	20.52	126.27	3.25	2.53	890	351		
			16:48:13	2.32	20.52	126.27	2.87	2.19	890	406		
			16:48:14	2.30	20.54	126.27	3.09	2.39	890	372		
			16:48:15	2.32	20.54	126.23	3.05	2.36	890	377		
			16:48:16	2.31	20.55	126.21	3.11	2.41	890	369		
			16:48:17	2.28	20.56	126.21	3.25	2.54	890	351		
			16:48:18	2.27	20.56	126.25	3.24	2.53	890	352		
			16:48:19	2.36	20.56	126.25	2.97	2.29	890	389		
			16:48:20	2.37	20.56	126.21	2.93	2.25	890	396		
			16:48:21	2.38	20.56	126.23	3.25	2.54	890	351		
			16:48:22	2.37	20.56	126.21	3.06	2.37	890	376		
			16:48:23	2.32	20.56	126.23	2.90	2.22	890	401		
			16:48:24	2.31	20.56	126.21	3.19	2.48	890	358		
			16:48:25	2.40	20.56	126.28	3.12	2.42	890	367		
			16:48:26	2.35	20.56	126.23	2.63	1.98	890	450		
			16:48:27	2.34	20.56	126.28	2.44	1.81	890	491		
			16:48:28	2.35	20.57	126.23	2.84	2.17	890	411		
			16:48:29	2.34	20.57	126.25	3.02	2.33	890	382		
			16:48:30	2.36	20.58	126.26	3.44	2.71	890	329		
			16:48:31	2.35	20.58	126.25	2.91	2.23	890	399		
			16:48:32	2.35	20.58	126.33	3.08	2.38	890	374		
			16:48:33	2.35	20.58	126.35	3.12	2.42	890	368		
			16:48:34	2.34	20.58	126.43	2.55	1.90	890	467		
			16:48:35	2.33	20.56	126.54	2.46	1.83	890	488		
			16:48:36	2.36	20.54	126.56	2.11	1.52	890	587		
			16:48:37	2.36	20.57	126.58	2.28	1.67	890	533		
			16:48:38	2.35	20.60	126.56	2.10	1.51	890	591		
16:48:39	2.33	20.63	126.62	2.32	1.70	890	523					
16:48:40	2.36	20.65	126.62	2.41	1.79	890	498					
16:48:41	2.27	20.65	126.64	1.99	1.41	890	631					
16:48:42	2.32	20.65	126.52	1.85	1.28	890	696					
16:48:43	2.33	20.64	126.64	1.89	1.32	890	676					
16:48:44	2.31	20.65	126.54	1.75	1.20	890	744					
16:48:45	2.38	20.64	126.66	1.91	1.34	890	665					
16:48:46	2.31	20.66	126.66	1.83	1.26	890	706					
16:48:47	2.30	20.67	126.64	1.85	1.28	890	695					
										521	Measured Plume Dilutions near Surface	

**TABLE D-16**

Profile PRO-12 on September 21, 2022 (1648-1702 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

77	Instantaneous Minimum Dilution in Profile
138	Minimum Average Dilution in Profile
149	Plume Average Dilution Detected
218	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:48:48	2.34	20.66	126.68	2.24	1.63	890	546		
			16:48:49	2.35	20.65	126.71	2.18	1.57	890	565		
			16:48:50	2.34	20.67	126.69	2.12	1.53	890	583		
			16:48:51	2.37	20.69	126.69	2.18	1.58	890	565		
			16:48:52	2.38	20.69	126.44	2.28	1.67	890	535		
			16:48:53	2.37	20.55	125.89	2.63	1.98	890	449		
			16:48:54	2.38	20.51	125.87	2.33	1.72	890	519		
			16:48:55	2.34	20.50	125.91	2.39	1.77	890	503		
			16:48:56	2.36	20.50	126.06	2.33	1.71	890	519		
			16:48:57	2.37	20.51	126.16	2.84	2.17	890	410		
			16:48:58	2.32	20.53	126.23	2.72	2.06	890	431		
			16:48:59	2.35	20.53	126.18	2.90	2.22	890	401		
			16:49:00	2.28	20.52	126.23	3.12	2.42	890	368		
			16:49:01	2.33	20.54	126.29	3.22	2.51	890	354		
			16:49:02	2.32	20.55	126.33	3.13	2.43	890	366		
			16:49:03	2.35	20.55	126.30	3.07	2.38	890	375		
			16:49:04	2.34	20.56	126.45	2.98	2.29	890	388		
			16:49:05	2.41	20.58	126.45	3.20	2.49	890	358		
			16:49:06	2.26	20.58	126.43	2.93	2.25	890	395		
			16:49:07	2.33	20.59	126.42	3.15	2.45	890	364		
			16:49:08	2.29	20.59	126.47	3.34	2.62	890	340		
			16:49:09	2.31	20.59	126.52	3.16	2.46	890	362		
			16:49:10	2.28	20.59	126.58	3.46	2.73	890	326		
			16:49:11	2.30	20.58	126.60	3.58	2.84	890	314	314	Measured Plume Dilutions near Surface
			16:49:12	2.30	20.57	126.56	3.24	2.53	890	352		
			16:49:13	2.30	20.57	126.47	3.20	2.49	890	357		
			16:49:14	2.32	20.57	126.45	3.38	2.66	890	335		
			16:49:15	2.32	20.57	126.41	3.61	2.86	890	311		
			16:49:16	2.32	20.57	126.44	3.15	2.44	890	364		
			16:49:17	2.31	20.57	126.52	3.46	2.73	890	326		
			16:49:18	2.32	20.57	126.47	3.50	2.76	890	323		
			16:49:19	2.37	20.57	126.52	3.35	2.63	890	339		
			16:49:20	2.29	20.58	126.56	3.21	2.50	890	356		
			16:49:21	2.26	20.58	126.56	3.67	2.91	890	306		
			16:49:22	2.28	20.57	126.52	3.73	2.97	890	300		
			16:49:23	2.32	20.57	126.47	3.59	2.85	890	313		
			16:49:24	2.26	20.56	126.54	4.14	3.33	890	267		
			16:49:25	2.37	20.55	126.61	4.10	3.30	890	269		
			16:49:26	2.35	20.54	126.69	4.30	3.48	890	256		



**TABLE D-16**

Profile PRO-12 on September 21, 2022 (1648-1702 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

77	Instantaneous Minimum Dilution in Profile
138	Minimum Average Dilution in Profile
149	Plume Average Dilution Detected
218	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:49:27	2.39	20.54	126.69	4.29	3.47	890	257		
			16:49:28	2.36	20.53	126.77	4.36	3.53	890	252		
			16:49:29	2.38	20.54	126.79	4.31	3.49	890	255		
			16:49:30	2.32	20.54	126.81	4.44	3.61	890	247		
			16:49:31	2.39	20.54	126.75	4.37	3.54	890	252		
			16:49:32	2.27	20.55	126.83	4.47	3.63	890	245		
			16:49:33	2.25	20.55	126.81	4.33	3.51	890	254		
			16:49:34	2.31	20.55	126.77	4.33	3.50	890	254		
			16:49:35	2.30	20.56	126.76	4.37	3.54	890	251		
			16:49:36	2.79	20.55	126.77	4.37	3.55	890	251		
			16:49:37	4.56	20.51	126.66	4.56	3.72	890	240		
			16:49:38	7.37	20.47	126.26	3.63	2.88	890	309		
			16:49:39	7.94	20.45	126.29	3.40	2.68	890	333		
			16:49:40	8.17	20.46	126.34	3.35	2.63	890	339		
			16:49:41	8.17	20.46	126.31	3.07	2.38	890	374		
			16:49:42	8.11	20.45	125.93	2.93	2.25	890	395		
			16:49:43	8.19	20.44	125.93	2.52	1.88	890	473		
			16:49:44	8.24	20.44	125.75	1.91	1.33	890	667		
			16:49:45	8.36	20.42	125.51	1.01	0.52	890	1697		
			16:49:46	8.29	20.42	125.55	1.21	0.71	890	1257		
			16:49:47	8.41	20.43	125.43	0.25	0.25	890	3589		
			16:49:48	8.36	20.43	125.47	0.18	0.18	890	4958		
			16:49:49	8.42	20.42	125.51	0.05	0.05	890	16667		
			16:49:50	8.35	20.42	125.60	0.36	0.36	890	2501		
			16:49:51	8.24	20.41	125.78	0.35	0.35	890	2523		
			16:49:52	8.32	20.42	126.06	1.37	0.85	890	1047		
			16:49:53	8.33	20.41	126.01	0.80	0.34	890	2625		
			16:49:54	8.33	20.42	126.22	0.57	0.13	890	6611		
			16:49:55	8.26	20.42	126.40	2.09	1.49	890	596		
			16:49:56	8.35	20.41	126.33	2.18	1.58	890	563		
			16:49:57	8.32	20.40	126.21	2.38	1.76	890	507		
			16:49:58	8.30	20.40	126.04	2.14	1.54	890	577		
			16:49:59	8.38	20.41	126.11	1.87	1.30	890	685		
			16:50:00	8.30	20.43	126.31	1.80	1.23	890	721		
			16:50:01	8.36	20.41	126.18	1.64	1.09	890	817		
			16:50:02	8.35	20.41	126.26	1.49	0.96	890	930		
			16:50:03	8.33	20.41	126.23	1.88	1.31	890	679		
			16:50:04	8.33	20.39	126.33	1.68	1.13	890	787		
			16:50:05	8.32	20.39	126.37	2.36	1.74	890	511		

**TABLE D-16**

Profile PRO-12 on September 21, 2022 (1648-1702 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

77	Instantaneous Minimum Dilution in Profile
138	Minimum Average Dilution in Profile
149	Plume Average Dilution Detected
218	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:50:06	8.25	20.40	126.47	2.42	1.80	890	496		
			16:50:07	8.32	20.40	126.56	2.51	1.88	890	474		
			16:50:08	8.29	20.41	126.87	2.88	2.21	890	403		
			16:50:09	8.34	20.41	126.98	3.90	3.12	890	285		
			16:50:10	8.37	20.40	126.64	3.75	2.99	890	298		
			16:50:11	8.34	20.41	127.23	4.56	3.71	890	240		
			16:50:12	8.38	20.42	127.57	5.44	4.50	890	198		
			16:50:13	8.33	20.45	127.79	4.99	4.10	890	217		
			16:50:14	8.32	20.48	128.07	4.83	3.96	890	225		
			16:50:15	8.31	20.49	128.07	5.35	4.42	890	201		
			16:50:16	8.24	20.48	127.88	5.53	4.58	890	194		
			16:50:17	8.35	20.46	127.94	5.58	4.63	890	192		
			16:50:18	8.35	20.42	127.81	5.86	4.88	890	182		
			16:50:19	8.35	20.39	127.92	6.60	5.54	890	161		
			16:50:20	8.34	20.37	127.79	6.84	5.76	890	155		
			16:50:21	8.32	20.37	127.76	7.19	6.07	890	147		
			16:50:22	8.31	20.37	128.00	7.11	6.00	890	148		
			16:50:23	8.27	20.38	128.13	6.38	5.34	890	167		
			16:50:24	8.31	20.38	128.00	6.78	5.70	890	156		
			16:50:25	8.36	20.38	127.69	7.85	6.67	890	134		
			16:50:26	8.33	20.38	127.83	8.02	6.82	890	130	171	Measured Plume Dilutions at 8 ft
			16:50:27	8.31	20.40	127.74	8.79	7.51	890	119		
			16:50:28	8.33	20.45	127.46	7.81	6.62	890	134		
			16:50:29	8.36	20.46	127.64	6.20	5.18	890	172		
			16:50:30	8.35	20.46	127.51	5.51	4.57	890	195		
			16:50:31	8.25	20.48	127.42	5.56	4.61	890	193		
			16:50:32	8.30	20.47	127.70	7.13	6.02	890	148		
			16:50:33	8.32	20.44	127.67	7.37	6.24	890	143		
			16:50:34	8.32	20.42	127.40	6.57	5.51	890	161		
			16:50:35	8.23	20.40	127.29	6.90	5.81	890	153		
			16:50:36	8.29	20.38	127.23	6.68	5.61	890	159		
			16:50:37	8.31	20.38	127.23	5.66	4.70	890	190		
			16:50:38	8.31	20.37	127.27	5.62	4.66	890	191		
			16:50:39	8.31	20.36	127.09	5.51	4.57	890	195		
			16:50:40	8.36	20.35	127.02	5.66	4.70	890	189		
			16:50:41	8.30	20.35	127.25	6.39	5.35	890	166		
			16:50:42	8.28	20.35	127.42	6.20	5.19	890	172		
			16:50:43	8.27	20.36	127.44	6.36	5.33	890	167		
			16:50:44	8.21	20.36	127.46	6.57	5.51	890	161		

**TABLE D-16**

Profile PRO-12 on September 21, 2022 (1648-1702 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

77	Instantaneous Minimum Dilution in Profile
138	Minimum Average Dilution in Profile
149	Plume Average Dilution Detected
218	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:50:45	8.28	20.36	127.55	6.41	5.38	890	166		
			16:50:46	8.28	20.36	127.59	6.96	5.86	890	152		
			16:50:47	8.32	20.36	127.44	6.68	5.62	890	158		
			16:50:48	8.28	20.35	127.09	6.56	5.51	890	162		
			16:50:49	8.28	20.35	127.55	6.48	5.44	890	164		
			16:50:50	8.30	20.36	127.80	6.38	5.35	890	166		
			16:50:51	8.35	20.36	128.07	6.55	5.50	890	162		
			16:50:52	8.32	20.36	128.11	7.27	6.14	890	145		
			16:50:53	8.33	20.37	128.82	8.05	6.84	890	130		
			16:50:54	8.34	20.37	128.20	8.60	7.34	890	121		
			16:50:55	8.31	20.36	127.59	8.14	6.93	890	128		
			16:50:56	8.34	20.35	127.67	7.12	6.01	890	148		
			16:50:57	8.33	20.35	127.84	6.52	5.47	890	163		
			16:50:58	8.31	20.35	128.58	6.96	5.87	890	152		
			16:50:59	8.26	20.35	129.03	9.10	7.79	890	114		
			16:51:00	8.31	20.35	128.38	8.98	7.68	890	116		
			16:51:01	8.28	20.35	127.96	7.58	6.43	890	139		
			16:51:02	8.38	20.35	127.58	7.06	5.96	890	149		
			16:51:03	8.30	20.34	127.46	6.50	5.45	890	163		
			16:51:04	8.59	20.35	127.92	7.47	6.33	890	141		
			16:51:05	8.87	20.35	128.07	8.20	6.98	890	128		
			16:51:06	9.19	20.35	128.31	8.42	7.17	890	124		
			16:51:07	10.20	20.36	129.43	8.77	7.49	890	119		
			16:51:08	12.94	20.33	131.93	3.70	2.94	890	302		
			16:51:09	13.58	20.31	131.83	4.49	3.65	890	244		
			16:51:10	13.74	20.32	131.63	7.46	6.32	890	141		
			16:51:11	13.64	20.32	131.12	7.68	6.51	890	137		
			16:51:12	13.78	20.32	131.52	7.55	6.40	890	139		
			16:51:13	13.77	20.32	131.59	7.59	6.43	890	138		
			16:51:14	13.82	20.32	131.36	8.96	7.66	890	116		
			16:51:15	13.75	20.32	131.33	9.59	8.23	890	108		
			16:51:16	13.73	20.32	131.09	10.16	8.74	890	102		
			16:51:17	13.67	20.31	130.77	10.23	8.80	890	101		
			16:51:18	13.75	20.31	130.75	10.19	8.76	890	102		
			16:51:19	13.82	20.32	131.06	9.71	8.33	890	107		
			16:51:20	13.81	20.32	131.12	9.83	8.44	890	105		
			16:51:21	13.79	20.32	131.02	9.73	8.35	890	107		
			16:51:22	13.82	20.32	130.75	10.32	8.88	890	100		
			16:51:23	13.82	20.32	130.63	10.22	8.80	890	101		

**TABLE D-16**

Profile PRO-12 on September 21, 2022 (1648-1702 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

77	Instantaneous Minimum Dilution in Profile
138	Minimum Average Dilution in Profile
149	Plume Average Dilution Detected
218	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:51:24	13.80	20.32	130.60	8.65	7.38	890	121		
			16:51:25	13.80	20.32	130.95	7.02	5.92	890	150		
			16:51:26	13.76	20.32	130.79	6.55	5.50	890	162		
			16:51:27	13.81	20.32	130.77	6.66	5.60	890	159	148	Measured Plume Dilutions at 13-14 ft
			16:51:28	13.78	20.32	130.79	7.03	5.93	890	150		
			16:51:29	13.81	20.32	130.87	8.01	6.81	890	131		
			16:51:30	13.72	20.32	130.87	7.55	6.39	890	139		
			16:51:31	13.78	20.32	130.91	6.79	5.72	890	156		
			16:51:32	13.83	20.32	131.06	6.63	5.57	890	160		
			16:51:33	13.86	20.32	131.31	6.54	5.49	890	162		
			16:51:34	13.82	20.32	131.38	10.19	8.76	890	102		
			16:51:35	13.81	20.32	131.20	9.71	8.33	890	107		
			16:51:36	13.81	20.31	131.56	9.83	8.44	890	105		
			16:51:37	13.72	20.31	131.69	9.73	8.35	890	107		
			16:51:38	13.78	20.31	133.70	10.32	8.88	890	100		
			16:51:39	13.77	20.30	134.01	10.22	8.80	890	101		
			16:51:40	13.89	20.29	134.31	8.65	7.38	890	121		
			16:51:41	13.91	20.28	134.25	10.19	8.76	890	102		
			16:51:42	13.85	20.28	134.01	9.71	8.33	890	107		
			16:51:43	13.81	20.27	134.00	9.83	8.44	890	105		
			16:51:44	13.85	20.27	133.94	9.73	8.35	890	107		
			16:51:45	13.81	20.26	133.93	10.32	8.88	890	100		
			16:51:46	13.82	20.27	134.35	10.22	8.80	890	101		
			16:51:47	13.77	20.27	134.50	8.65	7.38	890	121		
			16:51:48	13.72	20.28	134.70	5.39	4.45	890	200		
			16:51:49	13.79	20.29	134.94	5.43	4.49	890	198		
			16:51:50	13.77	20.29	135.11	4.89	4.01	890	222		
			16:51:51	13.78	20.28	135.04	4.78	3.91	890	228		
			16:51:52	13.80	20.28	135.19	5.05	4.16	890	214		
			16:51:53	13.79	20.28	135.32	4.84	3.96	890	225		
			16:51:54	13.77	20.28	135.13	4.66	3.80	890	234		
			16:51:55	13.76	20.27	135.19	4.85	3.97	890	224		
			16:51:56	13.77	20.27	135.13	5.88	4.89	890	182		
			16:51:57	13.77	20.27	135.17	6.01	5.01	890	178		
			16:51:58	13.72	20.26	134.90	6.13	5.12	890	174		
			16:51:59	13.81	20.26	134.48	3.70	2.94	890	302		
			16:52:00	13.78	20.26	134.46	4.49	3.65	890	244		
			16:52:01	13.80	20.26	134.16	7.46	6.32	890	141		
			16:52:02	13.76	20.25	134.06	7.68	6.51	890	137		

**TABLE D-16**

Profile PRO-12 on September 21, 2022 (1648-1702 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

77	Instantaneous Minimum Dilution in Profile
138	Minimum Average Dilution in Profile
149	Plume Average Dilution Detected
218	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:52:03	13.76	20.25	133.77	7.55	6.40	890	139		
			16:52:04	13.71	20.25	133.94	7.59	6.43	890	138		
			16:52:05	13.73	20.25	133.96	8.96	7.66	890	116		
			16:52:06	13.70	20.25	133.99	9.59	8.23	890	108		
			16:52:07	13.69	20.25	133.89	10.16	8.74	890	102		
			16:52:08	13.71	20.25	133.75	10.23	8.80	890	101		
			16:52:09	13.67	20.25	133.70	10.19	8.76	890	102		
			16:52:10	13.72	20.25	133.35	9.71	8.33	890	107		
			16:52:11	13.66	20.24	132.87	9.83	8.44	890	105		
			16:52:12	13.72	20.23	132.52	9.73	8.35	890	107		
			16:52:13	13.71	20.23	132.84	10.32	8.88	890	100		
			16:52:14	13.72	20.23	132.91	10.22	8.80	890	101		
			16:52:15	13.75	20.23	132.72	8.65	7.38	890	121		
			16:52:16	13.74	20.23	132.62	7.02	5.92	890	150		
			16:52:17	13.75	20.22	131.97	6.55	5.50	890	162		
			16:52:18	13.69	20.22	131.95	6.66	5.60	890	159		
			16:52:19	13.72	20.22	132.02	7.03	5.93	890	150		
			16:52:20	13.73	20.21	132.32	8.01	6.81	890	131		
			16:52:21	13.75	20.22	132.87	7.55	6.39	890	139		
			16:52:22	13.72	20.23	133.08	6.79	5.72	890	156		
			16:52:23	13.77	20.23	133.10	6.63	5.57	890	160		
			16:52:24	13.71	20.23	133.41	6.54	5.49	890	162		
			16:52:25	13.73	20.23	133.37	4.84	3.96	890	225		
			16:52:26	13.74	20.23	133.08	5.27	4.35	890	205		
			16:52:27	13.72	20.23	132.76	5.67	4.71	890	189		
			16:52:28	13.70	20.23	132.62	5.66	4.70	890	189		
			16:52:29	13.74	20.23	132.69	5.18	4.27	890	208		
			16:52:30	13.68	20.23	132.65	5.51	4.56	890	195		
			16:52:31	13.77	20.23	133.31	4.99	4.10	890	217		
			16:52:32	13.71	20.23	133.28	6.39	5.35	890	166		
			16:52:33	13.80	20.23	133.41	6.72	5.65	890	158		
			16:52:34	13.77	20.23	133.39	7.19	6.08	890	146		
			16:52:35	13.77	20.23	133.35	7.33	6.20	890	144		
			16:52:36	13.69	20.23	133.36	6.66	5.60	890	159		
			16:52:37	13.72	20.23	133.33	6.64	5.58	890	159		
			16:52:38	13.68	20.23	133.18	5.86	4.88	890	183		
			16:52:39	13.70	20.23	132.62	5.39	4.45	890	200		
			16:52:40	13.71	20.23	132.55	5.43	4.49	890	198		
			16:52:41	13.76	20.22	132.41	4.89	4.01	890	222		

**TABLE D-16**

Profile PRO-12 on September 21, 2022 (1648-1702 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

77	Instantaneous Minimum Dilution in Profile
138	Minimum Average Dilution in Profile
149	Plume Average Dilution Detected
218	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:52:42	13.72	20.22	132.36	4.78	3.91	890	228		
			16:52:43	13.68	20.23	132.26	10.19	8.76	890	102		
			16:52:44	13.77	20.23	132.34	9.71	8.33	890	107		
			16:52:45	13.74	20.23	132.52	9.83	8.44	890	105		
			16:52:46	13.62	20.23	132.60	9.73	8.35	890	107		
			16:52:47	13.60	20.23	132.74	10.32	8.88	890	100		
			16:52:48	13.61	20.23	132.69	10.22	8.80	890	101		
			16:52:49	13.69	20.22	133.09	8.65	7.38	890	121		
			16:52:50	13.79	20.22	132.82	8.22	7.00	890	127		
			16:52:51	14.04	20.22	133.29	8.38	7.14	890	125		
			16:52:52	15.88	20.22	133.38	9.24	7.91	890	112		
			16:52:53	18.77	20.22	133.04	8.80	7.52	890	118		
			16:52:54	19.30	20.22	133.39	8.65	7.38	890	121		
			16:52:55	19.43	20.22	133.28	8.44	7.19	890	124		
			16:52:56	19.39	20.22	133.38	8.24	7.02	890	127		
			16:52:57	19.46	20.22	133.53	8.48	7.23	890	123		
			16:52:58	19.39	20.22	133.49	7.72	6.55	890	136		
			16:52:59	19.39	20.22	133.55	7.14	6.03	890	148		
			16:53:00	19.42	20.22	133.40	6.96	5.87	890	152		
			16:53:01	19.44	20.21	133.27	7.15	6.03	890	148	154	Measured Plume Dilutions at 19-20 ft
			16:53:02	19.46	20.21	133.25	7.24	6.12	890	145		
			16:53:03	19.46	20.21	132.91	7.64	6.47	890	138		
			16:53:04	19.49	20.21	132.61	7.75	6.58	890	135		
			16:53:05	19.49	20.21	132.45	7.22	6.10	890	146		
			16:53:06	19.56	20.21	132.11	6.40	5.36	890	166		
			16:53:07	19.46	20.21	132.15	5.90	4.92	890	181		
			16:53:08	19.51	20.21	132.47	6.15	5.14	890	173		
			16:53:09	19.49	20.21	132.62	5.38	4.45	890	200		
			16:53:10	19.49	20.21	132.70	5.92	4.93	890	181		
			16:53:11	19.42	20.21	132.32	6.24	5.22	890	170		
			16:53:12	19.49	20.21	131.85	6.35	5.32	890	167		
			16:53:13	19.53	20.21	131.88	6.45	5.41	890	165		
			16:53:14	19.50	20.21	131.69	6.86	5.78	890	154		
			16:53:15	19.49	20.20	131.52	6.32	5.29	890	168		
			16:53:16	19.50	20.20	131.59	6.12	5.11	890	174		
			16:53:17	19.51	20.20	131.64	6.21	5.20	890	171		
			16:53:18	19.50	20.21	131.80	6.45	5.41	890	165		
			16:53:19	19.49	20.21	131.50	6.56	5.51	890	162		
			16:53:20	19.47	20.20	131.18	6.25	5.23	890	170		

**TABLE D-16**

Profile PRO-12 on September 21, 2022 (1648-1702 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

77	Instantaneous Minimum Dilution in Profile
138	Minimum Average Dilution in Profile
149	Plume Average Dilution Detected
218	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:53:21	19.48	20.19	131.04	6.22	5.20	890	171		
			16:53:22	19.50	20.19	131.12	6.58	5.53	890	161		
			16:53:23	19.50	20.20	131.02	6.42	5.38	890	165		
			16:53:24	19.55	20.20	130.73	6.67	5.61	890	159		
			16:53:25	19.47	20.19	130.54	6.49	5.44	890	164		
			16:53:26	19.49	20.19	130.19	6.47	5.42	890	164		
			16:53:27	19.48	20.19	130.77	8.22	7.00	890	127		
			16:53:28	19.42	20.19	130.62	8.38	7.14	890	125		
			16:53:29	19.45	20.19	130.62	9.24	7.91	890	112		
			16:53:30	19.50	20.19	130.71	8.80	7.52	890	118		
			16:53:31	19.50	20.19	130.92	8.65	7.38	890	121		
			16:53:32	19.49	20.19	131.00	8.44	7.19	890	124		
			16:53:33	19.51	20.19	131.11	8.24	7.02	890	127		
			16:53:34	19.50	20.19	131.06	8.48	7.23	890	123		
			16:53:35	19.48	20.19	130.79	7.72	6.55	890	136		
			16:53:36	19.51	20.18	130.06	7.14	6.03	890	148		
			16:53:37	19.54	20.18	129.15	6.96	5.87	890	152		
			16:53:38	19.50	20.17	129.16	7.15	6.03	890	148		
			16:53:39	19.52	20.17	128.76	7.24	6.12	890	145		
			16:53:40	19.47	20.17	129.37	7.64	6.47	890	138		
			16:53:41	19.51	20.19	130.75	7.75	6.58	890	135		
			16:53:42	19.51	20.19	130.81	7.22	6.10	890	146		
			16:53:43	19.44	20.19	130.85	6.48	5.44	890	164		
			16:53:44	19.40	20.20	131.06	6.91	5.82	890	153		
			16:53:45	19.46	20.20	131.31	7.14	6.02	890	148		
			16:53:46	19.47	20.20	131.62	7.13	6.02	890	148		
			16:53:47	19.52	20.21	131.85	6.90	5.81	890	153		
			16:53:48	19.50	20.21	131.52	7.11	6.00	890	148		
			16:53:49	19.45	20.21	131.46	7.51	6.36	890	140		
			16:53:50	19.44	20.21	131.35	7.61	6.45	890	138		
			16:53:51	19.49	20.21	131.34	7.54	6.38	890	139		
			16:53:52	19.50	20.21	131.38	7.35	6.22	890	143		
			16:53:53	19.52	20.21	131.38	7.34	6.21	890	143		
			16:53:54	19.53	20.21	131.30	5.20	4.29	890	207		
			16:53:55	19.54	20.21	131.26	5.13	4.22	890	211		
			16:53:56	19.49	20.21	131.46	5.45	4.51	890	197		
			16:53:57	19.53	20.21	131.34	6.20	5.18	890	172		
			16:53:58	19.45	20.21	130.85	6.55	5.50	890	162		
			16:53:59	19.45	20.21	131.00	6.75	5.68	890	157		

**TABLE D-16**

Profile PRO-12 on September 21, 2022 (1648-1702 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

77	Instantaneous Minimum Dilution in Profile
138	Minimum Average Dilution in Profile
149	Plume Average Dilution Detected
218	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:54:00	19.51	20.21	130.99	6.19	5.18	890	172		
			16:54:01	19.46	20.21	131.06	6.60	5.54	890	161		
			16:54:02	19.50	20.21	131.69	6.01	5.01	890	178		
			16:54:03	19.49	20.21	131.88	6.23	5.21	890	171		
			16:54:04	19.46	20.21	131.81	5.62	4.67	890	191		
			16:54:05	19.48	20.21	131.96	5.57	4.62	890	193		
			16:54:06	19.45	20.21	131.86	5.61	4.65	890	191		
			16:54:07	19.52	20.21	130.06	6.27	5.25	890	170		
			16:54:08	19.60	20.21	129.88	6.40	5.36	890	166		
			16:54:09	20.12	20.21	129.32	6.14	5.13	890	173		
			16:54:10	20.45	20.21	129.45	6.40	5.36	890	166		
			16:54:11	22.54	20.20	129.37	5.90	4.92	890	181		
			16:54:12	24.73	20.20	129.28	6.15	5.14	890	173		
			16:54:13	24.97	20.20	129.45	5.38	4.45	890	200		
			16:54:14	25.07	20.20	129.30	5.92	4.93	890	181		
			16:54:15	25.07	20.20	129.24	6.24	5.22	890	170		
			16:54:16	25.06	20.20	128.89	6.35	5.32	890	167		
			16:54:17	25.03	20.20	128.74	6.45	5.41	890	165		
			16:54:18	25.09	20.19	128.70	6.86	5.78	890	154		
			16:54:19	25.04	20.19	128.78	6.32	5.29	890	168		
			16:54:20	25.07	20.19	128.76	6.12	5.11	890	174		
			16:54:21	24.93	20.19	128.91	6.21	5.20	890	171	138	Measured Plume Dilutions at 25 ft
			16:54:22	24.95	20.19	130.22	6.45	5.41	890	165		
			16:54:23	24.99	20.20	130.69	6.56	5.51	890	162		
			16:54:24	25.00	20.20	131.46	6.25	5.23	890	170		
			16:54:25	25.07	20.22	131.40	6.22	5.20	890	171		
			16:54:26	25.06	20.22	131.30	6.58	5.53	890	161		
			16:54:27	25.08	20.22	131.25	6.42	5.38	890	165		
			16:54:28	25.11	20.23	131.29	6.67	5.61	890	159		
			16:54:29	24.98	20.23	131.25	6.49	5.44	890	164		
			16:54:30	25.04	20.23	131.23	6.47	5.42	890	164		
			16:54:31	24.99	20.24	131.18	6.01	5.01	890	177		
			16:54:32	25.09	20.24	131.13	6.51	5.46	890	163		
			16:54:33	25.03	20.24	130.79	5.87	4.89	890	182		
			16:54:34	25.02	20.24	130.44	6.02	5.02	890	177		
			16:54:35	25.00	20.23	129.58	6.32	5.29	890	168		
			16:54:36	25.03	20.23	129.53	5.59	4.64	890	192		
			16:54:37	25.04	20.23	129.56	5.80	4.83	890	184		
			16:54:38	25.04	20.23	129.61	5.67	4.71	890	189		



**TABLE D-16**

Profile PRO-12 on September 21, 2022 (1648-1702 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

77	Instantaneous Minimum Dilution in Profile
138	Minimum Average Dilution in Profile
149	Plume Average Dilution Detected
218	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:54:39	25.03	20.23	130.18	5.44	4.50	890	198		
			16:54:40	25.04	20.23	129.39	6.06	5.06	890	176		
			16:54:41	25.06	20.23	129.24	6.03	5.03	890	177		
			16:54:42	25.00	20.23	129.02	6.50	5.46	890	163		
			16:54:43	25.02	20.23	128.34	6.31	5.28	890	169		
			16:54:44	25.03	20.22	129.70	6.35	5.32	890	167		
			16:54:45	25.01	20.22	128.92	6.31	5.29	890	168		
			16:54:46	25.01	20.22	128.67	6.54	5.49	890	162		
			16:54:47	24.98	20.22	128.98	6.48	5.44	890	164		
			16:54:48	25.02	20.23	129.85	6.91	5.82	890	153		
			16:54:49	25.03	20.23	129.49	7.14	6.02	890	148		
			16:54:50	25.09	20.23	129.47	7.13	6.02	890	148		
			16:54:51	25.04	20.23	129.63	6.90	5.81	890	153		
			16:54:52	25.01	20.23	130.81	7.11	6.00	890	148		
			16:54:53	25.00	20.23	131.32	7.51	6.36	890	140		
			16:54:54	25.00	20.23	131.35	7.61	6.45	890	138		
			16:54:55	25.03	20.22	130.98	7.54	6.38	890	139		
			16:54:56	25.04	20.22	130.39	7.35	6.22	890	143		
			16:54:57	25.07	20.22	130.56	7.34	6.21	890	143		
			16:54:58	25.03	20.22	130.87	6.39	5.36	890	166		
			16:54:59	25.10	20.22	130.90	10.31	6.28	890	142		
			16:55:00	25.05	20.22	130.78	10.22	6.12	890	145		
			16:55:01	25.03	20.22	130.41	10.07	6.85	890	130		
			16:55:02	25.05	20.22	129.86	9.74	8.22	890	108		
			16:55:03	25.04	20.22	129.58	9.71	8.38	890	106		
			16:55:04	25.05	20.22	129.04	10.29	9.24	890	96		
			16:55:05	25.06	20.21	128.89	9.95	8.80	890	101		
			16:55:06	25.05	20.22	128.67	9.53	8.65	890	103		
			16:55:07	25.05	20.22	128.72	10.24	8.44	890	105		
			16:55:08	25.02	20.22	128.80	10.58	8.24	890	108		
			16:55:09	25.07	20.22	129.00	9.74	8.48	890	105		
			16:55:10	25.03	20.22	128.95	9.71	7.72	890	115		
			16:55:11	25.02	20.22	128.80	10.29	7.14	890	125		
			16:55:12	25.03	20.22	128.63	9.95	6.96	890	128		
			16:55:13	25.03	20.22	128.57	9.74	7.15	890	125		
			16:55:14	24.99	20.22	128.48	9.71	7.24	890	123		
			16:55:15	25.04	20.22	128.48	10.29	7.64	890	117		
			16:55:16	25.06	20.22	128.35	9.95	7.75	890	115		
			16:55:17	25.00	20.22	128.48	9.53	7.22	890	123		

**TABLE D-16**

Profile PRO-12 on September 21, 2022 (1648-1702 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

77	Instantaneous Minimum Dilution in Profile
138	Minimum Average Dilution in Profile
149	Plume Average Dilution Detected
218	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:55:18	25.06	20.22	128.60	10.24	7.07	890	126		
			16:55:19	25.04	20.22	128.67	11.12	7.09	890	125		
			16:55:20	25.04	20.22	128.57	11.42	9.87	890	90		
			16:55:21	25.04	20.22	128.63	12.72	11.04	890	81		
			16:55:22	25.04	20.21	128.63	10.65	9.18	890	97		
			16:55:23	25.04	20.20	128.51	10.29	8.85	890	101		
			16:55:24	25.04	20.20	128.41	10.45	9.00	890	99		
			16:55:25	25.00	20.20	128.72	10.84	9.35	890	95		
			16:55:26	25.06	20.20	128.86	11.18	9.65	890	92		
			16:55:27	25.03	20.20	128.91	11.55	9.99	890	89		
			16:55:28	24.96	20.20	128.86	11.16	9.64	890	92		
			16:55:29	25.03	20.20	128.66	10.10	8.69	890	102		
			16:55:30	24.91	20.20	128.24	9.54	8.18	890	109		
			16:55:31	25.03	20.20	128.24	9.16	7.84	890	114		
			16:55:32	24.93	20.20	128.30	9.23	7.90	890	113		
			16:55:33	24.99	20.20	128.32	9.27	7.94	890	112		
			16:55:34	24.99	20.20	128.22	9.08	7.77	890	115		
			16:55:35	24.96	20.20	128.15	9.07	7.76	890	115		
			16:55:36	25.00	20.20	128.27	8.62	7.36	890	121		
			16:55:37	24.95	20.20	128.27	9.49	8.14	890	109		
			16:55:38	24.99	20.20	128.33	9.61	8.25	890	108		
			16:55:39	24.95	20.20	128.22	9.46	8.11	890	110		
			16:55:40	24.96	20.20	128.29	9.81	8.42	890	106		
			16:55:41	24.95	20.20	128.07	9.44	8.09	890	110		
			16:55:42	24.96	20.20	128.15	9.04	7.73	890	115		
			16:55:43	24.98	20.21	128.34	9.47	8.11	890	110		
			16:55:44	25.03	20.20	128.17	11.05	9.54	890	93		
			16:55:45	24.93	20.20	128.24	11.36	9.81	890	91		
			16:55:46	24.99	20.20	128.36	12.67	10.99	890	81		
			16:55:47	25.07	20.20	127.74	7.48	6.33	890	141		
			16:55:48	25.16	20.20	127.74	7.15	6.04	890	147		
			16:55:49	26.01	20.20	127.98	7.73	6.56	890	136		
			16:55:50	29.33	20.20	129.32	10.41	8.96	890	99		
			16:55:51	31.11	20.19	128.98	10.31	8.87	890	100		
			16:55:52	31.44	20.19	129.69	10.22	8.79	890	101		
			16:55:53	31.95	20.19	131.29	10.07	8.66	890	103		
			16:55:54	31.63	20.19	130.90	9.74	8.36	890	106		
			16:55:55	31.18	20.19	130.52	9.71	8.34	890	107		
			16:55:56	31.33	20.19	130.62	10.29	8.86	890	100		

**TABLE D-16**

Profile PRO-12 on September 21, 2022 (1648-1702 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

77	Instantaneous Minimum Dilution in Profile
138	Minimum Average Dilution in Profile
149	Plume Average Dilution Detected
218	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:55:57	31.41	20.19	130.18	9.95	8.55	890	104	142	Measured Plume Dilutions at 31 ft
			16:55:58	31.37	20.19	129.96	9.53	8.18	890	109		
			16:55:59	31.41	20.19	129.72	7.15	6.03	890	148		
			16:56:00	31.28	20.19	129.58	7.28	6.15	890	145		
			16:56:01	31.28	20.19	129.37	7.64	6.47	890	137		
			16:56:02	31.27	20.19	129.87	7.00	5.90	890	151		
			16:56:03	31.26	20.19	129.68	7.17	6.06	890	147		
			16:56:04	31.41	20.19	129.59	6.84	5.76	890	155		
			16:56:05	31.32	20.19	129.06	6.62	5.56	890	160		
			16:56:06	31.34	20.19	129.30	6.44	5.40	890	165		
			16:56:07	31.33	20.19	129.28	6.29	5.27	890	169		
			16:56:08	31.31	20.18	129.20	5.98	4.99	890	178		
			16:56:09	31.36	20.18	129.04	5.99	4.99	890	178		
			16:56:10	31.37	20.17	128.95	9.27	7.94	890	112		
			16:56:11	31.34	20.17	129.17	9.08	7.77	890	115		
			16:56:12	31.32	20.18	129.26	9.07	7.76	890	115		
			16:56:13	31.37	20.18	129.22	8.62	7.36	890	121		
			16:56:14	31.30	20.18	129.12	9.49	8.14	890	109		
			16:56:15	31.34	20.18	128.96	9.61	8.25	890	108		
			16:56:16	31.28	20.18	128.57	9.46	8.11	890	110		
			16:56:17	31.31	20.18	128.80	9.81	8.42	890	106		
			16:56:18	31.35	20.18	128.78	9.44	8.09	890	110		
			16:56:19	31.34	20.18	128.31	9.04	7.73	890	115		
			16:56:20	31.32	20.17	128.02	9.47	8.11	890	110		
			16:56:21	31.33	20.17	127.90	7.36	6.22	890	143		
			16:56:22	31.37	20.18	127.86	7.84	6.65	890	134		
			16:56:23	31.33	20.18	127.90	8.41	7.17	890	124		
			16:56:24	31.32	20.18	127.92	8.05	6.84	890	130		
			16:56:25	31.37	20.18	127.81	7.68	6.51	890	137		
			16:56:26	31.39	20.18	127.73	8.01	6.80	890	131		
			16:56:27	31.37	20.18	127.72	7.87	6.68	890	133		
			16:56:28	31.34	20.17	127.63	7.89	6.70	890	133		
			16:56:29	31.36	20.17	127.60	8.07	6.86	890	130		
			16:56:30	31.34	20.17	127.55	8.37	7.13	890	125		
			16:56:31	31.33	20.17	127.64	9.41	8.06	890	110		
			16:56:32	31.35	20.17	127.76	9.13	7.81	890	114		
			16:56:33	31.33	20.17	127.61	8.24	7.01	890	127		
			16:56:34	31.37	20.17	127.44	7.01	5.91	890	151		
			16:56:35	31.32	20.17	127.12	6.53	5.48	890	162		

**TABLE D-16**

Profile PRO-12 on September 21, 2022 (1648-1702 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

77	Instantaneous Minimum Dilution in Profile
138	Minimum Average Dilution in Profile
149	Plume Average Dilution Detected
218	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:56:36	31.32	20.17	126.95	5.39	4.46	890	200		
			16:56:37	31.33	20.17	126.93	5.48	4.54	890	196		
			16:56:38	31.35	20.17	126.93	4.66	3.80	890	234		
			16:56:39	31.35	20.17	126.81	5.44	4.51	890	198		
			16:56:40	31.37	20.17	126.77	5.65	4.69	890	190		
			16:56:41	31.32	20.17	126.56	5.19	4.28	890	208		
			16:56:42	31.33	20.17	126.39	5.13	4.22	890	211		
			16:56:43	31.40	20.17	126.58	4.69	3.83	890	232		
			16:56:44	31.40	20.17	127.11	7.23	6.10	890	146		
			16:56:45	31.37	20.17	127.78	8.80	7.52	890	118		
			16:56:46	31.43	20.17	128.05	7.15	6.03	890	148		
			16:56:47	31.39	20.17	128.35	7.28	6.15	890	145		
			16:56:48	31.37	20.17	129.00	7.64	6.47	890	137		
			16:56:49	31.33	20.17	129.32	7.00	5.90	890	151		
			16:56:50	31.38	20.17	129.56	7.17	6.06	890	147		
			16:56:51	31.37	20.17	129.51	6.84	5.76	890	155		
			16:56:52	31.34	20.17	129.47	6.62	5.56	890	160		
			16:56:53	31.35	20.17	129.05	6.44	5.40	890	165		
			16:56:54	31.37	20.17	128.89	6.29	5.27	890	169		
			16:56:55	31.36	20.17	128.80	5.98	4.99	890	178		
			16:56:56	31.33	20.17	128.79	5.99	4.99	890	178		
			16:56:57	31.36	20.17	128.59	9.40	8.06	890	110		
			16:56:58	31.38	20.17	128.05	8.88	7.58	890	117		
			16:56:59	31.38	20.17	127.62	7.17	6.06	890	147		
			16:57:00	31.35	20.17	127.67	6.36	5.33	890	167		
			16:57:01	31.38	20.17	127.52	5.88	4.90	890	182		
			16:57:02	31.33	20.17	127.31	6.44	5.40	890	165		
			16:57:03	31.32	20.17	127.46	7.66	6.49	890	137		
			16:57:04	31.31	20.17	127.86	9.16	7.84	890	114		
			16:57:05	31.35	20.17	128.30	9.23	7.90	890	113		
			16:57:06	31.29	20.17	128.29	9.27	7.94	890	112		
			16:57:07	31.33	20.17	128.67	9.08	7.77	890	115		
			16:57:08	31.30	20.17	129.41	9.07	7.76	890	115		
			16:57:09	31.29	20.17	129.93	8.62	7.36	890	121		
			16:57:10	31.23	20.17	130.25	9.49	8.14	890	109		
			16:57:11	31.33	20.17	130.47	9.61	8.25	890	108		
			16:57:12	31.31	20.17	130.51	9.46	8.11	890	110		
			16:57:13	31.31	20.17	130.57	9.81	8.42	890	106		
			16:57:14	31.30	20.17	130.85	9.44	8.09	890	110		

**TABLE D-16**

Profile PRO-12 on September 21, 2022 (1648-1702 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

77	Instantaneous Minimum Dilution in Profile
138	Minimum Average Dilution in Profile
149	Plume Average Dilution Detected
218	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:57:15	31.33	20.17	131.24	9.04	7.73	890	115		
			16:57:16	31.36	20.17	131.40	9.47	8.11	890	110		
			16:57:17	31.34	20.17	131.61	7.15	6.03	890	148		
			16:57:18	31.28	20.17	131.65	7.28	6.15	890	145		
			16:57:19	31.33	20.17	131.50	7.64	6.47	890	137		
			16:57:20	31.40	20.17	131.44	7.00	5.90	890	151		
			16:57:21	31.33	20.17	130.99	7.17	6.06	890	147		
			16:57:22	31.39	20.17	130.78	6.84	5.76	890	155		
			16:57:23	31.33	20.17	130.62	6.62	5.56	890	160		
			16:57:24	31.33	20.17	130.52	6.44	5.40	890	165		
			16:57:25	31.39	20.16	130.33	6.29	5.27	890	169		
			16:57:26	31.35	20.16	130.31	5.98	4.99	890	178		
			16:57:27	31.29	20.16	130.14	5.99	4.99	890	178		
			16:57:28	31.34	20.16	130.01	7.15	6.03	890	148		
			16:57:29	31.29	20.16	130.10	7.28	6.15	890	145		
			16:57:30	31.27	20.16	130.49	7.64	6.47	890	137		
			16:57:31	31.30	20.17	130.64	7.00	5.90	890	151		
			16:57:32	31.29	20.17	130.58	7.17	6.06	890	147		
			16:57:33	31.32	20.17	130.62	6.84	5.76	890	155		
			16:57:34	31.32	20.17	130.81	6.62	5.56	890	160		
			16:57:35	31.29	20.17	130.81	6.44	5.40	890	165		
			16:57:36	31.18	20.17	130.62	6.29	5.27	890	169		
			16:57:37	31.26	20.17	130.90	5.98	4.99	890	178		
			16:57:38	31.31	20.17	131.12	5.99	4.99	890	178		
			16:57:39	31.33	20.17	131.11	7.15	6.03	890	148		
			16:57:40	31.29	20.17	131.57	7.28	6.15	890	145		
			16:57:41	31.49	20.17	131.67	7.64	6.47	890	137		
			16:57:42	33.04	20.17	130.63	7.00	5.90	890	151		
			16:57:43	35.82	20.16	131.33	7.17	6.06	890	147		
			16:57:44	36.42	20.17	131.20	6.84	5.76	890	155		
			16:57:45	36.57	20.17	131.30	6.62	5.56	890	160		
			16:57:46	36.65	20.17	131.10	6.44	5.40	890	165		
			16:57:47	36.71	20.17	130.88	6.29	5.27	890	169		
			16:57:48	36.69	20.16	130.64	5.98	4.99	890	178		
			16:57:49	36.69	20.16	130.39	7.15	6.03	890	148		
			16:57:50	36.71	20.16	130.01	7.28	6.15	890	145	153	Measured Plume Dilutions at 36 ft
			16:57:51	36.69	20.16	129.71	7.64	6.47	890	137		
			16:57:52	36.70	20.16	129.05	7.00	5.90	890	151		
			16:57:53	36.67	20.15	128.82	7.17	6.06	890	147		

**TABLE D-16**

Profile PRO-12 on September 21, 2022 (1648-1702 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

77	Instantaneous Minimum Dilution in Profile
138	Minimum Average Dilution in Profile
149	Plume Average Dilution Detected
218	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:57:54	36.75	20.16	129.10	6.84	5.76	890	155		
			16:57:55	36.66	20.16	129.10	6.62	5.56	890	160		
			16:57:56	36.66	20.16	129.20	6.44	5.40	890	165		
			16:57:57	36.64	20.16	129.10	6.29	5.27	890	169		
			16:57:58	36.66	20.16	129.01	5.98	4.99	890	178		
			16:57:59	36.67	20.16	128.86	5.99	4.99	890	178		
			16:58:00	36.68	20.15	128.24	9.49	8.14	890	109		
			16:58:01	36.66	20.15	127.72	8.33	7.09	890	125		
			16:58:02	36.63	20.15	127.55	6.91	5.83	890	153		
			16:58:03	36.64	20.15	127.52	6.77	5.69	890	156		
			16:58:04	36.68	20.15	127.57	6.44	5.40	890	165		
			16:58:05	36.60	20.15	127.65	6.58	5.52	890	161		
			16:58:06	36.65	20.15	127.64	6.84	5.76	890	154		
			16:58:07	36.69	20.15	127.62	7.91	6.71	890	133		
			16:58:08	36.61	20.15	127.40	8.47	7.22	890	123		
			16:58:09	36.65	20.15	127.68	8.83	7.54	890	118		
			16:58:10	36.61	20.15	128.11	9.11	7.80	890	114		
			16:58:11	36.66	20.15	129.65	7.15	6.03	890	148		
			16:58:12	36.58	20.16	130.94	7.28	6.15	890	145		
			16:58:13	36.59	20.17	130.96	7.64	6.47	890	137		
			16:58:14	36.62	20.17	131.41	7.00	5.90	890	151		
			16:58:15	36.50	20.17	131.54	7.17	6.06	890	147		
			16:58:16	36.57	20.17	131.24	6.84	5.76	890	155		
			16:58:17	36.56	20.17	131.20	6.62	5.56	890	160		
			16:58:18	36.58	20.17	131.35	6.44	5.40	890	165		
			16:58:19	36.57	20.17	131.50	6.29	5.27	890	169		
			16:58:20	36.59	20.17	131.50	5.98	4.99	890	178		
			16:58:21	36.64	20.17	131.24	5.99	4.99	890	178		
			16:58:22	36.71	20.17	131.43	7.15	6.03	890	148		
			16:58:23	36.59	20.17	131.38	7.28	6.15	890	145		
			16:58:24	36.67	20.17	131.08	7.64	6.47	890	137		
			16:58:25	36.58	20.17	130.71	7.00	5.90	890	151		
			16:58:26	36.65	20.16	130.01	7.17	6.06	890	147		
			16:58:27	36.64	20.16	129.66	6.84	5.76	890	155		
			16:58:28	36.64	20.16	129.51	7.15	6.03	890	148		
			16:58:29	36.60	20.16	129.45	7.28	6.15	890	145		
			16:58:30	36.64	20.16	130.14	7.64	6.47	890	137		
			16:58:31	36.54	20.16	130.73	7.00	5.90	890	151		
			16:58:32	36.59	20.17	130.66	7.17	6.06	890	147		

**TABLE D-16**

Profile PRO-12 on September 21, 2022 (1648-1702 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

77	Instantaneous Minimum Dilution in Profile
138	Minimum Average Dilution in Profile
149	Plume Average Dilution Detected
218	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:58:33	36.55	20.17	130.62	6.84	5.76	890	155		
			16:58:34	36.59	20.17	131.28	6.62	5.56	890	160		
			16:58:35	36.57	20.17	132.21	6.44	5.40	890	165		
			16:58:36	36.59	20.17	132.60	6.29	5.27	890	169		
			16:58:37	36.59	20.18	132.76	5.98	4.99	890	178		
			16:58:38	36.68	20.18	132.72	5.99	4.99	890	178		
			16:58:39	36.56	20.17	131.89	7.15	6.03	890	148		
			16:58:40	36.73	20.17	131.28	7.28	6.15	890	145		
			16:58:41	36.64	20.17	132.30	7.64	6.47	890	137		
			16:58:42	36.62	20.17	132.49	7.00	5.90	890	151		
			16:58:43	36.68	20.17	132.19	7.17	6.06	890	147		
			16:58:44	36.79	20.17	131.35	6.84	5.76	890	155		
			16:58:45	36.86	20.17	130.81	7.15	6.03	890	148		
			16:58:46	36.82	20.17	130.81	7.28	6.15	890	145		
			16:58:47	36.80	20.17	131.02	7.64	6.47	890	137		
			16:58:48	36.74	20.17	130.99	7.00	5.90	890	151		
			16:58:49	36.65	20.17	131.14	7.17	6.06	890	147		
			16:58:50	36.70	20.17	130.90	6.84	5.76	890	155		
			16:58:51	36.65	20.17	130.31	6.62	5.56	890	160		
			16:58:52	36.72	20.17	130.48	6.44	5.40	890	165		
			16:58:53	36.65	20.17	130.25	6.29	5.27	890	169		
			16:58:54	36.68	20.16	130.20	5.98	4.99	890	178		
			16:58:55	36.65	20.16	130.12	5.99	4.99	890	178		
			16:58:56	36.67	20.16	130.08	7.15	6.03	890	148		
			16:58:57	36.68	20.16	130.08	7.28	6.15	890	145		
			16:58:58	36.65	20.16	130.18	7.64	6.47	890	137		
			16:58:59	36.69	20.17	130.51	7.00	5.90	890	151		
			16:59:00	36.61	20.17	130.38	7.17	6.06	890	147		
			16:59:01	36.68	20.17	130.31	6.84	5.76	890	155		
			16:59:02	36.64	20.17	130.29	7.15	6.03	890	148		
			16:59:03	36.65	20.16	129.98	7.28	6.15	890	145		
			16:59:04	36.64	20.16	129.76	7.64	6.47	890	137		
			16:59:05	36.65	20.16	129.80	7.00	5.90	890	151		
			16:59:06	36.69	20.16	129.85	7.17	6.06	890	147		
			16:59:07	36.76	20.16	130.10	6.84	5.76	890	155		
			16:59:08	36.73	20.16	129.86	6.62	5.56	890	160		
			16:59:09	36.69	20.16	129.41	6.44	5.40	890	165		
			16:59:10	36.73	20.16	129.26	6.29	5.27	890	169		
			16:59:11	36.72	20.16	128.84	5.98	4.99	890	178		

**TABLE D-16**

Profile PRO-12 on September 21, 2022 (1648-1702 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

77	Instantaneous Minimum Dilution in Profile
138	Minimum Average Dilution in Profile
149	Plume Average Dilution Detected
218	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:59:12	36.68	20.16	128.86	5.99	4.99	890	178		
			16:59:13	36.78	20.16	128.61	7.15	6.03	890	148		
			16:59:14	37.08	20.15	127.94	7.28	6.15	890	145		
			16:59:15	37.27	20.15	127.70	7.64	6.47	890	137		
			16:59:16	37.36	20.15	128.09	7.00	5.90	890	151		
			16:59:17	39.21	20.15	128.00	7.17	6.06	890	147		
			16:59:18	42.01	20.15	127.27	6.84	5.76	890	155		
			16:59:19	42.55	20.15	127.40	7.82	6.64	890	134		
			16:59:20	42.72	20.15	127.36	7.67	6.50	890	137		
			16:59:21	42.65	20.15	127.04	6.54	5.49	890	162		
			16:59:22	42.74	20.15	127.04	5.82	4.84	890	184	143	Measured Plume Dilutions at 43 ft
			16:59:23	42.65	20.15	126.88	6.47	5.43	890	164		
			16:59:24	42.65	20.14	126.73	5.57	4.62	890	193		
			16:59:25	42.63	20.14	126.66	5.19	4.27	890	208		
			16:59:26	42.66	20.14	126.69	5.59	4.63	890	192		
			16:59:27	42.66	20.14	126.77	5.71	4.75	890	187		
			16:59:28	42.64	20.14	126.88	5.61	4.65	890	191		
			16:59:29	42.61	20.15	126.95	5.45	4.51	890	197		
			16:59:30	42.64	20.15	126.92	5.48	4.53	890	196		
			16:59:31	42.64	20.15	126.91	5.44	4.50	890	198		
			16:59:32	42.65	20.15	126.85	5.39	4.45	890	200		
			16:59:33	42.66	20.14	126.91	5.84	4.86	890	183		
			16:59:34	42.70	20.14	126.95	5.94	4.95	890	180		
			16:59:35	42.73	20.15	127.12	6.37	5.34	890	167		
			16:59:36	42.64	20.15	127.67	7.04	5.94	890	150		
			16:59:37	42.65	20.15	128.25	9.20	7.88	890	113		
			16:59:38	42.65	20.15	129.04	12.54	10.88	890	82		
			16:59:39	42.62	20.16	129.56	12.18	10.55	890	84		
			16:59:40	42.63	20.16	129.33	11.70	10.12	890	88		
			16:59:41	42.64	20.16	129.73	10.73	9.25	890	96		
			16:59:42	42.64	20.16	130.06	11.51	9.95	890	89		
			16:59:43	42.64	20.16	129.19	9.92	8.52	890	104		
			16:59:44	42.60	20.15	128.00	9.80	8.41	890	106		
			16:59:45	42.62	20.15	127.98	8.91	7.61	890	117		
			16:59:46	42.65	20.15	128.51	9.71	8.34	890	107		
			16:59:47	42.64	20.15	127.97	9.58	8.22	890	108		
			16:59:48	42.54	20.15	127.88	7.63	6.47	890	138		
			16:59:49	42.57	20.15	127.68	9.44	8.09	890	110		
			16:59:50	42.58	20.15	128.29	10.57	9.11	890	98		



**TABLE D-16**

Profile PRO-12 on September 21, 2022 (1648-1702 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

77	Instantaneous Minimum Dilution in Profile
138	Minimum Average Dilution in Profile
149	Plume Average Dilution Detected
218	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			16:59:51	42.56	20.15	129.14	11.70	10.12	890	88		
			16:59:52	42.58	20.16	129.01	13.11	11.38	890	78		
			16:59:53	42.58	20.16	129.39	13.33	11.58	890	77		
			16:59:54	42.59	20.16	129.47	13.01	11.29	890	79		
			16:59:55	42.60	20.16	129.18	11.77	10.18	890	87		
			16:59:56	42.57	20.16	128.76	10.58	9.12	890	98		
			16:59:57	42.60	20.15	128.42	10.13	8.71	890	102		
			16:59:58	42.57	20.15	128.00	10.24	8.81	890	101		
			16:59:59	42.57	20.15	127.72	9.19	7.87	890	113		
			17:00:00	42.55	20.15	127.67	9.95	8.54	890	104		
			17:00:01	42.64	20.15	127.64	7.75	6.58	890	135		
			17:00:02	42.56	20.15	127.46	7.22	6.10	890	146		
			17:00:03	42.58	20.15	127.59	7.07	5.97	890	149		
			17:00:04	42.63	20.15	127.59	7.09	5.99	890	149		
			17:00:05	42.70	20.15	127.42	6.76	5.69	890	156		
			17:00:06	42.62	20.15	127.70	6.38	5.35	890	167		
			17:00:07	42.68	20.15	128.37	6.77	5.70	890	156		
			17:00:08	42.65	20.16	129.94	7.25	6.12	890	145		
			17:00:09	42.69	20.16	129.84	7.56	6.41	890	139		
			17:00:10	42.70	20.16	129.32	6.86	5.78	890	154		
			17:00:11	42.56	20.16	129.61	7.15	6.03	890	148		
			17:00:12	42.60	20.16	129.84	7.28	6.15	890	145		
			17:00:13	42.66	20.16	129.58	7.64	6.47	890	137		
			17:00:14	42.72	20.16	130.01	7.00	5.90	890	151		
			17:00:15	42.73	20.17	131.13	7.17	6.06	890	147		
			17:00:16	42.75	20.17	131.40	6.84	5.76	890	155		
			17:00:17	42.66	20.17	131.64	6.62	5.56	890	160		
			17:00:18	42.66	20.17	130.61	6.44	5.40	890	165		
			17:00:19	42.68	20.16	129.65	7.75	6.58	890	135		
			17:00:20	42.67	20.16	129.37	7.22	6.10	890	146		
			17:00:21	42.66	20.16	129.17	7.07	5.97	890	149		
			17:00:22	42.69	20.16	129.41	7.09	5.99	890	149		
			17:00:23	42.66	20.16	129.85	6.76	5.69	890	156		
			17:00:24	42.64	20.16	130.04	6.38	5.35	890	167		
			17:00:25	42.66	20.17	130.18	6.77	5.70	890	156		
			17:00:26	42.65	20.17	130.65	7.25	6.12	890	145		
			17:00:27	42.75	20.17	131.11	7.56	6.41	890	139		
			17:00:28	42.61	20.17	131.02	6.86	5.78	890	154		
			17:00:29	42.69	20.17	130.88	7.15	6.03	890	148		

**TABLE D-16**

Profile PRO-12 on September 21, 2022 (1648-1702 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

77	Instantaneous Minimum Dilution in Profile
138	Minimum Average Dilution in Profile
149	Plume Average Dilution Detected
218	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:00:30	42.64	20.17	130.94	7.28	6.15	890	145		
			17:00:31	42.69	20.17	130.94	7.64	6.47	890	137		
			17:00:32	42.63	20.17	131.30	7.00	5.90	890	151		
			17:00:33	42.67	20.17	131.64	7.17	6.06	890	147		
			17:00:34	42.65	20.18	132.03	6.84	5.76	890	155		
			17:00:35	42.65	20.18	132.17	6.62	5.56	890	160		
			17:00:36	42.66	20.18	131.86	6.44	5.40	890	165		
			17:00:37	42.68	20.18	131.86	7.75	6.58	890	135		
			17:00:38	42.65	20.17	131.73	7.22	6.10	890	146		
			17:00:39	42.70	20.18	132.00	7.07	5.97	890	149		
			17:00:40	42.66	20.18	131.87	7.09	5.99	890	149		
			17:00:41	42.68	20.18	132.31	6.76	5.69	890	156		
			17:00:42	42.65	20.18	133.75	6.38	5.35	890	167		
			17:00:43	42.70	20.19	134.39	6.77	5.70	890	156		
			17:00:44	42.67	20.19	134.33	7.25	6.12	890	145		
			17:00:45	42.68	20.19	134.25	7.56	6.41	890	139		
			17:00:46	42.63	20.19	134.08	6.86	5.78	890	154		
			17:00:47	42.67	20.18	132.64	7.15	6.03	890	148		
			17:00:48	42.76	20.17	130.18	7.28	6.15	890	145		
			17:00:49	42.62	20.16	130.61	7.64	6.47	890	137		
			17:00:50	42.67	20.17	131.10	7.00	5.90	890	151		
			17:00:51	42.65	20.17	130.67	7.75	6.58	890	135		
			17:00:52	42.58	20.16	129.15	7.22	6.10	890	146		
			17:00:53	42.67	20.16	128.59	7.07	5.97	890	149		
			17:00:54	42.72	20.16	129.55	7.09	5.99	890	149		
			17:00:55	42.75	20.17	130.55	6.76	5.69	890	156		
			17:00:56	43.17	20.16	129.43	6.38	5.35	890	167		
			17:00:57	45.14	20.16	128.38	6.77	5.70	890	156		
			17:00:58	46.17	20.15	127.74	7.25	6.12	890	145		
			17:00:59	46.27	20.15	127.97	7.56	6.41	890	139		
			17:01:00	46.34	20.15	127.90	6.86	5.78	890	154		
			17:01:01	46.28	20.15	127.92	7.15	6.03	890	148		
			17:01:02	46.39	20.15	127.79	7.28	6.15	890	145		
			17:01:03	46.36	20.15	127.72	7.64	6.47	890	137		
			17:01:04	46.36	20.15	127.62	7.00	5.90	890	151		
			17:01:05	46.35	20.15	127.57	7.17	6.06	890	147	145	Measured Plume Dilutions at 46 ft
			17:01:06	46.34	20.15	127.52	6.84	5.76	890	155		
			17:01:07	46.33	20.15	127.48	6.62	5.56	890	160		
			17:01:08	46.30	20.15	127.56	6.44	5.40	890	165		

**TABLE D-16**

Profile PRO-12 on September 21, 2022 (1648-1702 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

77	Instantaneous Minimum Dilution in Profile
138	Minimum Average Dilution in Profile
149	Plume Average Dilution Detected
218	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:01:09	46.28	20.15	127.48	8.37	7.13	890	125		
			17:01:10	46.23	20.15	127.63	7.70	6.53	890	136		
			17:01:11	46.26	20.15	127.59	7.73	6.56	890	136		
			17:01:12	46.31	20.15	127.62	7.79	6.61	890	135		
			17:01:13	46.33	20.15	127.74	8.29	7.06	890	126		
			17:01:14	46.39	20.15	127.63	8.68	7.41	890	120		
			17:01:15	46.35	20.15	127.46	7.62	6.46	890	138		
			17:01:16	46.33	20.15	127.38	7.65	6.49	890	137		
			17:01:17	46.29	20.15	127.41	7.38	6.24	890	143		
			17:01:18	46.31	20.15	127.44	6.98	5.88	890	151		
			17:01:19	46.29	20.15	127.38	6.72	5.65	890	157		
			17:01:20	46.35	20.15	127.36	6.65	5.59	890	159		
			17:01:21	46.34	20.15	127.40	6.81	5.73	890	155		
			17:01:22	46.32	20.15	127.38	6.57	5.52	890	161		
			17:01:23	46.31	20.15	127.40	7.32	6.19	890	144		
			17:01:24	46.34	20.15	127.70	7.88	6.70	890	133		
			17:01:25	46.31	20.15	127.77	8.50	7.25	890	123		
			17:01:26	46.31	20.15	127.86	9.20	7.88	890	113		
			17:01:27	46.31	20.15	127.81	7.60	6.44	890	138		
			17:01:28	46.35	20.15	127.86	7.86	6.67	890	133		
			17:01:29	46.36	20.15	128.00	8.31	7.08	890	126		
			17:01:30	46.36	20.15	127.86	8.49	7.24	890	123		
			17:01:31	46.33	20.15	127.76	8.75	7.47	890	119		
			17:01:32	46.30	20.15	127.79	8.04	6.83	890	130		
			17:01:33	46.31	20.15	127.79	7.93	6.74	890	132		
			17:01:34	46.36	20.15	127.74	8.05	6.85	890	130		
			17:01:35	46.32	20.15	127.79	8.08	6.87	890	129		
			17:01:36	46.30	20.15	127.90	7.71	6.54	890	136		
			17:01:37	46.31	20.15	127.78	7.95	6.76	890	132		
			17:01:38	46.31	20.15	127.70	7.83	6.64	890	134		
			17:01:39	46.36	20.15	127.55	7.65	6.49	890	137		
			17:01:40	46.31	20.15	127.42	6.73	5.66	890	157		
			17:01:41	46.30	20.15	127.42	6.88	5.79	890	154		
			17:01:42	46.34	20.15	127.42	7.15	6.04	890	147		
			17:01:43	46.30	20.15	127.48	7.07	5.96	890	149		
			17:01:44	46.32	20.15	127.43	7.17	6.06	890	147		
			17:01:45	46.32	20.15	127.48	6.72	5.65	890	158		
			17:01:46	46.34	20.15	127.46	6.71	5.64	890	158		
			17:01:47	46.35	20.15	127.42	6.71	5.64	890	158		

**TABLE D-16**

Profile PRO-12 on September 21, 2022 (1648-1702 hours PDT) located at North MZB (242 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

77	Instantaneous Minimum Dilution in Profile
138	Minimum Average Dilution in Profile
149	Plume Average Dilution Detected
218	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:01:48	46.33	20.15	127.38	6.56	5.51	890	162		
			17:01:49	46.31	20.15	127.40	6.71	5.64	890	158		
			17:01:50	46.33	20.15	127.44	7.47	6.32	890	141		
			17:01:51	46.35	20.15	127.38	6.75	5.68	890	157		
			17:01:52	46.31	20.15	127.40	6.65	5.59	890	159		
			17:01:53	46.35	20.15	127.41	6.56	5.51	890	162		
			17:01:54	46.32	20.15	127.36	6.94	5.85	890	152		
			17:01:55	46.31	20.15	127.31	6.86	5.78	890	154		
			17:01:56	46.33	20.15	127.33	6.72	5.65	890	158		
			17:01:57	46.34	20.15	127.33	6.69	5.63	890	158		
			17:01:58	46.32	20.15	127.29	6.79	5.71	890	156		
			17:01:59	46.27	20.15	127.33	6.88	5.80	890	154		
			17:02:00	46.34	20.15	127.27	7.10	5.99	890	148		
			17:02:01	46.33	20.15	127.29	7.37	6.24	890	143		
			17:02:02	46.32	20.15	127.43	7.35	6.21	890	143		
			17:02:03	46.30	20.15	127.63	7.65	6.48	890	137		
			17:02:04	46.30	20.15	127.55	7.68	6.51	890	137		
			17:02:05	46.31	20.15	127.63	7.58	6.42	890	139		
			17:02:06	46.30	20.15	127.67	7.36	6.22	890	143		
			17:02:07	46.40	20.15	127.59	7.22	6.10	890	146		
			17:02:08	46.39	20.15	127.48	6.75	5.68	890	157		
			17:02:09	46.35	20.15	127.44	7.00	5.90	890	151		
			17:02:10	46.37	20.15	127.44	6.68	5.62	890	158		
			17:02:11	46.33	20.15	127.36	6.78	5.70	890	156		
			17:02:12	46.35	20.15	127.36	6.75	5.67	890	157		
			17:02:13	46.38	20.15	127.33	6.58	5.53	890	161		
			17:02:14	46.35	20.15	127.33	6.79	5.71	890	156		
			17:02:15	46.36	20.15	127.33	7.49	6.34	890	140		

**TABLE D-17**

Profile PRO-13 on September 21, 2022 (1710-1724 hours PDT) located at North AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-13 (North Acute Zone Boundary - 24 ft from Diffuser)	50 ft	0.23 m/sec 348 deg. (mag.) Early Ebb Tide	17:10:50	3.01	20.41	123.88	0.02	0.02	826	44649	No plume detected near surface	
			17:10:51	3.17	20.35	123.84	0.02	0.02	826	46145		
			17:10:52	3.15	20.36	124.13	0.02	0.02	826	42359		
			17:10:53	3.16	20.39	124.24	0.02	0.02	826	46145		
			17:10:54	3.26	20.40	123.96	0.02	0.02	826	41929		
			17:10:55	3.07	20.40	124.21	0.02	0.02	826	42798		
			17:10:56	2.95	20.37	123.98	0.02	0.02	826	43704		
			17:10:57	3.07	20.37	123.98	0.02	0.02	826	43246		
			17:10:58	2.75	20.31	124.03	0.02	0.02	826	46932		
			17:10:59	2.63	20.35	124.01	0.02	0.02	826	42359		
			17:11:00	2.46	20.34	124.03	0.02	0.02	826	43246		
			17:11:01	2.51	20.39	124.07	0.02	0.02	826	42359		
			17:11:02	2.44	20.40	124.22	0.02	0.02	826	44171		
			17:11:03	2.45	20.41	124.22	0.02	0.02	826	44171		
			17:11:04	2.49	20.41	124.24	0.02	0.02	826	48304		
			17:11:05	2.46	20.41	124.24	0.02	0.02	826	41929		
			17:11:06	2.49	20.41	124.27	0.02	0.02	826	39712		
			17:11:07	2.49	20.41	124.15	0.02	0.02	826	44171		
			17:11:08	2.47	20.41	124.29	0.02	0.02	826	44171		
			17:11:09	2.45	20.41	123.93	0.02	0.02	826	48304		
			17:11:10	2.47	20.38	123.94	0.02	0.02	826	44171		
			17:11:11	2.46	20.33	123.84	0.02	0.02	826	43704		
			17:11:12	2.46	20.26	123.86	0.02	0.02	826	45635		
			17:11:13	2.47	20.25	123.86	0.02	0.02	826	45635		
			17:11:14	2.47	20.25	123.86	0.02	0.02	826	45137		
			17:11:15	2.52	20.25	123.86	0.02	0.02	826	42359		
			17:11:16	2.51	20.25	123.88	0.02	0.02	826	44649		
17:11:17	2.47	20.24	123.84	0.02	0.02	826	51625					
17:11:18	2.45	20.23	123.79	0.02	0.02	826	46145					
17:11:19	2.49	20.22	123.79	0.02	0.02	826	45635					
17:11:20	2.53	20.21	123.82	0.02	0.02	826	47471					
17:11:21	2.47	20.21	123.84	0.02	0.02	826	49167					
17:11:22	2.51	20.21	123.84	0.02	0.02	826	47746					
17:11:23	2.48	20.21	123.84	0.02	0.02	826	46145					
17:11:24	2.48	20.22	123.88	0.02	0.02	826	42798					
17:11:25	2.50	20.23	123.94	0.02	0.02	826	41929					
17:11:26	2.49	20.24	123.94	0.02	0.02	826	47471					
17:11:27	2.49	20.25	123.98	0.02	0.02	826	46667					

**TABLE D-17**

Profile PRO-13 on September 21, 2022 (1710-1724 hours PDT) located at North AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

19	Instantaneous Minimum Dilution in Profile
27	Minimum Average Dilution in Profile
48	Plume Average Dilution Detected
1848	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:11:28	2.54	20.26	124.01	0.02	0.02	826	40490		
			17:11:29	2.49	20.25	124.11	0.02	0.02	826	40097		
			17:11:30	2.56	20.27	124.15	0.02	0.02	826	45137		
			17:11:31	2.52	20.29	124.24	0.02	0.02	826	41929		
			17:11:32	2.54	20.31	124.42	0.02	0.02	826	40490		
			17:11:33	2.52	20.40	124.68	0.02	0.02	826	46667		
			17:11:34	2.47	20.42	124.68	0.02	0.02	826	42359		
			17:11:35	2.45	20.43	124.72	0.02	0.02	826	43246		
			17:11:36	2.50	20.43	124.72	0.02	0.02	826	46145		
			17:11:37	2.47	20.44	124.72	0.02	0.02	826	42143		
			17:11:38	2.48	20.44	124.77	0.02	0.02	826	42143		
			17:11:39	2.47	20.46	124.89	0.02	0.02	826	43246		
			17:11:40	2.43	20.48	124.92	0.02	0.02	826	44171		
			17:11:41	2.54	20.48	124.87	0.02	0.02	826	46145		
			17:11:42	2.46	20.45	124.76	0.02	0.02	826	44171		
			17:11:43	2.50	20.44	124.78	0.02	0.02	826	49759		
			17:11:44	2.44	20.42	124.76	0.02	0.02	826	44649		
			17:11:45	2.51	20.43	124.82	0.02	0.02	826	46667		
			17:11:46	2.51	20.46	124.90	0.02	0.02	826	45137		
			17:11:47	2.48	20.47	124.91	0.02	0.02	826	42577		
			17:11:48	2.47	20.46	124.89	0.02	0.02	826	49759		
			17:11:49	2.47	20.45	124.92	0.02	0.02	826	46667		
			17:11:50	2.48	20.45	124.94	0.02	0.02	826	48588		
			17:11:51	2.52	20.48	124.99	0.02	0.02	826	46932		
			17:11:52	2.50	20.48	124.97	0.02	0.02	826	42359		
			17:11:53	2.51	20.48	124.99	0.02	0.02	826	50988		
			17:11:54	2.50	20.50	125.05	0.02	0.02	826	46667		
			17:11:55	2.47	20.51	125.05	0.02	0.02	826	45635		
			17:11:56	2.52	20.51	125.07	0.02	0.02	826	46932		
			17:11:57	2.51	20.51	125.05	0.02	0.02	826	42798		
			17:11:58	2.50	20.50	125.01	0.02	0.02	826	42798		
			17:11:59	2.46	20.48	124.90	0.02	0.02	826	43246		
			17:12:00	2.50	20.47	124.92	0.02	0.02	826	46145		
			17:12:01	2.49	20.47	124.94	0.02	0.02	826	45635		
			17:12:02	2.48	20.47	124.96	0.02	0.02	826	43021		
			17:12:03	2.43	20.49	124.96	0.02	0.02	826	42359		
			17:12:04	2.34	20.50	125.07	0.02	0.02	826	45137		
			17:12:05	2.51	20.51	125.07	0.02	0.02	826	43704		

**TABLE D-17**

Profile PRO-13 on September 21, 2022 (1710-1724 hours PDT) located at North AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

19	Instantaneous Minimum Dilution in Profile
27	Minimum Average Dilution in Profile
48	Plume Average Dilution Detected
1848	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:12:06	2.42	20.50	124.99	0.02	0.02	826	44649		Traces of plume detected at 8 ft
			17:12:07	2.53	20.50	125.01	0.02	0.02	826	46667		
			17:12:08	2.88	20.49	124.96	0.02	0.02	826	46667		
			17:12:09	5.65	20.45	124.98	0.02	0.02	826	43704		
			17:12:10	7.79	20.30	125.26	0.02	0.02	826	42359		
			17:12:11	8.16	20.26	125.28	0.18	0.18	826	4712		
			17:12:12	8.24	20.27	125.41	0.36	0.36	826	2282	2793	
			17:12:13	8.34	20.26	125.41	0.72	0.27	826	3096		
			17:12:14	8.28	20.27	125.37	0.83	0.37	826	2245		
			17:12:15	8.35	20.27	125.26	0.34	0.34	826	2432		
			17:12:16	8.33	20.29	125.20	0.82	0.36	826	2293		
			17:12:17	8.34	20.29	125.18	0.33	0.33	826	2492		
			17:12:18	8.33	20.29	125.20	0.57	0.13	826	6334		
			17:12:19	8.36	20.29	125.18	0.08	0.08	826	10123		
			17:12:20	8.36	20.30	125.13	0.03	0.03	826	24880		
			17:12:21	8.31	20.30	125.16	0.22	0.22	826	3837		
			17:12:22	8.30	20.29	125.26	0.27	0.27	826	3013		
			17:12:23	8.34	20.29	125.18	0.08	0.08	826	10563		
			17:12:24	8.38	20.31	125.07	0.03	0.03	826	26222		
			17:12:25	8.35	20.32	125.11	0.39	0.39	826	2129		
			17:12:26	8.35	20.30	125.24	0.22	0.22	826	3746		
			17:12:27	8.35	20.30	125.20	0.02	0.02	826	42143		
			17:12:28	8.34	20.30	125.13	0.06	0.06	826	13366		
			17:12:29	8.33	20.30	125.24	0.02	0.02	826	43246		
			17:12:30	8.36	20.28	125.35	0.11	0.11	826	7844		
			17:12:31	8.34	20.28	125.26	0.02	0.02	826	47471		
			17:12:32	8.36	20.29	125.24	0.07	0.07	826	12402		
			17:12:33	8.36	20.29	125.30	0.32	0.32	826	2567		
			17:12:34	8.35	20.28	125.39	0.37	0.37	826	2242		
			17:12:35	8.30	20.27	125.53	0.90	0.43	826	1915		
			17:12:36	8.32	20.24	125.57	0.29	0.29	826	2858		
			17:12:37	8.33	20.23	125.60	0.76	0.30	826	2711		
			17:12:38	8.37	20.25	125.20	0.12	0.12	826	6843		
			17:12:39	8.31	20.30	124.94	0.55	0.12	826	7036		
			17:12:40	8.33	20.33	124.85	0.34	0.34	826	2430		
			17:12:41	8.34	20.34	124.89	0.61	0.17	826	4891		
			17:12:42	8.35	20.33	124.92	0.37	0.37	826	2226	3483	
			17:12:43	8.35	20.33	124.85	0.70	0.25	826	3260	Traces of plume detected at 8 ft	

**TABLE D-17**

Profile PRO-13 on September 21, 2022 (1710-1724 hours PDT) located at North AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
										19	27	
			17:12:44	8.35	20.34	124.87	0.75	0.29	826	2826		
			17:12:45	8.36	20.34	124.83	0.24	0.24	826	3479		
			17:12:46	8.33	20.33	124.97	0.04	0.04	826	21399		
			17:12:47	8.34	20.32	124.99	0.14	0.14	826	5720		
			17:12:48	8.33	20.31	125.03	0.06	0.06	826	12826		
			17:12:49	8.33	20.30	125.05	0.02	0.02	826	39333		
			17:12:50	8.32	20.31	124.99	0.11	0.11	826	7691		
			17:12:51	8.36	20.32	124.94	0.11	0.11	826	7734		
			17:12:52	8.38	20.32	125.01	0.02	0.02	826	48588		
			17:12:53	8.36	20.31	124.97	0.02	0.02	826	44171		
			17:12:54	8.41	20.31	125.07	0.02	0.02	826	44171		
			17:12:55	8.37	20.30	125.07	0.02	0.02	826	46932		
			17:12:56	8.39	20.30	125.09	0.02	0.02	826	41929		
			17:12:57	8.39	20.29	125.26	0.13	0.13	826	6388		
			17:12:58	8.41	20.28	125.26	0.12	0.12	826	6765		
			17:12:59	8.38	20.28	125.16	0.39	0.39	826	2124		
			17:13:00	8.40	20.29	125.05	0.02	0.02	826	43704		
			17:13:01	8.36	20.30	125.03	0.06	0.06	826	14096		
			17:13:02	8.39	20.30	124.97	0.08	0.08	826	10147		
			17:13:03	8.40	20.31	124.94	0.02	0.02	826	49167		
			17:13:04	8.40	20.31	125.01	0.02	0.02	826	47746		
			17:13:05	8.40	20.30	125.03	0.02	0.02	826	35451		
			17:13:06	8.43	20.29	125.24	0.02	0.02	826	42798		
			17:13:07	8.39	20.27	125.32	0.03	0.03	826	23804		
			17:13:08	8.35	20.27	125.32	0.05	0.05	826	17463		
			17:13:09	8.40	20.27	125.28	0.02	0.02	826	47471		
			17:13:10	8.39	20.28	125.18	0.02	0.02	826	45137		
			17:13:11	8.40	20.29	125.05	0.02	0.02	826	49759		
			17:13:12	8.39	20.29	125.05	0.02	0.02	826	46145		
			17:13:13	8.40	20.29	125.07	0.02	0.02	826	46404		
			17:13:14	8.36	20.28	125.09	0.02	0.02	826	42798		
			17:13:15	8.42	20.27	125.22	0.20	0.20	826	4212		
			17:13:16	8.37	20.27	125.24	0.05	0.05	826	17879		
			17:13:17	8.40	20.26	125.16	0.09	0.09	826	8769		
			17:13:18	8.38	20.30	124.76	0.02	0.02	826	42359		
			17:13:19	8.36	20.33	124.72	0.02	0.02	826	44171		
			17:13:20	8.40	20.34	124.65	0.02	0.02	826	45137		
			17:13:21	8.42	20.34	124.63	0.02	0.02	826	48304		



**TABLE D-17**

Profile PRO-13 on September 21, 2022 (1710-1724 hours PDT) located at North AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

19	Instantaneous Minimum Dilution in Profile
27	Minimum Average Dilution in Profile
48	Plume Average Dilution Detected
1848	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:13:22	8.43	20.34	124.61	0.02	0.02	826	46145		
			17:13:23	8.37	20.35	124.75	0.02	0.02	826	48023		
			17:13:24	8.41	20.33	124.76	0.02	0.02	826	46667		
			17:13:25	8.40	20.34	124.59	0.02	0.02	826	46932		
			17:13:26	8.35	20.36	124.57	0.02	0.02	826	47746		
			17:13:27	8.40	20.36	124.53	0.02	0.02	826	44649		
			17:13:28	8.33	20.36	124.46	0.02	0.02	826	45635		
			17:13:29	8.38	20.36	124.49	0.02	0.02	826	43704		
			17:13:30	8.31	20.36	124.51	0.02	0.02	826	46932		
			17:13:31	8.35	20.36	124.51	0.02	0.02	826	44171		
			17:13:32	8.62	20.35	124.58	0.02	0.02	826	46667		
			17:13:33	8.68	20.34	124.57	0.02	0.02	826	46932		
			17:13:34	9.16	20.34	124.63	0.02	0.02	826	45635		
			17:13:35	11.55	20.31	125.36	0.13	0.13	826	6359		
			17:13:36	13.40	20.21	126.28	2.81	2.14	826	385		
			17:13:37	13.71	20.19	126.23	3.32	2.60	826	318		
			17:13:38	13.95	20.17	126.21	3.02	2.33	826	355		
			17:13:39	13.99	20.17	126.12	2.81	2.14	826	385		
			17:13:40	13.92	20.17	126.08	2.88	2.21	826	374		
			17:13:41	13.98	20.16	126.16	2.95	2.27	826	364		
			17:13:42	14.00	20.16	126.28	3.36	2.63	826	314		
			17:13:43	13.92	20.16	126.32	3.36	2.64	826	313	480	Measured plume at 13-14 ft
			17:13:44	13.98	20.17	126.39	3.76	2.99	826	276		
			17:13:45	13.91	20.17	126.47	3.90	3.12	826	265		
			17:13:46	14.07	20.17	126.52	3.74	2.98	826	277		
			17:13:47	14.00	20.17	126.54	4.25	3.44	826	240		
			17:13:48	14.01	20.17	126.54	3.95	3.17	826	261		
			17:13:49	13.97	20.17	126.54	3.39	2.66	826	311		
			17:13:50	13.99	20.17	126.50	2.78	2.11	826	391		
			17:13:51	13.97	20.18	126.23	2.79	2.12	826	389		
			17:13:52	13.96	20.19	126.04	2.54	1.90	826	434		
			17:13:53	13.98	20.19	126.08	2.40	1.77	826	466		
			17:13:54	13.96	20.19	125.93	1.76	1.20	826	689		
			17:13:55	13.95	20.19	125.76	1.69	1.13	826	729		
			17:13:56	13.98	20.20	125.76	1.42	0.90	826	918		
			17:13:57	13.99	20.20	125.63	1.37	0.85	826	974		
			17:13:58	13.97	20.20	125.57	1.59	1.05	826	790		
			17:13:59	13.98	20.20	125.60	1.62	1.07	826	770		

**TABLE D-17**

Profile PRO-13 on September 21, 2022 (1710-1724 hours PDT) located at North AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>19</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>27</b>	<b>Minimum Average Dilution in Profile</b>
<b>48</b>	<b>Plume Average Dilution Detected</b>
<b>1848</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:14:00	13.96	20.20	125.66	1.71	1.16	826	713		
			17:14:01	13.94	20.19	125.76	2.10	1.50	826	550		
			17:14:02	13.96	20.19	125.78	2.02	1.43	826	576		
			17:14:03	13.97	20.19	125.76	1.95	1.37	826	604		
			17:14:04	13.96	20.19	125.76	1.44	0.91	826	907		
			17:14:05	13.98	20.20	125.66	0.74	0.29	826	2892		
			17:14:06	13.97	20.20	125.64	0.46	0.03	826	26964		
			17:14:07	14.01	20.20	125.63	0.93	0.46	826	1807		
			17:14:08	13.97	20.20	125.70	1.88	1.31	826	632		
			17:14:09	13.96	20.20	125.72	2.25	1.64	826	503		
			17:14:10	13.97	20.19	125.80	1.95	1.37	826	603		
			17:14:11	13.96	20.19	125.80	2.36	1.74	826	475	553	Measured plume at 13-14 ft
			17:14:12	13.95	20.19	125.87	2.12	1.52	826	542		
			17:14:13	13.97	20.18	125.91	2.07	1.48	826	558		
			17:14:14	13.98	20.18	125.89	2.14	1.54	826	536		
			17:14:15	13.97	20.19	125.83	2.17	1.57	826	525		
			17:14:16	13.97	20.19	125.80	1.96	1.38	826	598		
			17:14:17	13.92	20.19	125.76	1.51	0.98	826	847		
			17:14:18	13.94	20.19	125.72	0.85	0.38	826	2156		
			17:14:19	13.89	20.19	125.72	0.46	0.04	826	22991		
			17:14:20	13.87	20.19	125.80	0.52	0.09	826	9324		
			17:14:21	13.91	20.19	125.72	0.68	0.24	826	3501		
			17:14:22	13.88	20.19	125.71	0.84	0.38	826	2190		
			17:14:23	13.93	20.19	125.87	1.16	0.66	826	1244		
			17:14:24	13.91	20.19	125.87	1.16	0.67	826	1239		
			17:14:25	13.90	20.19	125.93	2.05	1.46	826	565		
			17:14:26	13.92	20.19	126.06	2.48	1.84	826	448		
			17:14:27	13.97	20.18	126.18	2.63	1.98	826	417		
			17:14:28	13.89	20.18	126.27	2.83	2.16	826	382		
			17:14:29	13.95	20.17	126.54	2.71	2.05	826	402		
			17:14:30	13.89	20.17	126.47	3.23	2.52	826	328		
			17:14:31	13.92	20.17	126.64	3.52	2.78	826	297		
			17:14:32	13.93	20.17	126.62	3.46	2.73	826	303	402	Measured plume at 13-14 ft
			17:14:33	13.95	20.17	126.60	3.55	2.80	826	295		
			17:14:34	13.93	20.17	126.64	3.38	2.65	826	311		
			17:14:35	13.98	20.17	126.60	3.55	2.81	826	294		
			17:14:36	13.99	20.17	126.64	3.37	2.65	826	312		
			17:14:37	13.97	20.17	126.58	3.75	2.99	826	277		

**TABLE D-17**

Profile PRO-13 on September 21, 2022 (1710-1724 hours PDT) located at North AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:14:38	13.98	20.17	126.32	2.69	2.04	826	406		
			17:14:39	13.97	20.19	126.26	2.99	2.31	826	358		
			17:14:40	13.97	20.18	126.39	3.07	2.38	826	348		
			17:14:41	13.96	20.18	126.23	2.92	2.24	826	369		
			17:14:42	13.94	20.19	125.95	2.17	1.57	826	527		
			17:14:43	13.93	20.20	125.87	2.36	1.74	826	476		
			17:14:44	13.94	20.21	125.87	2.53	1.90	826	436		
			17:14:45	13.95	20.21	125.83	2.42	1.79	826	460		
			17:14:46	13.97	20.21	125.87	2.15	1.55	826	534		
			17:14:47	13.96	20.21	125.85	2.24	1.63	826	506		
			17:14:48	13.93	20.21	125.95	2.43	1.80	826	459		
			17:14:49	13.96	20.20	126.06	2.88	2.21	826	374		
			17:14:50	13.93	20.19	126.30	2.75	2.09	826	396		
			17:14:51	13.93	20.18	126.28	2.65	2.00	826	412		
			17:14:52	13.95	20.19	126.23	2.59	1.95	826	424		
			17:14:53	13.92	20.19	126.23	2.09	1.50	826	551		
			17:14:54	13.94	20.21	125.76	1.17	0.68	826	1223		
			17:14:55	13.98	20.23	125.48	0.99	0.51	826	1626		
			17:14:56	13.98	20.25	125.25	0.48	0.05	826	16486		
			17:14:57	13.93	20.25	125.28	0.49	0.06	826	13296		
			17:14:58	13.98	20.24	125.35	0.61	0.16	826	5024		
			17:14:59	13.90	20.24	125.41	0.96	0.48	826	1719		
			17:15:00	13.95	20.23	125.45	0.92	0.44	826	1863		
			17:15:01	13.93	20.23	125.43	1.13	0.64	826	1291		
			17:15:02	13.98	20.22	125.49	1.49	0.96	826	862		
			17:15:03	14.08	20.21	125.83	1.61	1.07	826	775		
			17:15:04	14.17	20.20	125.78	1.65	1.11	826	747		
			17:15:05	15.57	20.19	125.34	1.33	0.82	826	1011		
			17:15:06	18.44	20.15	125.57	1.65	1.10	826	751		
			17:15:07	18.95	20.15	125.45	2.03	1.44	826	573		
			17:15:08	19.13	20.15	125.51	2.36	1.74	826	475		
			17:15:09	19.17	20.14	125.56	2.48	1.85	826	447		
			17:15:10	19.22	20.14	125.56	2.46	1.83	826	452		
			17:15:11	19.18	20.14	125.70	2.75	2.08	826	396		
			17:15:12	19.27	20.14	125.70	2.93	2.25	826	367	480	Measured plume at 19 ft
			17:15:13	19.09	20.14	125.66	2.91	2.24	826	369		
			17:15:14	19.12	20.14	125.61	2.60	1.95	826	423		
			17:15:15	19.15	20.14	125.62	2.62	1.98	826	418		

19	Instantaneous Minimum Dilution in Profile
27	Minimum Average Dilution in Profile
48	Plume Average Dilution Detected
1848	Profile Average Dilution

**TABLE D-17**

Profile PRO-13 on September 21, 2022 (1710-1724 hours PDT) located at North AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

19	Instantaneous Minimum Dilution in Profile
27	Minimum Average Dilution in Profile
48	Plume Average Dilution Detected
1848	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:15:16	19.18	20.14	125.63	2.55	1.91	826	432		
			17:15:17	19.21	20.14	125.62	2.56	1.92	826	430		
			17:15:18	19.18	20.14	125.60	2.80	2.14	826	387		
			17:15:19	19.19	20.14	125.61	2.60	1.95	826	423		
			17:15:20	19.23	20.14	125.60	2.65	1.99	826	414		
			17:15:21	19.20	20.14	125.60	2.42	1.79	826	461		
			17:15:22	19.20	20.14	125.54	2.30	1.69	826	490		
			17:15:23	19.21	20.14	125.43	1.84	1.27	826	651		
			17:15:24	19.24	20.14	125.49	1.78	1.22	826	676		
			17:15:25	19.20	20.14	125.57	1.85	1.29	826	643		
			17:15:26	19.21	20.14	125.54	2.30	1.69	826	489		
			17:15:27	19.21	20.14	125.45	2.68	2.02	826	408		
			17:15:28	19.22	20.14	125.47	2.03	1.44	826	572		
			17:15:29	19.14	20.14	125.41	1.86	1.29	826	641		
			17:15:30	19.21	20.14	125.35	1.63	1.09	826	760		
			17:15:31	19.20	20.14	125.09	1.32	0.81	826	1025		
			17:15:32	19.18	20.14	125.11	1.01	0.52	826	1576		
			17:15:33	19.15	20.14	125.30	1.54	1.00	826	826		
			17:15:34	19.19	20.14	125.32	1.95	1.37	826	603		
			17:15:35	19.21	20.14	125.39	1.90	1.33	826	622		
			17:15:36	19.18	20.14	125.43	1.88	1.30	826	633	635	Measured plume at 19 ft
			17:15:37	19.20	20.14	125.43	2.18	1.58	826	522		
			17:15:38	19.16	20.14	125.20	2.11	1.52	826	545		
			17:15:39	19.16	20.14	124.99	1.75	1.19	826	693		
			17:15:40	19.19	20.14	124.94	0.84	0.38	826	2176		
			17:15:41	19.15	20.14	124.70	0.12	0.12	826	6776		
			17:15:42	19.17	20.14	124.70	0.49	0.06	826	14488		
			17:15:43	19.20	20.14	124.68	0.76	0.31	826	2698		
			17:15:44	19.17	20.14	124.81	0.90	0.43	826	1935		
			17:15:45	19.16	20.14	124.76	0.98	0.50	826	1659		
			17:15:46	19.20	20.14	124.65	0.72	0.27	826	3048		
			17:15:47	19.19	20.14	124.78	0.59	0.15	826	5595		
			17:15:48	19.20	20.14	124.95	1.14	0.65	826	1275		
			17:15:49	19.16	20.14	124.87	0.90	0.43	826	1919		
			17:15:50	19.17	20.14	124.72	0.67	0.22	826	3707		
			17:15:51	19.21	20.14	124.59	0.09	0.09	826	9440		
			17:15:52	19.18	20.14	124.51	0.02	0.02	826	45635		
			17:15:53	19.18	20.15	124.56	0.02	0.02	826	44171		

**TABLE D-17**

Profile PRO-13 on September 21, 2022 (1710-1724 hours PDT) located at North AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

19	Instantaneous Minimum Dilution in Profile
27	Minimum Average Dilution in Profile
48	Plume Average Dilution Detected
1848	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:15:54	19.18	20.15	124.61	0.02	0.02	826	43704		
			17:15:55	19.19	20.15	124.68	0.05	0.05	826	17802		
			17:15:56	19.17	20.15	124.65	0.39	0.39	826	2134		
			17:15:57	19.20	20.15	124.65	0.35	0.35	826	2339		
			17:15:58	19.22	20.15	124.59	0.24	0.24	826	3484		
			17:15:59	19.23	20.15	124.57	0.02	0.02	826	44649		
			17:16:00	19.18	20.15	124.57	0.02	0.02	826	48304		
			17:16:01	19.23	20.15	124.59	0.17	0.17	826	4736		
			17:16:02	19.19	20.15	124.59	0.17	0.17	826	4994		
			17:16:03	19.17	20.15	124.63	0.15	0.15	826	5559		
			17:16:04	19.19	20.15	124.63	0.02	0.02	826	38962		
			17:16:05	19.21	20.14	124.63	0.02	0.02	826	44649		
			17:16:06	19.19	20.14	124.55	0.03	0.03	826	24731		
			17:16:07	19.19	20.15	124.51	0.15	0.15	826	5596		
			17:16:08	19.21	20.15	124.53	0.02	0.02	826	46145		
			17:16:09	19.19	20.15	124.49	0.02	0.02	826	37545		
			17:16:10	19.21	20.15	124.53	0.03	0.03	826	25337		
			17:16:11	19.20	20.15	124.59	0.15	0.15	826	5589		
			17:16:12	19.22	20.15	124.69	0.25	0.25	826	3365		
			17:16:13	19.22	20.15	124.78	0.49	0.06	826	12779		
			17:16:14	19.25	20.14	124.74	0.43	0.01	826	91666		
			17:16:15	19.17	20.14	124.78	0.11	0.11	826	7778		
			17:16:16	19.20	20.14	124.87	0.28	0.28	826	2979		
			17:16:17	19.17	20.14	124.76	0.45	0.02	826	34043		
			17:16:18	19.18	20.15	124.74	0.24	0.24	826	3487		
			17:16:19	19.19	20.15	124.78	0.61	0.17	826	4827		
			17:16:20	19.22	20.15	124.80	0.75	0.30	826	2797		
			17:16:21	19.22	20.15	124.85	0.18	0.18	826	4717		
			17:16:22	19.47	20.14	124.81	0.09	0.09	826	9027		
			17:16:23	19.72	20.14	124.80	0.12	0.12	826	7096		
			17:16:24	20.96	20.14	124.85	0.36	0.36	826	2325		
			17:16:25	23.89	20.14	124.85	0.97	0.49	826	1692		
			17:16:26	24.49	20.14	124.85	0.50	0.07	826	12501		
			17:16:27	24.66	20.14	124.85	0.42	0.42	826	1960		
			17:16:28	24.64	20.14	124.82	0.22	0.22	826	3828		
			17:16:29	24.72	20.14	124.80	0.23	0.23	826	3541		
			17:16:30	24.64	20.14	124.76	0.23	0.23	826	3559		
			17:16:31	24.75	20.14	124.68	0.70	0.25	826	3355		

**TABLE D-17**

Profile PRO-13 on September 21, 2022 (1710-1724 hours PDT) located at North AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>19</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>27</b>	<b>Minimum Average Dilution in Profile</b>
<b>48</b>	<b>Plume Average Dilution Detected</b>
<b>1848</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:16:32	24.70	20.14	124.44	0.49	0.07	826	12673		
			17:16:33	24.73	20.14	124.22	0.45	0.03	826	29094		
			17:16:34	24.72	20.13	124.22	0.34	0.34	826	2422		
			17:16:35	24.72	20.13	124.09	0.18	0.18	826	4691		
			17:16:36	24.72	20.13	124.18	0.48	0.05	826	16111		
			17:16:37	24.72	20.13	124.25	0.36	0.36	826	2293		
			17:16:38	24.67	20.14	124.44	0.26	0.26	826	3166		
			17:16:39	24.67	20.14	124.40	0.28	0.28	826	2899		
			17:16:40	24.70	20.14	124.42	0.21	0.21	826	3941		
			17:16:41	24.70	20.14	124.36	0.28	0.28	826	2988		
			17:16:42	24.68	20.14	124.22	0.14	0.14	826	5942		
			17:16:43	24.71	20.14	124.13	0.13	0.13	826	6267		
			17:16:44	24.78	20.14	124.20	0.06	0.06	826	13366		
			17:16:45	24.74	20.14	124.15	0.02	0.02	826	45137		
			17:16:46	24.83	20.13	124.07	0.26	0.26	826	3122		
			17:16:47	24.78	20.13	124.03	0.45	0.03	826	28642		
			17:16:48	24.77	20.13	124.01	0.10	0.10	826	8360		
			17:16:49	24.83	20.13	123.96	0.31	0.31	826	2677		
			17:16:50	24.81	20.13	123.96	0.18	0.18	826	4651		
			17:16:51	24.75	20.13	123.93	0.09	0.09	826	9077		
			17:16:52	24.79	20.13	124.01	0.12	0.12	826	7018		
			17:16:53	24.81	20.13	124.03	0.15	0.15	826	5381		
			17:16:54	24.74	20.13	123.99	0.20	0.20	826	4151		
			17:16:55	24.79	20.13	124.05	0.29	0.29	826	2834		
			17:16:56	24.78	20.13	124.03	0.61	0.17	826	4906		
			17:16:57	24.81	20.13	123.94	0.78	0.32	826	2568		
			17:16:58	24.81	20.13	123.99	0.31	0.31	826	2703		
			17:16:59	24.79	20.13	124.03	0.18	0.18	826	4533		
			17:17:00	24.82	20.12	123.90	0.13	0.13	826	6310		
			17:17:01	24.80	20.12	123.97	0.18	0.18	826	4696		
			17:17:02	24.76	20.13	123.96	0.40	0.40	826	2085		
			17:17:03	24.80	20.13	124.03	0.38	0.38	826	2199		
			17:17:04	24.73	20.13	124.07	0.02	0.02	826	41300		
			17:17:05	24.77	20.13	124.03	0.47	0.04	826	18360		
			17:17:06	24.79	20.13	124.03	0.04	0.04	826	19076		
			17:17:07	24.79	20.13	124.03	0.07	0.07	826	11520		
			17:17:08	24.81	20.13	124.09	0.07	0.07	826	11766		
			17:17:09	24.77	20.13	124.15	0.05	0.05	826	15325		

**TABLE D-17**

Profile PRO-13 on September 21, 2022 (1710-1724 hours PDT) located at North AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							19	27	48	1848		
			17:17:10	24.83	20.13	124.18	0.21	0.21	826	4010		Measured plume at 25 ft
			17:17:11	24.74	20.13	124.09	0.19	0.19	826	4304		
			17:17:12	24.77	20.13	124.05	0.34	0.34	826	2402	3804	
			17:17:13	24.76	20.13	124.07	0.18	0.18	826	4501		
			17:17:14	24.79	20.13	124.13	0.02	0.02	826	45635		
			17:17:15	24.81	20.13	124.18	0.12	0.12	826	7042		
			17:17:16	24.81	20.13	124.24	0.24	0.24	826	3496		
			17:17:17	24.79	20.13	124.18	0.17	0.17	826	4742		
			17:17:18	24.80	20.13	124.29	0.27	0.27	826	3005	3385	
			17:17:19	24.78	20.14	124.30	0.36	0.36	826	2298		
			17:17:20	24.77	20.14	124.30	0.04	0.04	826	18989		Measured plume at 25 ft
			17:17:21	24.77	20.14	124.25	0.02	0.02	826	43246		
			17:17:22	24.78	20.14	124.22	0.13	0.13	826	6530		
			17:17:23	24.81	20.14	124.18	0.12	0.12	826	7072		
			17:17:24	24.77	20.14	124.15	0.17	0.17	826	4943		
			17:17:25	24.77	20.13	124.13	0.06	0.06	826	13929		
			17:17:26	24.83	20.13	124.13	0.29	0.29	826	2833		
			17:17:27	24.74	20.13	124.11	0.54	0.11	826	7753		
			17:17:28	24.78	20.13	124.13	0.16	0.16	826	5150		
			17:17:29	24.78	20.13	124.20	0.10	0.10	826	8403		
			17:17:30	24.79	20.14	124.34	0.14	0.14	826	5999		
			17:17:31	24.82	20.14	124.36	0.09	0.09	826	9008		
			17:17:32	24.80	20.14	124.38	0.18	0.18	826	4635		
			17:17:33	24.79	20.14	124.38	0.13	0.13	826	6206		
			17:17:34	24.77	20.14	124.32	0.06	0.06	826	14776		
			17:17:35	24.83	20.14	124.27	0.02	0.02	826	46667		
			17:17:36	24.79	20.14	124.32	0.18	0.18	826	4526		
			17:17:37	24.71	20.14	124.40	0.31	0.31	826	2636		
			17:17:38	24.73	20.15	124.46	0.02	0.02	826	38962		
			17:17:39	24.75	20.15	124.46	0.07	0.07	826	11868		
			17:17:40	25.06	20.15	124.49	0.02	0.02	826	46145		
			17:17:41	26.40	20.15	124.37	0.26	0.26	826	3121		
			17:17:42	29.46	20.14	124.11	0.24	0.24	826	3387		
			17:17:43	30.31	20.13	124.07	0.12	0.12	826	7121		
			17:17:44	30.54	20.13	124.03	0.02	0.02	826	46932		
			17:17:45	30.51	20.13	124.07	0.02	0.02	826	48023		
			17:17:46	30.60	20.13	124.07	0.10	0.10	826	8004		
			17:17:47	30.63	20.13	124.15	0.15	0.15	826	5677		

**TABLE D-17**

Profile PRO-13 on September 21, 2022 (1710-1724 hours PDT) located at North AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
27												
48												
1848												
			17:17:48	30.60	20.13	124.20	0.23	0.23	826	3645		
			17:17:49	30.62	20.13	124.16	0.17	0.17	826	4761		
			17:17:50	30.63	20.13	124.15	0.24	0.24	826	3475		
			17:17:51	30.59	20.13	124.15	0.39	0.39	826	2127		
			17:17:52	30.61	20.14	124.13	0.07	0.07	826	12041		
			17:17:53	30.60	20.14	124.26	0.03	0.03	826	25183		
			17:17:54	30.58	20.14	124.20	0.04	0.04	826	19527		
			17:17:55	30.65	20.14	124.15	0.51	0.08	826	10800		
			17:17:56	30.54	20.13	124.18	0.14	0.14	826	6091		
			17:17:57	30.43	20.13	124.32	0.20	0.20	826	4128		
			17:17:58	30.44	20.14	124.42	0.64	0.19	826	4257		
			17:17:59	30.31	20.14	124.42	0.69	0.24	826	3383		
			17:18:00	30.37	20.14	124.51	0.79	0.33	826	2528		
			17:18:01	30.30	20.14	124.68	0.53	0.09	826	8891		
			17:18:02	30.35	20.14	124.68	0.43	0.01	826	110343		
			17:18:03	30.33	20.14	124.63	0.33	0.33	826	2531		
			17:18:04	30.33	20.14	124.63	0.77	0.31	826	2642		
			17:18:05	30.31	20.14	124.65	1.05	0.56	826	1468		
			17:18:06	30.33	20.14	124.65	0.99	0.51	826	1632		
			17:18:07	30.43	20.14	124.70	0.93	0.46	826	1795		
			17:18:08	30.42	20.14	124.70	0.88	0.41	826	2018		
			17:18:09	30.47	20.14	124.72	1.44	0.91	826	908	3292	Measured plume at 30 ft
			17:18:10	30.44	20.14	124.70	0.90	0.43	826	1930		
			17:18:11	30.52	20.14	124.76	1.24	0.74	826	1124		
			17:18:12	30.46	20.14	124.46	0.25	0.25	826	3299		
			17:18:13	30.49	20.14	124.51	0.27	0.27	826	3046		
			17:18:14	30.48	20.14	124.53	0.60	0.16	826	5305		
			17:18:15	30.51	20.14	124.44	0.09	0.09	826	9270		
			17:18:16	30.43	20.14	124.25	0.68	0.23	826	3573		
			17:18:17	30.45	20.13	124.13	0.19	0.19	826	4424		
			17:18:18	30.46	20.13	124.22	0.34	0.34	826	2430		
			17:18:19	30.48	20.13	124.32	0.21	0.21	826	3891		
			17:18:20	30.46	20.13	124.27	0.54	0.11	826	7600		
			17:18:21	30.49	20.13	124.18	0.23	0.23	826	3655		
			17:18:22	30.48	20.13	124.05	0.10	0.10	826	8035		
			17:18:23	30.46	20.13	124.01	0.17	0.17	826	4723		
			17:18:24	30.42	20.13	124.01	0.17	0.17	826	4888		
			17:18:25	30.50	20.13	124.01	0.82	0.36	826	2324		



**TABLE D-17**

Profile PRO-13 on September 21, 2022 (1710-1724 hours PDT) located at North AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>19</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>27</b>	<b>Minimum Average Dilution in Profile</b>
<b>48</b>	<b>Plume Average Dilution Detected</b>
<b>1848</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:18:26	30.46	20.13	124.11	0.49	0.06	826	13373		
			17:18:27	30.52	20.13	124.26	0.33	0.33	826	2479		
			17:18:28	30.45	20.14	124.38	0.60	0.16	826	5206		
			17:18:29	30.45	20.14	124.49	0.99	0.51	826	1622		
			17:18:30	30.47	20.14	124.40	0.99	0.51	826	1609		
			17:18:31	30.50	20.14	124.30	0.53	0.09	826	8798		
			17:18:32	30.50	20.13	124.34	0.51	0.08	826	10202		
			17:18:33	30.51	20.14	124.38	0.43	0.01	826	107760		
			17:18:34	30.47	20.14	124.44	0.44	0.02	826	43135		
			17:18:35	30.47	20.14	124.42	0.75	0.30	826	2791		
			17:18:36	30.48	20.14	124.34	0.61	0.17	826	4938		
			17:18:37	30.50	20.14	124.46	0.46	0.04	826	21640		
			17:18:38	30.50	20.14	124.56	0.61	0.17	826	4896		
			17:18:39	30.48	20.14	124.49	0.46	0.03	826	26575		
			17:18:40	30.48	20.14	124.42	0.02	0.02	826	50366		
			17:18:41	30.46	20.14	124.44	0.02	0.02	826	37890		
			17:18:42	30.44	20.14	124.51	0.17	0.17	826	4816		
			17:18:43	30.45	20.14	124.63	0.28	0.28	826	2900		
			17:18:44	30.51	20.14	124.63	0.37	0.37	826	2251	2947	Measured plume at 30 ft
			17:18:45	30.45	20.14	124.59	0.30	0.30	826	2734		
			17:18:46	30.51	20.14	124.51	0.41	0.41	826	2034		
			17:18:47	30.48	20.14	124.46	0.07	0.07	826	12310		
			17:18:48	30.51	20.14	124.34	0.07	0.07	826	12310		
			17:18:49	30.46	20.14	124.36	0.12	0.12	826	7145		
			17:18:50	30.54	20.14	124.51	0.47	0.05	826	17966		
			17:18:51	30.44	20.14	124.40	0.24	0.24	826	3413		
			17:18:52	30.54	20.14	124.27	0.09	0.09	826	9354		
			17:18:53	30.48	20.14	124.31	0.16	0.16	826	5030		
			17:18:54	30.53	20.14	124.32	0.46	0.03	826	26271		
			17:18:55	30.49	20.14	124.34	0.30	0.30	826	2795		
			17:18:56	30.51	20.14	124.36	0.31	0.31	826	2664		
			17:18:57	30.53	20.14	124.40	0.44	0.01	826	59614		
			17:18:58	30.50	20.14	124.38	0.82	0.36	826	2320		
			17:18:59	30.55	20.14	124.30	1.14	0.64	826	1281		
			17:19:00	30.51	20.14	124.34	0.39	0.39	826	2107		
			17:19:01	30.56	20.14	124.44	0.21	0.21	826	3926		
			17:19:02	30.50	20.14	124.49	0.54	0.11	826	7531	4046	Measured plume at 30 ft
			17:19:03	30.51	20.14	124.55	0.38	0.38	826	2166		

**TABLE D-17**

Profile PRO-13 on September 21, 2022 (1710-1724 hours PDT) located at North AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>19</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>27</b>	<b>Minimum Average Dilution in Profile</b>
<b>48</b>	<b>Plume Average Dilution Detected</b>
<b>1848</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:19:04	30.54	20.14	124.63	0.67	0.22	826	3704		
			17:19:05	30.53	20.14	124.70	0.61	0.17	826	4981		
			17:19:06	30.45	20.14	124.70	0.53	0.10	826	8561		
			17:19:07	30.54	20.14	124.63	0.21	0.21	826	3882		
			17:19:08	30.51	20.15	124.61	0.05	0.05	826	16454		
			17:19:09	30.51	20.15	124.57	0.02	0.02	826	49759		
			17:19:10	30.53	20.14	124.40	0.05	0.05	826	15977		
			17:19:11	30.53	20.14	124.31	0.23	0.23	826	3582		
			17:19:12	30.51	20.14	124.24	0.18	0.18	826	4635		
			17:19:13	30.54	20.14	124.18	0.10	0.10	826	7958		
			17:19:14	30.58	20.13	124.21	0.17	0.17	826	4850		
			17:19:15	30.64	20.14	124.27	0.27	0.27	826	3099		
			17:19:16	30.55	20.14	124.22	0.21	0.21	826	3958		
			17:19:17	30.55	20.14	124.20	0.17	0.17	826	4753	4125	Measured plume at 30 ft
			17:19:18	30.54	20.14	124.24	0.13	0.13	826	6398		
			17:19:19	30.55	20.14	124.20	0.13	0.13	826	6206		
			17:19:20	30.48	20.14	124.15	0.28	0.28	826	2899		
			17:19:21	30.57	20.13	124.13	0.34	0.34	826	2396		
			17:19:22	30.56	20.13	124.09	0.32	0.32	826	2562		
			17:19:23	30.58	20.13	124.20	0.17	0.17	826	4859		
			17:19:24	30.49	20.13	124.10	0.25	0.25	826	3266		
			17:19:25	30.41	20.13	124.05	0.02	0.02	826	50366		
			17:19:26	30.56	20.13	123.95	0.57	0.13	826	6378		
			17:19:27	30.63	20.13	123.92	0.59	0.15	826	5342		
			17:19:28	30.80	20.13	123.92	0.40	0.40	826	2081		
			17:19:29	31.18	20.13	123.96	0.28	0.28	826	2995		
			17:19:30	34.08	20.13	124.16	0.47	0.04	826	19324		
			17:19:31	35.89	20.13	124.26	0.75	0.29	826	2821		
			17:19:32	36.05	20.13	124.18	0.03	0.03	826	28483		
			17:19:33	35.77	20.13	124.30	0.06	0.06	826	14829		
			17:19:34	35.95	20.13	124.29	0.51	0.08	826	10826		
			17:19:35	35.99	20.13	124.29	0.48	0.06	826	14959		
			17:19:36	36.04	20.13	124.23	0.59	0.15	826	5449		
			17:19:37	36.03	20.13	124.11	0.30	0.30	826	2742		
			17:19:38	35.92	20.13	124.09	0.26	0.26	826	3232		
			17:19:39	35.97	20.13	124.22	0.27	0.27	826	3098		
			17:19:40	35.94	20.13	124.25	0.16	0.16	826	5089		
			17:19:41	35.91	20.13	124.27	0.42	0.42	826	1974		

**TABLE D-17**

Profile PRO-13 on September 21, 2022 (1710-1724 hours PDT) located at North AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

19	Instantaneous Minimum Dilution in Profile
27	Minimum Average Dilution in Profile
48	Plume Average Dilution Detected
1848	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:19:42	35.94	20.13	124.25	0.42	0.42	826	1970	3034	Measured plume at 36 ft
			17:19:43	36.02	20.13	124.24	0.24	0.24	826	3374		
			17:19:44	35.96	20.13	124.27	0.65	0.20	826	4048		
			17:19:45	35.98	20.13	124.36	0.62	0.17	826	4740		
			17:19:46	35.98	20.13	124.38	0.73	0.27	826	3015		
			17:19:47	35.98	20.13	124.40	0.78	0.33	826	2541		
			17:19:48	35.98	20.13	124.40	0.63	0.19	826	4321		
			17:19:49	35.93	20.14	124.49	0.18	0.18	826	4661		
			17:19:50	35.94	20.14	124.53	0.70	0.25	826	3327		
			17:19:51	35.98	20.14	124.42	0.87	0.40	826	2064		
			17:19:52	36.00	20.13	124.46	0.56	0.13	826	6579		
			17:19:53	36.00	20.13	124.55	0.82	0.36	826	2314		
			17:19:54	36.02	20.14	124.65	1.23	0.72	826	1145		
			17:19:55	36.03	20.14	124.66	1.08	0.59	826	1398		
			17:19:56	36.00	20.14	124.65	1.21	0.71	826	1162		
			17:19:57	36.01	20.14	124.72	0.91	0.44	826	1875		
			17:19:58	36.00	20.14	124.74	1.02	0.54	826	1531		
			17:19:59	36.04	20.14	124.74	0.97	0.49	826	1687		
			17:20:00	35.98	20.14	124.57	0.73	0.28	826	3002		
			17:20:01	35.96	20.14	124.49	0.33	0.33	826	2534		
			17:20:02	35.98	20.13	124.13	0.02	0.02	826	35451		
			17:20:03	35.99	20.13	123.96	0.11	0.11	826	7201		
			17:20:04	35.96	20.13	124.09	0.10	0.10	826	8524		
			17:20:05	36.00	20.13	124.20	0.39	0.39	826	2129		
			17:20:06	36.02	20.13	124.31	0.63	0.19	826	4381		
			17:20:07	36.08	20.13	124.44	0.27	0.27	826	3058		
			17:20:08	36.08	20.13	124.20	0.48	0.06	826	14815		
			17:20:09	36.05	20.13	124.15	0.29	0.29	826	2838		
			17:20:10	35.99	20.13	124.15	0.21	0.21	826	3965		
			17:20:11	35.90	20.13	124.09	0.39	0.39	826	2123		
			17:20:12	35.86	20.13	124.03	0.15	0.15	826	5385		
			17:20:13	35.90	20.13	123.99	1.41	0.88	826	934		
			17:20:14	35.89	20.13	123.95	0.27	0.27	826	3046		
			17:20:15	35.86	20.13	123.96	0.17	0.17	826	4845		
			17:20:16	35.87	20.13	123.94	0.02	0.02	826	46667		
			17:20:17	35.87	20.13	124.03	0.02	0.02	826	43704		
			17:20:18	35.84	20.13	124.03	0.13	0.13	826	6211		
			17:20:19	35.86	20.13	124.01	0.53	0.10	826	8609		

**TABLE D-17**

Profile PRO-13 on September 21, 2022 (1710-1724 hours PDT) located at North AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
										19	27	
										Instantaneous Minimum Dilution in Profile		
										Minimum Average Dilution in Profile		
										Plume Average Dilution Detected		
										Profile Average Dilution		
			17:20:20	35.87	20.13	124.03	0.14	0.14	826	5955	5595	Measured plume at 36 ft
			17:20:21	35.84	20.13	124.07	0.35	0.35	826	2370		
			17:20:22	35.89	20.13	124.01	0.61	0.17	826	4832		
			17:20:23	35.90	20.13	124.05	0.02	0.02	826	46145		
			17:20:24	35.85	20.13	124.06	0.05	0.05	826	15915		
			17:20:25	35.84	20.13	124.09	0.57	0.13	826	6369		
			17:20:26	35.85	20.13	124.22	0.21	0.21	826	3958		
			17:20:27	35.99	20.13	124.29	0.27	0.27	826	3037		
			17:20:28	35.99	20.13	124.25	0.80	0.34	826	2421		
			17:20:29	36.02	20.13	124.30	0.49	0.06	826	13877		
			17:20:30	35.99	20.13	124.22	0.50	0.07	826	11073		
			17:20:31	35.98	20.13	124.18	0.38	0.38	826	2149		
			17:20:32	36.03	20.13	124.13	0.19	0.19	826	4366		
			17:20:33	36.11	20.13	124.22	0.47	0.04	826	20998		
			17:20:34	36.13	20.13	124.18	0.37	0.37	826	2232		
			17:20:35	36.20	20.13	124.09	1.03	0.54	826	1518		
			17:20:36	36.15	20.13	124.11	0.11	0.11	826	7195		
			17:20:37	36.08	20.13	124.09	0.17	0.17	826	4734		
			17:20:38	36.07	20.13	124.03	0.03	0.03	826	29606		
			17:20:39	36.08	20.13	124.03	0.46	0.04	826	22055		
			17:20:40	36.10	20.13	124.07	0.05	0.05	826	17725		
			17:20:41	36.09	20.13	124.05	0.12	0.12	826	6843		
			17:20:42	36.09	20.13	124.13	0.26	0.26	826	3141		
			17:20:43	36.08	20.13	124.12	0.09	0.09	826	9291		
			17:20:44	36.00	20.13	124.07	0.89	0.42	826	1951	4904	Measured plume at 36 ft
			17:20:45	36.03	20.13	124.13	0.53	0.10	826	8482		
			17:20:46	36.06	20.13	124.15	0.35	0.35	826	2354		
			17:20:47	35.91	20.13	124.21	0.32	0.32	826	2559		
			17:20:48	35.97	20.13	124.24	0.62	0.18	826	4687		
			17:20:49	35.91	20.13	124.20	0.17	0.17	826	4828		
			17:20:50	36.16	20.13	124.11	0.06	0.06	826	14829		
			17:20:51	38.31	20.13	124.20	0.49	0.06	826	13257		
			17:20:52	40.63	20.16	140.67	6.51	5.46	826	151		
			17:20:53	41.05	20.24	144.15	29.85	26.41	826	31		
			17:20:54	41.19	20.23	141.45	5.21	4.30	826	192		
			17:20:55	41.22	20.23	145.93	24.05	21.20	826	39		
			17:20:56	41.25	20.23	138.32	10.51	9.05	826	91		
			17:20:57	41.16	20.19	133.70	38.60	34.25	826	24		

**TABLE D-17**

Profile PRO-13 on September 21, 2022 (1710-1724 hours PDT) located at North AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
27												
48												
1848												
			17:20:58	41.16	20.21	148.22	43.44	38.60	826	21		
			17:20:59	41.16	20.27	152.88	42.33	37.60	826	22		
			17:21:00	41.23	20.27	151.10	41.23	36.61	826	23		
			17:21:01	41.12	20.26	140.10	35.55	31.52	826	26		
			17:21:02	41.15	20.18	128.70	33.65	29.81	826	28		
			17:21:03	41.11	20.16	127.74	34.93	30.96	826	27		
			17:21:04	41.13	20.18	139.64	37.01	32.82	826	25		
			17:21:05	41.12	20.23	148.01	39.45	35.02	826	24		
			17:21:06	41.16	20.25	142.60	30.73	27.19	826	30		
			17:21:07	41.17	20.23	144.93	38.22	33.91	826	24		
			17:21:08	41.17	20.25	150.02	41.67	37.01	826	22		
			17:21:09	41.23	20.26	144.05	42.91	38.12	826	22		
			17:21:10	41.17	20.22	138.73	19.31	16.95	826	49		
			17:21:11	41.24	20.20	133.88	12.84	11.15	826	74		
			17:21:12	41.16	20.19	135.47	33.11	29.33	826	28		
			17:21:13	41.23	20.21	142.23	39.21	34.80	826	24	31	Measured diffuser port plume at 41 ft
			17:21:14	41.16	20.23	145.09	41.17	36.56	826	23		
			17:21:15	41.17	20.24	145.13	38.15	33.85	826	24		
			17:21:16	41.24	20.24	146.04	41.53	36.88	826	22		
			17:21:17	41.44	20.24	145.71	42.13	37.42	826	22		
			17:21:18	41.50	20.25	147.02	40.12	35.62	826	23		
			17:21:19	41.43	20.24	139.32	34.85	30.89	826	27		
			17:21:20	41.46	20.19	129.72	34.92	30.95	826	27		
			17:21:21	41.41	20.17	132.60	18.37	16.10	826	51		
			17:21:22	41.30	20.19	137.36	28.22	24.94	826	33		
			17:21:23	41.33	20.20	139.25	30.14	26.66	826	31		
			17:21:24	41.32	20.22	140.05	35.82	31.76	826	26		
			17:21:25	41.35	20.20	133.20	33.92	30.06	826	27		
			17:21:26	41.34	20.16	127.60	6.73	5.66	826	146		
			17:21:27	41.47	20.14	125.22	1.13	0.63	826	1304		
			17:21:28	41.53	20.14	129.08	1.04	0.55	826	1493		
			17:21:29	41.47	20.18	136.04	2.12	1.53	826	541		
			17:21:30	41.47	20.19	134.98	2.37	1.75	826	472		
			17:21:31	41.54	20.20	137.81	25.60	22.59	826	37		
			17:21:32	41.47	20.22	142.04	38.36	34.04	826	24		
			17:21:33	41.41	20.23	144.60	38.56	34.22	826	24		
			17:21:34	41.27	20.24	144.88	39.33	34.91	826	24		
			17:21:35	41.15	20.24	144.46	34.21	30.32	826	27	27	Measured diffuser port plume at 41 ft

**TABLE D-17**

Profile PRO-13 on September 21, 2022 (1710-1724 hours PDT) located at North AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

19	Instantaneous Minimum Dilution in Profile
27	Minimum Average Dilution in Profile
48	Plume Average Dilution Detected
1848	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:21:36	41.12	20.24	146.95	35.48	31.46	826	26		
			17:21:37	41.17	20.25	145.37	35.48	31.46	826	26		
			17:21:38	41.16	20.24	145.45	39.77	35.30	826	23		
			17:21:39	41.20	20.24	142.80	34.67	30.73	826	27		
			17:21:40	41.23	20.22	137.58	26.60	23.49	826	35		
			17:21:41	41.25	20.18	129.51	7.37	6.24	826	132		
			17:21:42	41.28	20.16	126.35	9.57	8.21	826	101		
			17:21:43	41.25	20.15	125.36	10.07	8.66	826	95		
			17:21:44	41.25	20.16	131.43	9.59	8.23	826	100		
			17:21:45	41.27	20.19	136.84	24.96	22.01	826	38		
			17:21:46	41.31	20.22	143.78	35.48	31.46	826	26		
			17:21:47	41.29	20.24	145.71	43.55	38.69	826	21		
			17:21:48	41.22	20.24	145.00	41.10	36.50	826	23		
			17:21:49	41.19	20.24	146.62	39.77	35.30	826	23		
			17:21:50	41.15	20.26	148.42	41.22	36.60	826	23		
			17:21:51	41.18	20.26	148.79	42.69	37.92	826	22	39	Measured diffuser port plume at 41 ft
			17:21:52	41.14	20.26	147.71	40.64	36.08	826	23		
			17:21:53	41.17	20.24	141.07	33.95	30.08	826	27		
			17:21:54	41.17	20.21	139.80	18.79	16.48	826	50		
			17:21:55	41.13	20.23	145.67	16.16	14.12	826	58		
			17:21:56	41.16	20.26	149.04	46.12	41.00	826	20		
			17:21:57	41.15	20.26	148.83	40.11	35.61	826	23		
			17:21:58	41.12	20.26	148.30	39.32	34.90	826	24		
			17:21:59	41.05	20.25	144.36	43.52	38.67	826	21		
			17:22:00	41.12	20.23	143.35	46.23	41.10	826	20		
			17:22:01	41.22	20.24	146.43	39.45	35.02	826	24		
			17:22:02	41.06	20.27	153.73	35.48	31.46	826	26		
			17:22:03	41.22	20.28	153.15	43.55	38.69	826	21		
			17:22:04	41.16	20.28	152.12	41.10	36.50	826	23		
			17:22:05	41.19	20.27	148.97	43.34	38.51	826	21		
			17:22:06	41.22	20.25	147.05	48.14	42.81	826	19		
			17:22:07	41.25	20.25	144.81	40.11	35.61	826	23		
			17:22:08	41.22	20.23	143.91	43.34	38.51	826	21		
			17:22:09	41.22	20.24	145.87	27.04	23.88	826	35		
			17:22:10	41.22	20.22	139.07	7.70	6.53	826	127		
			17:22:11	41.20	20.21	141.03	9.92	8.52	826	97		
			17:22:12	41.21	20.23	146.08	21.87	19.24	826	43		
			17:22:13	41.20	20.25	147.36	35.48	31.46	826	26		

**TABLE D-17**

Profile PRO-13 on September 21, 2022 (1710-1724 hours PDT) located at North AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>19</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>27</b>	<b>Minimum Average Dilution in Profile</b>
<b>48</b>	<b>Plume Average Dilution Detected</b>
<b>1848</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:22:14	41.15	20.25	145.57	43.55	38.69	826	21		
			17:22:15	41.23	20.24	145.99	41.10	36.50	826	23		
			17:22:16	41.30	20.24	139.74	43.34	38.51	826	21		
			17:22:17	41.27	20.19	134.23	34.56	30.63	826	27		
			17:22:18	41.25	20.17	128.67	38.50	34.16	826	24		
			17:22:19	41.25	20.16	127.68	31.36	27.75	826	30		
			17:22:20	41.19	20.16	129.45	20.73	18.22	826	45		
			17:22:21	41.30	20.17	135.16	37.87	33.60	826	25		
			17:22:22	41.24	20.20	140.21	49.33	43.88	826	19		
			17:22:23	41.27	20.23	144.86	35.48	31.46	826	26		
			17:22:24	41.41	20.23	139.57	43.55	38.69	826	21		
			17:22:25	41.40	20.19	129.94	30.20	26.72	826	31		
			17:22:26	41.42	20.16	128.07	8.30	7.07	826	117		
			17:22:27	41.40	20.15	125.81	2.18	1.58	826	522		
			17:22:28	41.41	20.14	125.22	1.28	0.77	826	1070		
			17:22:29	41.40	20.14	124.78	0.96	0.48	826	1708		
			17:22:30	41.42	20.15	130.47	1.24	0.73	826	1127		
			17:22:31	41.40	20.17	129.22	23.48	20.69	826	40		
			17:22:32	41.39	20.17	137.26	18.47	16.20	826	51		
			17:22:33	41.25	20.23	145.43	35.41	31.39	826	26	34	Measured diffuser port plume at 41 ft
			17:22:34	41.16	20.24	143.06	35.48	31.46	826	26		
			17:22:35	41.20	20.22	136.61	43.55	38.69	826	21		
			17:22:36	41.22	20.18	129.13	23.48	20.69	826	40		
			17:22:37	41.14	20.16	126.52	2.19	1.59	826	520		
			17:22:38	41.18	20.15	125.49	1.03	0.55	826	1512		
			17:22:39	41.20	20.14	124.94	1.18	0.68	826	1216		
			17:22:40	41.14	20.14	124.65	2.20	1.59	826	519		
			17:22:41	41.09	20.14	124.55	3.07	2.38	826	347		
			17:22:42	41.13	20.14	124.42	1.32	0.80	826	1028		
			17:22:43	41.15	20.14	124.40	0.78	0.32	826	2544		
			17:22:44	41.17	20.14	124.44	0.37	0.37	826	2259		
			17:22:45	41.09	20.14	124.44	0.34	0.34	826	2438		
			17:22:46	41.09	20.14	124.42	1.09	0.60	826	1384		
			17:22:47	41.12	20.14	124.46	0.76	0.30	826	2752		
			17:22:48	41.10	20.14	124.49	0.35	0.35	826	2387		
			17:22:49	41.11	20.14	124.46	0.45	0.02	826	33547		
			17:22:50	41.12	20.14	124.53	0.46	0.03	826	27611		
			17:22:51	41.15	20.14	124.55	0.51	0.08	826	10700		

**TABLE D-17**

Profile PRO-13 on September 21, 2022 (1710-1724 hours PDT) located at North AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>19</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>27</b>	<b>Minimum Average Dilution in Profile</b>
<b>48</b>	<b>Plume Average Dilution Detected</b>
<b>1848</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:22:52	41.14	20.14	124.59	0.37	0.37	826	2209		
			17:22:53	41.27	20.14	124.61	0.33	0.33	826	2528		
			17:22:54	41.65	20.14	124.51	0.40	0.40	826	2074		
			17:22:55	42.31	20.14	129.41	0.61	0.17	826	4883		
			17:22:56	44.93	20.16	125.06	0.81	0.35	826	2380		
			17:22:57	46.54	20.14	124.38	0.80	0.34	826	2446		
			17:22:58	46.92	20.14	124.32	0.65	0.20	826	4060		
			17:22:59	46.96	20.14	124.40	0.47	0.04	826	19866		
			17:23:00	47.09	20.14	124.46	0.89	0.42	826	1952		
			17:23:01	47.05	20.14	124.59	1.58	1.04	826	798		
			17:23:02	47.00	20.14	124.52	1.18	0.68	826	1211		
			17:23:03	47.04	20.14	124.49	1.43	0.91	826	910		
			17:23:04	46.91	20.14	124.46	0.91	0.43	826	1901		
			17:23:05	46.96	20.14	124.40	0.68	0.23	826	3550		
			17:23:06	46.92	20.14	124.42	0.45	0.02	826	34297		
			17:23:07	46.91	20.14	124.53	0.99	0.51	826	1629		
			17:23:08	46.90	20.14	124.59	1.01	0.52	826	1578		
			17:23:09	46.84	20.14	124.63	1.48	0.95	826	870		
			17:23:10	46.94	20.14	124.68	0.93	0.46	826	1811		
			17:23:11	46.91	20.14	124.76	0.84	0.38	826	2184		
			17:23:12	46.92	20.14	124.65	1.08	0.59	826	1406		
			17:23:13	47.00	20.14	124.61	0.95	0.47	826	1750		
			17:23:14	46.97	20.14	124.57	0.95	0.48	826	1734		
			17:23:15	46.94	20.14	124.61	0.87	0.40	826	2047		
			17:23:16	46.78	20.14	124.57	1.07	0.58	826	1422		
			17:23:17	46.86	20.14	124.61	0.84	0.37	826	2226		
			17:23:18	46.76	20.14	124.63	0.65	0.20	826	4084		
			17:23:19	46.80	20.14	124.70	0.80	0.34	826	2405		
			17:23:20	46.78	20.14	124.72	0.94	0.46	826	1781		
			17:23:21	46.81	20.14	124.70	0.94	0.47	826	1761		
			17:23:22	46.78	20.14	126.66	1.35	0.84	826	989		
			17:23:23	46.77	20.15	127.36	3.73	2.97	826	278		
			17:23:24	46.80	20.15	125.78	1.91	1.34	826	619		
			17:23:25	46.80	20.14	125.41	1.34	0.82	826	1006		
			17:23:26	46.81	20.14	125.04	2.16	1.56	826	530		
			17:23:27	46.79	20.14	124.78	1.25	0.75	826	1108		
			17:23:28	46.84	20.14	124.57	1.00	0.52	826	1598		
			17:23:29	46.79	20.14	124.51	0.85	0.39	826	2145		



**TABLE D-17**

Profile PRO-13 on September 21, 2022 (1710-1724 hours PDT) located at North AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

19	Instantaneous Minimum Dilution in Profile
27	Minimum Average Dilution in Profile
48	Plume Average Dilution Detected
1848	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:23:30	46.83	20.14	124.51	0.50	0.07	826	11360		Measured diffuser port plume at 46 ft
			17:23:31	46.84	20.14	124.44	0.48	0.05	826	16139		
			17:23:32	46.81	20.14	124.44	0.82	0.36	826	2292		
			17:23:33	46.81	20.14	124.44	1.16	0.66	826	1247		
			17:23:34	46.86	20.14	125.06	5.73	4.76	826	173		
			17:23:35	46.81	20.15	128.33	14.77	12.87	826	64		
			17:23:36	46.83	20.15	127.86	15.29	13.34	826	62		
			17:23:37	46.81	20.15	127.26	13.53	11.76	826	70	110	
			17:23:38	46.80	20.15	126.15	11.13	9.61	826	86		
			17:23:39	46.77	20.14	125.61	4.99	4.10	826	202		
			17:23:40	46.79	20.14	125.10	1.76	1.20	826	688		
			17:23:41	46.79	20.14	124.89	0.96	0.48	826	1720		
			17:23:42	46.82	20.14	124.72	0.78	0.32	826	2603		
			17:23:43	46.81	20.14	124.57	0.86	0.39	826	2095		
			17:23:44	46.82	20.14	124.57	0.77	0.32	826	2615		
			17:23:45	46.79	20.14	124.57	0.84	0.37	826	2216		
			17:23:46	46.79	20.14	124.53	0.89	0.42	826	1984		
			17:23:47	46.81	20.14	124.44	0.20	0.20	826	4216		
			17:23:48	46.77	20.14	124.49	0.88	0.41	826	2003		
			17:23:49	46.80	20.14	124.51	0.55	0.12	826	6978		
			17:23:50	46.81	20.14	124.44	0.63	0.19	826	4417		
			17:23:51	46.79	20.14	125.85	6.37	5.34	826	155		
			17:23:52	46.76	20.15	130.18	21.21	18.65	826	44		
			17:23:53	46.74	20.17	132.54	20.89	18.37	826	45		
			17:23:54	46.82	20.17	132.01	28.03	24.77	826	33		
			17:23:55	46.81	20.17	130.44	34.98	31.01	826	27		
			17:23:56	46.79	20.16	128.07	16.19	14.15	826	58		
			17:23:57	46.77	20.15	126.36	14.61	12.73	826	65		
			17:23:58	46.79	20.15	128.36	25.83	22.79	826	36		
			17:23:59	46.79	20.15	127.80	22.18	19.52	826	42	47	
			17:24:00	46.78	20.15	128.25	17.62	15.43	826	54		
			17:24:01	46.81	20.16	131.18	24.17	21.31	826	39		
			17:24:02	46.80	20.16	130.41	21.68	19.08	826	43		
			17:24:03	46.80	20.16	128.29	15.70	13.71	826	60		
			17:24:04	46.77	20.15	129.08	27.55	24.34	826	34		
			17:24:05	46.81	20.15	128.12	24.75	21.83	826	38		
			17:24:06	46.78	20.15	126.72	11.58	10.01	826	83		
			17:24:07	46.82	20.14	125.85	4.78	3.91	826	211		

**TABLE D-17**

Profile PRO-13 on September 21, 2022 (1710-1724 hours PDT) located at North AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:24:08	46.78	20.14	125.42	2.42	1.79	826	460		Measured diffuser port plume at 46 ft
			17:24:09	46.79	20.14	125.06	1.75	1.19	826	694		
			17:24:10	46.78	20.14	124.57	2.36	1.74	826	476		
			17:24:11	46.78	20.13	124.63	10.48	9.02	826	92		
			17:24:12	46.78	20.14	125.12	13.01	11.29	826	73		
			17:24:13	46.77	20.14	125.01	5.66	4.70	826	176		
			17:24:14	46.81	20.14	125.06	14.15	12.32	826	67		
			17:24:15	46.81	20.14	127.85	23.68	20.87	826	40		
			17:24:16	46.80	20.16	129.59	26.95	23.80	826	35		
			17:24:17	46.78	20.15	127.91	21.93	19.29	826	43		
			17:24:18	46.78	20.15	126.81	15.28	13.33	826	62	39	
			17:24:19	46.82	20.14	128.03	27.27	24.09	826	34		
			17:24:20	46.81	20.16	131.97	41.52	36.87	826	22		
			17:24:21	46.80	20.18	136.03	46.89	41.69	826	20		
			17:24:22	46.79	20.19	136.50	38.71	34.35	826	24		
			17:24:23	46.81	20.18	131.85	23.45	20.66	826	40		
			17:24:24	46.78	20.16	128.20	9.08	7.77	826	106		
			17:24:25	46.80	20.15	125.87	4.21	3.40	826	243		
			17:24:26	46.80	20.14	125.66	9.16	7.84	826	105		
			17:24:27	46.79	20.14	126.47	8.68	7.41	826	112		
			17:24:28	46.78	20.14	127.03	5.00	4.11	826	201		
			17:24:29	46.82	20.14	125.89	11.66	10.09	826	82		
			17:24:30	46.77	20.14	125.18	14.00	12.18	826	68		
			17:24:31	46.83	20.14	124.70	6.68	5.61	826	147		
			17:24:32	46.78	20.14	124.59	4.45	3.62	826	228		
			17:24:33	46.77	20.14	124.40	7.44	6.30	826	131		
			17:24:34	46.77	20.14	125.95	13.38	11.63	826	71		
			17:24:35	46.78	20.15	126.53	13.55	11.78	826	70		
			17:24:36	46.73	20.14	126.87	20.93	18.40	826	45	58	
			17:24:37	46.82	20.15	129.34	20.82	18.30	826	45		
			17:24:38	46.75	20.16	127.70	15.65	13.66	826	60		
			17:24:39	46.77	20.15	126.36	6.64	5.58	826	148		
			17:24:40	46.78	20.14	125.34	7.14	6.03	826	137		
			17:24:41	46.80	20.14	124.94	2.61	1.96	826	422		
			17:24:42	46.78	20.14	124.63	1.29	0.78	826	1061		

19	Instantaneous Minimum Dilution in Profile
27	Minimum Average Dilution in Profile
48	Plume Average Dilution Detected
1848	Profile Average Dilution

**TABLE D-18**

Profile PRO-14 on September 21, 2022 (1731-1740 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

1383	Instantaneous Minimum Dilution in Profile
3092	Minimum Average Dilution in Profile
4903	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-14 (South Acute Zone Boundary - 24 ft from Diffuser) Measure Background Plume	49 ft	0.28 m/sec 348 deg. (mag.) Early Ebb Tide	17:31:35	2.49	20.29	124.27	0.90	0.43	812	1910	3668	Possible trace plume near surface
			17:31:36	2.36	20.29	124.09	0.86	0.39	812	2076		
			17:31:37	2.46	20.26	123.82	0.65	0.21	812	3887		
			17:31:38	2.48	20.18	123.69	0.61	0.17	812	4836		
			17:31:39	2.49	20.18	123.60	0.92	0.45	812	1815		
			17:31:40	2.44	20.23	123.98	0.88	0.41	812	1990		
			17:31:41	2.48	20.26	123.90	0.54	0.11	812	7533		
			17:31:42	2.47	20.28	124.09	0.64	0.20	812	4162		
			17:31:43	2.53	20.28	123.98	0.61	0.17	812	4803		
			17:31:44	2.47	20.28	124.03	0.43	0.01	812	96864		
			17:31:45	2.54	20.28	123.94	0.80	0.34	812	2368		
			17:31:46	2.49	20.28	124.07	0.52	0.09	812	9166		
			17:31:47	2.51	20.28	123.96	0.63	0.19	812	4382		
			17:31:48	2.45	20.28	124.11	0.55	0.11	812	7180		
			17:31:49	2.55	20.28	123.84	0.47	0.04	812	20929		
			17:31:50	2.44	20.24	124.01	0.50	0.07	812	11656		
			17:31:51	2.54	20.26	123.86	0.50	0.07	812	11251		
			17:31:52	2.47	20.28	123.88	0.51	0.08	812	10807		
			17:31:53	2.50	20.28	123.94	0.66	0.22	812	3736		
			17:31:54	2.51	20.28	124.08	0.73	0.27	812	2956		
			17:31:55	2.56	20.29	124.01	0.51	0.08	812	10410		
			17:31:56	2.52	20.29	124.09	0.52	0.09	812	9231		
			17:31:57	2.57	20.29	124.07	0.40	0.40	812	2011		
			17:31:58	2.54	20.29	124.05	0.50	0.07	812	11167		
			17:31:59	2.54	20.29	124.01	0.33	0.33	812	2482		
			17:32:00	2.54	20.26	123.69	0.44	0.02	812	39275		
			17:32:01	2.52	20.18	123.67	0.68	0.23	812	3499		
			17:32:02	2.49	20.11	123.67	0.53	0.10	812	8384		
			17:32:03	2.51	20.08	123.77	0.38	0.38	812	2157		
			17:32:04	2.54	20.07	123.77	0.57	0.13	812	6301		
17:32:05	2.56	20.07	123.86	0.45	0.03	812	30024					
17:32:06	2.54	20.09	123.92	0.39	0.39	812	2106					
17:32:07	2.54	20.12	124.11	0.41	0.41	812	1981					
17:32:08	2.58	20.15	124.18	0.48	0.05	812	16532					
17:32:09	2.52	20.18	124.22	0.49	0.06	812	13439					
17:32:10	2.54	20.21	124.27	0.34	0.34	812	2389					
17:32:11	2.52	20.24	124.32	0.39	0.39	812	2092					
17:32:12	2.49	20.26	124.36	0.20	0.20	812	3976					
17:32:13	2.53	20.27	124.42	0.16	0.16	812	5229					
										3421	Possible trace plume near surface	

**TABLE D-18**

Profile PRO-14 on September 21, 2022 (1731-1740 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

1383	Instantaneous Minimum Dilution in Profile
3092	Minimum Average Dilution in Profile
4903	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:32:14	2.53	20.27	124.46	0.53	0.10	812	8187		Possible trace plume near surface
			17:32:15	2.51	20.27	124.51	0.16	0.16	812	5215		
			17:32:16	2.53	20.27	124.49	0.23	0.23	812	3554		
			17:32:17	2.57	20.28	124.44	0.33	0.33	812	2457	3092	
			17:32:18	2.54	20.28	124.49	0.34	0.34	812	2383		
			17:32:19	2.60	20.28	124.53	0.20	0.20	812	3975		
			17:32:20	2.50	20.30	124.57	0.14	0.14	812	5808		
			17:32:21	2.48	20.30	124.57	0.05	0.05	812	16639		
			17:32:22	2.43	20.31	124.55	0.02	0.02	812	42963		
			17:32:23	2.50	20.31	124.58	0.06	0.06	812	14397		
			17:32:24	2.47	20.30	124.57	0.07	0.07	812	11924		
			17:32:25	2.51	20.30	124.53	0.07	0.07	812	11633		
			17:32:26	2.46	20.30	124.53	0.03	0.03	812	24311		
			17:32:27	2.47	20.30	124.59	0.08	0.08	812	9902		
			17:32:28	2.38	20.30	124.59	0.07	0.07	812	11734		
			17:32:29	2.44	20.30	124.61	0.05	0.05	812	14818		
			17:32:30	2.48	20.30	124.55	0.03	0.03	812	24024		
			17:32:31	2.45	20.29	124.55	0.31	0.31	812	2582		
			17:32:32	2.46	20.29	124.55	0.28	0.28	812	2944		
			17:32:33	2.48	20.29	124.58	0.13	0.13	812	6480		
			17:32:34	2.44	20.29	124.55	0.02	0.02	812	47209		
			17:32:35	2.41	20.30	124.57	0.02	0.02	812	43892		
			17:32:36	2.40	20.30	124.63	0.02	0.02	812	44862		
			17:32:37	2.47	20.30	124.61	0.02	0.02	812	42073		
			17:32:38	2.45	20.30	124.57	0.21	0.21	812	3919		
			17:32:39	2.43	20.30	124.61	0.07	0.07	812	11169		
			17:32:40	2.43	20.30	124.57	0.02	0.02	812	46667		
			17:32:41	2.50	20.30	124.61	0.21	0.21	812	3934		
			17:32:42	2.48	20.30	124.57	0.03	0.03	812	24167		
			17:32:43	2.47	20.30	124.56	0.02	0.02	812	43892		
			17:32:44	2.48	20.31	124.59	0.11	0.11	812	7289		
			17:32:45	2.50	20.30	124.59	0.15	0.15	812	5367		
			17:32:46	2.49	20.30	124.55	0.04	0.04	812	22308		
			17:32:47	2.52	20.30	124.55	0.06	0.06	812	13556		
			17:32:48	2.50	20.29	124.55	0.02	0.02	812	33833		
			17:32:49	2.49	20.29	124.55	0.03	0.03	812	25062		
			17:32:50	2.45	20.29	124.57	0.17	0.17	812	4729		
			17:32:51	2.42	20.29	124.53	0.07	0.07	812	10856		
			17:32:52	2.41	20.30	124.56	0.02	0.02	812	42513		

**TABLE D-18**

Profile PRO-14 on September 21, 2022 (1731-1740 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

1383	Instantaneous Minimum Dilution in Profile
3092	Minimum Average Dilution in Profile
4903	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:32:53	2.33	20.30	124.57	0.02	0.02	812	42513		
			17:32:54	2.35	20.31	124.59	0.05	0.05	812	15206		
			17:32:55	2.27	20.31	124.61	0.03	0.03	812	27619		
			17:32:56	2.28	20.31	124.57	0.02	0.02	812	43191		
			17:32:57	2.29	20.31	124.59	0.02	0.02	812	43892		
			17:32:58	2.30	20.31	124.61	0.04	0.04	812	22873		
			17:32:59	2.34	20.30	124.55	0.02	0.02	812	40804		
			17:33:00	2.35	20.30	124.53	0.02	0.02	812	47765		
			17:33:01	2.31	20.30	124.53	0.11	0.11	812	7355		
			17:33:02	2.29	20.30	124.58	0.02	0.02	812	46400		
			17:33:03	2.32	20.30	124.53	0.02	0.02	812	44862		
			17:33:04	2.29	20.30	124.57	0.02	0.02	812	42963		
			17:33:05	2.41	20.30	124.55	0.02	0.02	812	43422		
			17:33:06	2.39	20.30	124.57	0.02	0.02	812	42963		
			17:33:07	2.38	20.30	124.57	0.02	0.02	812	44372		
			17:33:08	2.36	20.30	124.57	0.02	0.02	812	44372		
			17:33:09	2.42	20.30	124.57	0.02	0.02	812	39038		
			17:33:10	2.33	20.30	124.53	0.02	0.02	812	33833		
			17:33:11	2.55	20.30	124.56	0.11	0.11	812	7443		
			17:33:12	2.43	20.30	124.55	0.09	0.09	812	8778		
			17:33:13	2.50	20.30	124.57	0.02	0.02	812	34407		
			17:33:14	2.54	20.30	124.53	0.02	0.02	812	47485		
			17:33:15	2.63	20.30	124.53	0.06	0.06	812	14196		
			17:33:16	3.31	20.30	124.55	0.07	0.07	812	12083		
			17:33:17	6.50	20.28	124.59	0.17	0.17	812	4683		
			17:33:18	7.53	20.25	124.51	0.06	0.06	812	13182		
			17:33:19	7.67	20.25	124.55	0.32	0.32	812	2535		
			17:33:20	7.70	20.25	124.63	0.11	0.11	812	7211		
			17:33:21	7.81	20.25	124.51	0.04	0.04	812	23134		
			17:33:22	7.71	20.24	124.53	0.02	0.02	812	41641		
			17:33:23	7.82	20.24	124.55	0.12	0.12	812	7024		
			17:33:24	7.69	20.25	124.53	0.05	0.05	812	16305		
			17:33:25	7.69	20.24	124.53	0.07	0.07	812	11633		
			17:33:26	7.74	20.24	124.61	0.09	0.09	812	8694		
			17:33:27	7.76	20.24	124.59	0.33	0.33	812	2485		
			17:33:28	7.69	20.24	124.55	0.07	0.07	812	11063		
			17:33:29	7.64	20.24	124.59	0.09	0.09	812	8904		
			17:33:30	7.70	20.24	124.57	0.05	0.05	812	15379		
			17:33:31	7.71	20.24	124.55	0.13	0.13	812	6142		

**TABLE D-18**

Profile PRO-14 on September 21, 2022 (1731-1740 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

1383	Instantaneous Minimum Dilution in Profile
3092	Minimum Average Dilution in Profile
4903	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:33:32	7.65	20.24	124.53	0.18	0.18	812	4519		
			17:33:33	7.72	20.25	124.57	0.02	0.02	812	43422		
			17:33:34	7.72	20.24	124.53	0.03	0.03	812	24756		
			17:33:35	7.78	20.23	124.49	0.02	0.02	812	44862		
			17:33:36	7.78	20.23	124.51	0.25	0.25	812	3285		
			17:33:37	7.77	20.22	124.49	0.07	0.07	812	11437		
			17:33:38	7.76	20.22	124.49	0.02	0.02	812	45363		
			17:33:39	7.80	20.22	124.55	0.02	0.02	812	48333		
			17:33:40	7.79	20.22	124.54	0.08	0.08	812	10188		
			17:33:41	7.77	20.22	124.57	0.08	0.08	812	10518		
			17:33:42	7.91	20.21	124.61	0.19	0.19	812	4294		
			17:33:43	7.83	20.21	124.57	0.05	0.05	812	15093		
			17:33:44	8.04	20.21	124.57	0.09	0.09	812	9420		
			17:33:45	7.95	20.21	124.61	0.14	0.14	812	5767		
			17:33:46	8.02	20.21	124.57	0.16	0.16	812	5222	6218	Possible trace plume at 8 ft
			17:33:47	7.79	20.21	124.61	0.18	0.18	812	4464		
			17:33:48	7.69	20.21	124.57	0.08	0.08	812	10163		
			17:33:49	7.66	20.21	124.57	0.02	0.02	812	50123		
			17:33:50	7.72	20.21	124.58	0.01	0.01	812	54497		
			17:33:51	7.68	20.22	124.55	0.06	0.06	812	13377		
			17:33:52	7.69	20.22	124.57	0.11	0.11	812	7086		
			17:33:53	7.70	20.22	124.59	0.22	0.22	812	3754		
			17:33:54	7.71	20.23	124.61	0.02	0.02	812	43892		
			17:33:55	7.72	20.23	124.61	0.02	0.02	812	41218		
			17:33:56	7.73	20.23	124.59	0.02	0.02	812	45363		
			17:33:57	7.74	20.23	124.63	0.29	0.29	812	2836		
			17:33:58	7.78	20.23	124.63	0.02	0.02	812	47765		
			17:33:59	7.67	20.24	124.61	0.10	0.10	812	8064		
			17:34:00	7.94	20.24	124.59	0.04	0.04	812	19426		
			17:34:01	7.91	20.23	124.57	0.05	0.05	812	17807		
			17:34:02	8.28	20.23	124.63	0.12	0.12	812	6570		
			17:34:03	8.39	20.23	124.59	0.24	0.24	812	3439		
			17:34:04	8.64	20.23	124.59	0.36	0.36	812	2279	3628	Possible trace plume at 8 ft
			17:34:05	10.72	20.22	124.61	0.37	0.37	812	2223		
			17:34:06	13.17	20.23	124.59	0.02	0.02	812	33833		
			17:34:07	13.30	20.23	124.53	0.59	0.15	812	5412		
			17:34:08	13.48	20.23	124.61	0.02	0.02	812	45111		
			17:34:09	13.41	20.23	124.56	0.17	0.17	812	4842		
			17:34:10	13.44	20.23	124.55	0.13	0.13	812	6389	5811	Possible trace plume at 13 ft

**TABLE D-18**

Profile PRO-14 on September 21, 2022 (1731-1740 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

1383	Instantaneous Minimum Dilution in Profile
3092	Minimum Average Dilution in Profile
4903	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:34:11	13.41	20.23	124.55	0.13	0.13	812	6203		
			17:34:12	13.38	20.23	124.55	0.02	0.02	812	47209		
			17:34:13	13.28	20.23	124.57	0.02	0.02	812	46400		
			17:34:14	13.22	20.24	124.57	0.02	0.02	812	34407		
			17:34:15	13.17	20.24	124.61	0.09	0.09	812	8874		
			17:34:16	13.19	20.25	124.59	0.13	0.13	812	6124		
			17:34:17	13.13	20.25	124.57	0.04	0.04	812	18497		
			17:34:18	13.11	20.25	124.57	0.30	0.30	812	2713		
			17:34:19	13.06	20.25	124.56	0.02	0.02	812	45363		
			17:34:20	13.10	20.26	124.49	0.05	0.05	812	17652		
			17:34:21	13.16	20.26	124.53	0.16	0.16	812	5162		
			17:34:22	13.20	20.26	124.51	0.13	0.13	812	6414		
			17:34:23	13.21	20.26	124.53	0.02	0.02	812	43422		
			17:34:24	13.21	20.26	124.57	0.05	0.05	812	14926		
			17:34:25	13.28	20.26	124.57	0.02	0.02	812	41641		
			17:34:26	13.33	20.25	124.57	0.02	0.02	812	45111		
			17:34:27	13.31	20.24	124.57	0.02	0.02	812	42073		
			17:34:28	13.32	20.24	124.54	0.04	0.04	812	22493		
			17:34:29	13.29	20.23	124.55	0.05	0.05	812	17965		
			17:34:30	13.30	20.24	124.51	0.10	0.10	812	8153		
			17:34:31	13.29	20.25	124.59	0.09	0.09	812	9333	8310	Possible trace plume at 13 ft
			17:34:32	13.24	20.24	124.55	0.11	0.11	812	7443		
			17:34:33	13.32	20.24	124.53	0.02	0.02	812	42073		
			17:34:34	13.25	20.24	124.55	0.11	0.11	812	7668		
			17:34:35	13.35	20.23	124.55	0.02	0.02	812	33554		
			17:34:36	13.26	20.22	124.49	0.02	0.02	812	43422		
			17:34:37	13.37	20.21	124.46	0.02	0.02	812	41856		
			17:34:38	13.31	20.21	124.50	0.02	0.02	812	46936		
			17:34:39	13.32	20.21	124.46	0.02	0.02	812	40804		
			17:34:40	13.34	20.21	124.46	0.02	0.02	812	41856		
			17:34:41	13.35	20.21	124.42	0.02	0.02	812	44862		
			17:34:42	13.32	20.21	124.42	0.02	0.02	812	40198		
			17:34:43	13.32	20.20	124.38	0.02	0.02	812	44862		
			17:34:44	13.29	20.20	124.36	0.02	0.02	812	41218		
			17:34:45	13.29	20.20	124.40	0.02	0.02	812	42073		
			17:34:46	13.33	20.22	124.44	0.03	0.03	812	24606		
			17:34:47	13.43	20.22	124.49	0.02	0.02	812	45363		
			17:34:48	13.40	20.23	124.46	0.06	0.06	812	12787		
			17:34:49	13.45	20.23	124.42	0.03	0.03	812	27248		

**TABLE D-18**

Profile PRO-14 on September 21, 2022 (1731-1740 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

1383	Instantaneous Minimum Dilution in Profile
3092	Minimum Average Dilution in Profile
4903	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:34:50	13.47	20.23	124.49	0.18	0.18	812	4632		
			17:34:51	13.68	20.23	124.46	0.05	0.05	812	15321		
			17:34:52	14.38	20.24	124.53	0.08	0.08	812	9878		
			17:34:53	17.16	20.22	124.29	0.02	0.02	812	34701		
			17:34:54	18.44	20.18	124.20	0.02	0.02	812	44862		
			17:34:55	18.73	20.18	124.20	0.02	0.02	812	46400		
			17:34:56	18.83	20.19	124.42	0.02	0.02	812	50750		
			17:34:57	18.88	20.22	124.44	0.02	0.02	812	43892		
			17:34:58	18.93	20.22	124.44	0.02	0.02	812	39417		
			17:34:59	18.95	20.22	124.40	0.05	0.05	812	17652		
			17:35:00	18.91	20.22	124.42	0.02	0.02	812	46400		
			17:35:01	18.91	20.21	124.36	0.06	0.06	812	12828		
			17:35:02	18.87	20.21	124.44	0.02	0.02	812	45363		
			17:35:03	18.88	20.21	124.40	0.13	0.13	812	6170		
			17:35:04	18.86	20.21	124.36	0.14	0.14	812	5808		
			17:35:05	18.90	20.20	124.42	0.02	0.02	812	44372		
			17:35:06	18.90	20.19	124.44	0.05	0.05	812	17965		
			17:35:07	18.92	20.19	124.42	0.02	0.02	812	43892		
			17:35:08	18.91	20.20	124.40	0.02	0.02	812	47485		
			17:35:09	18.93	20.19	124.38	0.02	0.02	812	42963		
			17:35:10	18.92	20.18	124.34	0.11	0.11	812	7575		
			17:35:11	18.90	20.18	124.34	0.02	0.02	812	46667		
			17:35:12	18.90	20.18	124.40	0.02	0.02	812	47485		
			17:35:13	18.87	20.18	124.34	0.12	0.12	812	6824		
			17:35:14	18.86	20.18	124.38	0.17	0.17	812	4735		
			17:35:15	18.89	20.18	124.37	0.02	0.02	812	43892		
			17:35:16	18.88	20.19	124.38	0.02	0.02	812	40600		
			17:35:17	18.89	20.20	124.42	0.10	0.10	812	7808		
			17:35:18	18.88	20.22	124.49	0.47	0.05	812	17525		
			17:35:19	18.88	20.23	124.49	0.09	0.09	812	9083		
			17:35:20	18.90	20.24	124.53	0.04	0.04	812	20402		
			17:35:21	18.91	20.24	124.61	0.07	0.07	812	12065		
			17:35:22	18.88	20.24	124.55	0.23	0.23	812	3547		
			17:35:23	18.88	20.24	124.59	0.02	0.02	812	46136		
			17:35:24	18.88	20.24	124.59	0.20	0.20	812	4046		
			17:35:25	18.88	20.24	124.61	0.17	0.17	812	4705	3919	Possible trace plume at 19 ft
			17:35:26	18.93	20.23	124.49	0.27	0.27	812	3006		
			17:35:27	18.92	20.21	124.38	0.03	0.03	812	28392		
			17:35:28	18.87	20.20	124.32	0.03	0.03	812	24908		



**TABLE D-18**

Profile PRO-14 on September 21, 2022 (1731-1740 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

1383	Instantaneous Minimum Dilution in Profile
3092	Minimum Average Dilution in Profile
4903	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:35:29	18.88	20.20	124.34	0.25	0.25	812	3272		Possible trace plume at 19 ft
			17:35:30	18.88	20.22	124.55	0.03	0.03	812	25062		
			17:35:31	18.93	20.23	124.55	0.20	0.20	812	4093		
			17:35:32	18.87	20.23	124.46	0.18	0.18	812	4557	5417	
			17:35:33	18.87	20.21	124.42	0.11	0.11	812	7603		
			17:35:34	18.92	20.20	124.38	0.07	0.07	812	11785		
			17:35:35	18.94	20.21	124.40	0.02	0.02	812	40600		
			17:35:36	18.91	20.21	124.40	0.12	0.12	812	6911		
			17:35:37	18.92	20.20	124.29	0.04	0.04	812	22873		
			17:35:38	18.89	20.19	124.25	0.02	0.02	812	45618		
			17:35:39	18.92	20.20	124.36	0.02	0.02	812	45363		
			17:35:40	18.88	20.21	124.40	0.03	0.03	812	28194		
			17:35:41	18.88	20.22	124.44	0.15	0.15	812	5535		
			17:35:42	18.90	20.22	124.46	0.51	0.07	812	10833		
			17:35:43	18.89	20.23	124.36	0.23	0.23	812	3467		
			17:35:44	18.91	20.23	124.46	0.09	0.09	812	8817	6122	
			17:35:45	18.93	20.22	124.44	0.13	0.13	812	6082		
			17:35:46	18.86	20.22	124.40	0.02	0.02	812	39038		
			17:35:47	18.87	20.22	124.44	0.02	0.02	812	50750		
			17:35:48	18.88	20.22	124.46	0.02	0.02	812	43892		
			17:35:49	18.94	20.22	124.44	0.02	0.02	812	41641		
			17:35:50	18.89	20.22	124.40	0.09	0.09	812	9217		
			17:35:51	18.88	20.22	124.38	0.02	0.02	812	42073		
			17:35:52	18.78	20.22	124.34	0.02	0.02	812	47765		
			17:35:53	18.82	20.22	124.49	0.02	0.02	812	48916		
			17:35:54	18.86	20.22	124.44	0.18	0.18	812	4430		
			17:35:55	19.15	20.22	124.52	0.06	0.06	812	14372		
			17:35:56	19.31	20.23	124.51	0.02	0.02	812	42292		
			17:35:57	19.39	20.23	124.51	0.38	0.38	812	2114		
			17:35:58	19.47	20.23	124.49	0.06	0.06	812	12889		
			17:35:59	19.51	20.23	124.49	0.03	0.03	812	25778		
			17:36:00	19.50	20.23	124.51	0.19	0.19	812	4326		
			17:36:01	19.70	20.23	124.42	0.34	0.34	812	2358		
			17:36:02	20.05	20.22	124.34	0.02	0.02	812	33833		
			17:36:03	20.36	20.22	124.30	0.05	0.05	812	17167		
			17:36:04	22.93	20.20	124.34	0.04	0.04	812	18330		
			17:36:05	24.50	20.20	124.34	0.18	0.18	812	4519	4519	
			17:36:06	24.69	20.20	124.31	0.06	0.06	812	13739	Possible trace plume at 25 ft	
			17:36:07	24.72	20.20	124.36	0.02	0.02	812	43422		

**TABLE D-18**

Profile PRO-14 on September 21, 2022 (1731-1740 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

1383	Instantaneous Minimum Dilution in Profile
3092	Minimum Average Dilution in Profile
4903	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:36:08	24.76	20.19	124.40	0.02	0.02	812	51069		
			17:36:09	24.74	20.19	124.40	0.05	0.05	812	14982		
			17:36:10	24.78	20.19	124.40	0.11	0.11	812	7231		
			17:36:11	24.76	20.18	124.38	0.02	0.02	812	43422		
			17:36:12	24.69	20.18	124.38	0.08	0.08	812	10012		
			17:36:13	24.74	20.17	124.24	0.02	0.02	812	45363		
			17:36:14	24.70	20.17	124.25	0.02	0.02	812	39804		
			17:36:15	24.72	20.17	124.26	0.15	0.15	812	5543		
			17:36:16	24.73	20.18	124.31	0.03	0.03	812	24606		
			17:36:17	24.71	20.17	124.26	0.02	0.02	812	45363		
			17:36:18	24.71	20.17	124.27	0.06	0.06	812	12668		
			17:36:19	24.73	20.18	124.31	0.03	0.03	812	29000		
			17:36:20	24.72	20.18	124.32	0.02	0.02	812	45363		
			17:36:21	24.71	20.19	124.32	0.02	0.02	812	40600		
			17:36:22	24.68	20.19	124.30	0.09	0.09	812	9217		
			17:36:23	24.73	20.20	124.34	0.06	0.06	812	13952		
			17:36:24	24.72	20.20	124.29	0.07	0.07	812	12192		
			17:36:25	24.70	20.20	124.29	0.02	0.02	812	45618		
			17:36:26	24.71	20.20	124.29	0.02	0.02	812	34701		
			17:36:27	24.68	20.19	124.27	0.02	0.02	812	47209		
			17:36:28	24.71	20.19	124.23	0.02	0.02	812	40600		
			17:36:29	24.71	20.17	124.09	0.02	0.02	812	47485		
			17:36:30	24.76	20.16	124.03	0.02	0.02	812	47765		
			17:36:31	24.78	20.16	124.01	0.02	0.02	812	45876		
			17:36:32	24.76	20.16	124.03	0.02	0.02	812	43422		
			17:36:33	24.80	20.16	124.01	0.02	0.02	812	44862		
			17:36:34	24.71	20.16	124.03	0.02	0.02	812	43892		
			17:36:35	24.71	20.16	124.11	0.13	0.13	812	6161		
			17:36:36	24.72	20.16	124.13	0.02	0.02	812	43422		
			17:36:37	24.72	20.16	124.18	0.02	0.02	812	43892		
			17:36:38	24.75	20.16	124.22	0.02	0.02	812	44372		
			17:36:39	24.75	20.16	124.20	0.02	0.02	812	44372		
			17:36:40	24.72	20.16	124.22	0.02	0.02	812	48333		
			17:36:41	24.74	20.16	124.20	0.02	0.02	812	43422		
			17:36:42	24.73	20.16	124.25	0.11	0.11	812	7167		
			17:36:43	24.73	20.17	124.26	0.02	0.02	812	44862		
			17:36:44	24.71	20.17	124.27	0.02	0.02	812	46400		
			17:36:45	24.73	20.17	124.29	0.02	0.02	812	42963		
			17:36:46	24.72	20.17	124.27	0.07	0.07	812	11231		

**TABLE D-18**

Profile PRO-14 on September 21, 2022 (1731-1740 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>1383</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>3092</b>	<b>Minimum Average Dilution in Profile</b>
<b>4903</b>	<b>Plume Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:36:47	24.71	20.17	124.11	0.02	0.02	812	50123		No plume trace detected at 30 ft
			17:36:48	25.11	20.16	124.18	0.02	0.02	812	45363		
			17:36:49	26.82	20.16	124.03	0.02	0.02	812	45876		
			17:36:50	29.55	20.16	123.92	0.02	0.02	812	44862		
			17:36:51	30.10	20.15	123.86	0.02	0.02	812	43892		
			17:36:52	30.22	20.15	123.86	0.02	0.02	812	43422		
			17:36:53	30.23	20.15	123.89	0.02	0.02	812	42073		
			17:36:54	30.26	20.15	123.82	0.02	0.02	812	46400		
			17:36:55	30.25	20.15	123.79	0.02	0.02	812	43422		
			17:36:56	30.24	20.15	123.79	0.02	0.02	812	45876		
			17:36:57	30.24	20.15	123.79	0.05	0.05	812	17652		
			17:36:58	30.20	20.15	123.79	0.02	0.02	812	42073		
			17:36:59	30.22	20.15	123.77	0.02	0.02	812	47765		
			17:37:00	30.12	20.15	123.77	0.02	0.02	812	44862		
			17:37:01	30.11	20.15	123.86	0.02	0.02	812	45876		
			17:37:02	30.15	20.15	124.01	0.02	0.02	812	44862		
			17:37:03	30.09	20.16	123.99	0.02	0.02	812	44862		
			17:37:04	30.10	20.16	124.01	0.02	0.02	812	46400		
			17:37:05	30.12	20.16	123.94	0.02	0.02	812	47765		
			17:37:06	30.08	20.15	123.86	0.02	0.02	812	45363		
			17:37:07	30.13	20.15	123.86	0.02	0.02	812	44372		
			17:37:08	30.09	20.15	123.88	0.02	0.02	812	44372		
			17:37:09	30.18	20.15	123.90	0.02	0.02	812	41641		
			17:37:10	30.17	20.15	123.96	0.09	0.09	812	9063		
			17:37:11	30.17	20.15	123.92	0.02	0.02	812	46400		
			17:37:12	30.24	20.15	123.90	0.02	0.02	812	45363		
			17:37:13	30.15	20.15	123.89	0.02	0.02	812	42963		
			17:37:14	30.26	20.16	123.90	0.02	0.02	812	42963		
			17:37:15	30.10	20.16	123.92	0.02	0.02	812	50123		
			17:37:16	30.20	20.16	123.92	0.02	0.02	812	41641		
			17:37:17	30.14	20.16	123.96	0.02	0.02	812	47485		
			17:37:18	30.22	20.16	124.01	0.02	0.02	812	48916		
			17:37:19	30.16	20.16	123.99	0.02	0.02	812	44372		
			17:37:20	30.16	20.16	124.01	0.02	0.02	812	34850		
			17:37:21	30.17	20.16	123.99	0.02	0.02	812	47765		
			17:37:22	30.20	20.16	124.06	0.02	0.02	812	48333		
			17:37:23	30.18	20.16	124.07	0.02	0.02	812	43422		
			17:37:24	30.21	20.16	123.94	0.02	0.02	812	41218		
			17:37:25	30.25	20.15	123.86	0.02	0.02	812	45363		

**TABLE D-18**

Profile PRO-14 on September 21, 2022 (1731-1740 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

1383	Instantaneous Minimum Dilution in Profile
3092	Minimum Average Dilution in Profile
4903	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:37:26	30.25	20.15	123.84	0.02	0.02	812	44372		
			17:37:27	30.16	20.15	123.79	0.02	0.02	812	43892		
			17:37:28	30.21	20.15	123.86	0.02	0.02	812	40804		
			17:37:29	30.22	20.16	124.01	0.02	0.02	812	44862		
			17:37:30	30.23	20.16	124.09	0.02	0.02	812	44862		
			17:37:31	30.21	20.16	124.03	0.02	0.02	812	42963		
			17:37:32	30.20	20.16	123.95	0.16	0.16	812	5050		
			17:37:33	30.15	20.16	123.90	0.06	0.06	812	14578		
			17:37:34	30.19	20.16	123.88	0.02	0.02	812	47209		
			17:37:35	30.21	20.16	123.88	0.02	0.02	812	44862		
			17:37:36	30.20	20.16	123.90	0.02	0.02	812	42073		
			17:37:37	30.17	20.16	123.90	0.02	0.02	812	43191		
			17:37:38	30.16	20.16	123.90	0.02	0.02	812	47209		
			17:37:39	30.16	20.16	123.88	0.02	0.02	812	42963		
			17:37:40	30.19	20.15	123.82	0.02	0.02	812	44372		
			17:37:41	30.19	20.15	123.86	0.02	0.02	812	42513		
			17:37:42	30.19	20.15	123.87	0.02	0.02	812	44372		
			17:37:43	30.17	20.15	123.86	0.02	0.02	812	43422		
			17:37:44	30.24	20.15	123.88	0.02	0.02	812	46136		
			17:37:45	30.18	20.15	123.88	0.02	0.02	812	44372		
			17:37:46	30.23	20.15	123.88	0.02	0.02	812	44372		
			17:37:47	30.18	20.16	123.88	0.02	0.02	812	45876		
			17:37:48	30.17	20.16	123.84	0.02	0.02	812	45876		
			17:37:49	30.17	20.16	123.92	0.02	0.02	812	48916		
			17:37:50	30.19	20.16	123.90	0.02	0.02	812	44372		
			17:37:51	30.14	20.16	123.93	0.02	0.02	812	45363		
			17:37:52	30.18	20.16	123.88	0.02	0.02	812	44862		
			17:37:53	30.16	20.16	123.94	0.02	0.02	812	45618		
			17:37:54	30.17	20.16	123.88	0.10	0.10	812	7800		
			17:37:55	30.20	20.16	123.94	0.02	0.02	812	45363		
			17:37:56	30.20	20.15	123.82	0.02	0.02	812	42963		
			17:37:57	30.16	20.15	123.86	0.02	0.02	812	41641		
			17:37:58	30.17	20.15	123.84	0.02	0.02	812	48333		
			17:37:59	30.19	20.15	123.84	0.04	0.04	812	22431		
			17:38:00	30.08	20.15	123.84	0.02	0.02	812	43422		
			17:38:01	30.11	20.15	123.87	0.02	0.02	812	43422		
			17:38:02	30.18	20.15	123.88	0.02	0.02	812	45363		
			17:38:03	30.70	20.16	123.88	0.02	0.02	812	45363		
			17:38:04	33.42	20.16	123.94	0.02	0.02	812	44862		

**TABLE D-18**

Profile PRO-14 on September 21, 2022 (1731-1740 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

1383	Instantaneous Minimum Dilution in Profile
3092	Minimum Average Dilution in Profile
4903	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:38:05	35.65	20.16	123.86	0.02	0.02	812	46667		No plume trace detected at 35 ft
			17:38:06	36.00	20.16	123.90	0.12	0.12	812	7036		
			17:38:07	36.11	20.16	123.92	0.07	0.07	812	11959		
			17:38:08	36.08	20.16	123.96	0.02	0.02	812	44862		
			17:38:09	36.09	20.16	123.94	0.06	0.06	812	14246		
			17:38:10	36.14	20.16	123.96	0.02	0.02	812	44862		
			17:38:11	36.09	20.16	123.89	0.02	0.02	812	41010		
			17:38:12	35.92	20.16	123.88	0.02	0.02	812	44862		
			17:38:13	35.86	20.16	123.90	0.02	0.02	812	45363		
			17:38:14	35.80	20.16	123.88	0.02	0.02	812	45876		
			17:38:15	35.77	20.16	123.90	0.02	0.02	812	45363		
			17:38:16	35.82	20.15	123.86	0.02	0.02	812	44862		
			17:38:17	35.81	20.15	123.84	0.02	0.02	812	44372		
			17:38:18	35.81	20.15	123.86	0.02	0.02	812	43892		
			17:38:19	35.79	20.16	123.84	0.02	0.02	812	43892		
			17:38:20	35.83	20.16	123.86	0.02	0.02	812	47485		
			17:38:21	35.83	20.16	123.87	0.02	0.02	812	48333		
			17:38:22	35.86	20.16	123.90	0.02	0.02	812	44372		
			17:38:23	35.84	20.16	123.86	0.02	0.02	812	46400		
			17:38:24	35.76	20.16	123.86	0.02	0.02	812	46400		
			17:38:25	35.74	20.16	123.84	0.07	0.07	812	11388		
			17:38:26	35.77	20.16	123.88	0.02	0.02	812	45876		
			17:38:27	35.75	20.16	123.82	0.02	0.02	812	45363		
			17:38:28	35.78	20.16	123.82	0.03	0.03	812	31231		
			17:38:29	35.78	20.16	123.84	0.02	0.02	812	40600		
			17:38:30	35.81	20.16	123.86	0.02	0.02	812	47765		
			17:38:31	35.76	20.16	123.83	0.02	0.02	812	42963		
			17:38:32	35.83	20.16	123.79	0.02	0.02	812	47485		
			17:38:33	35.77	20.16	123.79	0.02	0.02	812	42513		
			17:38:34	35.76	20.16	123.79	0.02	0.02	812	44372		
			17:38:35	35.76	20.16	123.75	0.02	0.02	812	48916		
			17:38:36	35.77	20.15	123.82	0.02	0.02	812	48333		
			17:38:37	35.79	20.15	123.75	0.02	0.02	812	44372		
			17:38:38	35.75	20.15	123.75	0.02	0.02	812	42963		
			17:38:39	35.74	20.15	123.77	0.02	0.02	812	46136		
			17:38:40	35.66	20.15	123.77	0.02	0.02	812	47765		
			17:38:41	35.68	20.15	123.77	0.02	0.02	812	46136		
			17:38:42	35.66	20.15	123.73	0.27	0.27	812	3064		
			17:38:43	35.68	20.15	123.75	0.02	0.02	812	47209		

**TABLE D-18**

Profile PRO-14 on September 21, 2022 (1731-1740 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

1383	Instantaneous Minimum Dilution in Profile
3092	Minimum Average Dilution in Profile
4903	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:38:44	35.68	20.15	123.77	0.02	0.02	812	41856		
			17:38:45	35.63	20.15	123.75	0.02	0.02	812	44862		
			17:38:46	35.65	20.15	123.71	0.05	0.05	812	15953		
			17:38:47	35.63	20.15	123.75	0.03	0.03	812	25375		
			17:38:48	35.69	20.15	123.71	0.02	0.02	812	37944		
			17:38:49	35.66	20.14	123.73	0.02	0.02	812	50123		
			17:38:50	35.68	20.14	123.73	0.02	0.02	812	42073		
			17:38:51	35.68	20.14	123.71	0.02	0.02	812	47209		
			17:38:52	35.71	20.14	123.71	0.02	0.02	812	43892		
			17:38:53	35.70	20.14	123.75	0.02	0.02	812	47765		
			17:38:54	35.69	20.14	123.73	0.02	0.02	812	38302		
			17:38:55	35.65	20.14	123.69	0.02	0.02	812	45363		
			17:38:56	36.03	20.14	123.69	0.02	0.02	812	45876		
			17:38:57	38.40	20.14	123.69	0.02	0.02	812	42513		
			17:38:58	40.73	20.15	123.71	0.02	0.02	812	42073		
			17:38:59	41.11	20.15	123.71	0.09	0.09	812	9022		
			17:39:00	41.21	20.15	123.71	0.12	0.12	812	6512		
			17:39:01	41.10	20.15	123.71	0.02	0.02	812	47765		
			17:39:02	41.04	20.14	123.73	0.02	0.02	812	45876		
			17:39:03	41.03	20.14	123.75	0.02	0.02	812	46667		
			17:39:04	40.93	20.14	123.71	0.02	0.02	812	42963		
			17:39:05	40.94	20.14	123.73	0.20	0.20	812	4164		
			17:39:06	40.93	20.14	123.73	0.06	0.06	812	14097		
			17:39:07	40.88	20.14	123.73	0.02	0.02	812	46400		
			17:39:08	40.79	20.14	123.65	0.02	0.02	812	40804		
			17:39:09	40.81	20.14	123.67	0.02	0.02	812	46667		
			17:39:10	40.81	20.14	123.69	0.04	0.04	812	21711		
			17:39:11	40.77	20.14	123.69	0.02	0.02	812	43892		
			17:39:12	40.73	20.14	123.71	0.02	0.02	812	51392		
			17:39:13	40.69	20.14	123.69	0.20	0.20	812	4036		
			17:39:14	40.71	20.14	123.71	0.15	0.15	812	5262		
			17:39:15	40.77	20.14	123.69	0.08	0.08	812	10000		
			17:39:16	40.78	20.14	123.67	0.02	0.02	812	47765		
			17:39:17	40.77	20.14	123.75	0.02	0.02	812	46136		
			17:39:18	40.74	20.14	123.69	0.02	0.02	812	42513		
			17:39:19	40.77	20.14	123.73	0.02	0.02	812	46667		
			17:39:20	40.83	20.14	123.67	0.04	0.04	812	18753		
			17:39:21	40.91	20.14	123.71	0.02	0.02	812	46400		
			17:39:22	40.95	20.14	123.69	0.02	0.02	812	34553		

**TABLE D-18**

Profile PRO-14 on September 21, 2022 (1731-1740 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

1383	Instantaneous Minimum Dilution in Profile
3092	Minimum Average Dilution in Profile
4903	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:39:23	41.00	20.14	123.71	0.16	0.16	812	5009		No plume trace detected at 41 ft
			17:39:24	41.09	20.14	123.67	0.03	0.03	812	24024		
			17:39:25	41.20	20.14	123.69	0.08	0.08	812	10214		
			17:39:26	41.31	20.14	123.67	0.02	0.02	812	43422		
			17:39:27	41.31	20.14	123.65	0.02	0.02	812	41429		
			17:39:28	41.36	20.14	123.69	0.02	0.02	812	46136		
			17:39:29	41.23	20.14	123.69	0.02	0.02	812	47765		
			17:39:30	41.23	20.14	123.71	0.02	0.02	812	48333		
			17:39:31	41.17	20.14	123.73	0.02	0.02	812	44372		
			17:39:32	41.16	20.14	123.67	0.02	0.02	812	45363		
			17:39:33	41.14	20.14	123.69	0.02	0.02	812	43422		
			17:39:34	41.05	20.14	123.75	0.24	0.24	812	3316		
			17:39:35	41.02	20.14	123.71	0.11	0.11	812	7505		
			17:39:36	40.96	20.14	123.71	0.02	0.02	812	49512		
			17:39:37	40.89	20.14	123.69	0.02	0.02	812	35152		
			17:39:38	40.82	20.14	123.69	0.02	0.02	812	45876		
			17:39:39	40.81	20.14	123.73	0.04	0.04	812	18581		
			17:39:40	40.77	20.14	123.71	0.08	0.08	812	10163		
			17:39:41	40.73	20.14	123.67	0.10	0.10	812	7785		
			17:39:42	40.72	20.14	123.73	0.19	0.19	812	4186		
			17:39:43	40.69	20.14	123.69	0.02	0.02	812	44372		
			17:39:44	40.80	20.14	123.69	0.02	0.02	812	45363		
			17:39:45	40.71	20.14	123.73	0.02	0.02	812	35459		
			17:39:46	40.75	20.14	123.73	0.02	0.02	812	46667		
			17:39:47	40.71	20.14	123.71	0.02	0.02	812	47485		
			17:39:48	40.75	20.14	123.63	0.13	0.13	812	6295		
			17:39:49	40.75	20.14	123.67	0.25	0.25	812	3208		
			17:39:50	40.80	20.14	123.73	0.03	0.03	812	28592		
			17:39:51	40.99	20.14	123.67	0.08	0.08	812	10614		
			17:39:52	41.21	20.14	123.65	0.45	0.03	812	32044		
			17:39:53	43.00	20.14	123.65	0.16	0.16	812	5094		
			17:39:54	45.76	20.14	123.71	0.65	0.21	812	3941		
			17:39:55	46.13	20.14	123.71	0.80	0.34	812	2391		
			17:39:56	46.26	20.14	123.69	0.54	0.10	812	7739		
			17:39:57	46.21	20.14	123.71	0.33	0.33	812	2495		
			17:39:58	46.25	20.14	123.69	0.49	0.06	812	12528		
			17:39:59	46.24	20.14	123.69	0.03	0.03	812	28392		
			17:40:00	46.16	20.14	123.69	0.15	0.15	812	5439		
			17:40:01	46.01	20.14	123.67	0.20	0.20	812	4109		

**TABLE D-18**

Profile PRO-14 on September 21, 2022 (1731-1740 hours PDT) located at South AZB (24 feet from Outfall Diffuser)  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

1383	Instantaneous Minimum Dilution in Profile
3092	Minimum Average Dilution in Profile
4903	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:40:02	46.01	20.14	123.71	0.68	0.23	812	3495		Possible trace plume at 46 ft
			17:40:03	45.94	20.14	123.71	0.60	0.16	812	5170		
			17:40:04	45.91	20.13	123.67	0.03	0.03	812	24311		
			17:40:05	45.88	20.13	123.65	0.04	0.04	812	19709		
			17:40:06	45.93	20.13	123.69	0.06	0.06	812	13097		
			17:40:07	45.90	20.13	123.63	0.15	0.15	812	5374		
			17:40:08	45.96	20.13	123.69	0.23	0.23	812	3506		
			17:40:09	45.93	20.13	123.71	0.43	0.01	812	124946		
			17:40:10	45.94	20.13	123.69	0.10	0.10	812	8153		
			17:40:11	45.83	20.13	123.69	0.06	0.06	812	14097		
			17:40:12	45.86	20.13	123.67	0.33	0.33	812	2482		
			17:40:13	45.76	20.13	123.69	0.79	0.33	812	2479	4525	
			17:40:14	45.81	20.13	123.65	0.27	0.27	812	3039		
			17:40:15	45.77	20.13	123.69	0.09	0.09	812	8797		
			17:40:16	45.78	20.13	123.67	0.53	0.10	812	8099		
			17:40:17	45.77	20.13	123.67	0.32	0.32	812	2568		
			17:40:18	45.84	20.13	123.65	0.62	0.18	812	4529		
			17:40:19	45.86	20.13	123.71	0.31	0.31	812	2659		
			17:40:20	45.82	20.13	123.69	0.20	0.20	812	4162		
			17:40:21	45.83	20.13	123.65	0.25	0.25	812	3191		
			17:40:22	45.88	20.13	123.65	0.22	0.22	812	3721		
			17:40:23	45.84	20.13	123.69	0.09	0.09	812	9291		
			17:40:24	45.92	20.13	123.71	0.10	0.10	812	8441		
			17:40:25	45.89	20.13	123.67	0.62	0.18	812	4549		
			17:40:26	45.89	20.13	123.63	1.08	0.59	812	1383		
			17:40:27	45.96	20.13	123.69	0.32	0.32	812	2522		
			17:40:28	45.97	20.13	123.69	0.16	0.16	812	5019		
			17:40:29	46.04	20.13	123.69	0.07	0.07	812	10870		
			17:40:30	46.12	20.13	123.67	0.07	0.07	812	12303		
			17:40:31	46.03	20.13	123.64	0.07	0.07	812	11325		



**TABLE D-19**

Profile BKGRD-03 on September 21, 2022 (1747-1750 hours PDT) located 700 feet south of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
BKGRD-03 located 700 ft south (upcurrent) from Outfall Diffuser	51 ft	0.42 m/sec 351 deg. (mag.) Ebb Tide	17:47:28	2.34	20.21	123.82	0.02	0.02	829	42296		No dye or plume detected
			17:47:29	2.36	20.21	123.94	0.02	0.02	829	42513		
			17:47:30	2.35	20.21	123.90	0.02	0.02	829	43862		
			17:47:31	2.39	20.21	123.86	0.02	0.02	829	45801		
			17:47:32	2.39	20.21	123.88	0.02	0.02	829	44332		
			17:47:33	2.33	20.21	123.87	0.02	0.02	829	46056		
			17:47:34	2.31	20.21	123.79	0.02	0.02	829	50549		
			17:47:35	2.30	20.20	123.86	0.02	0.02	829	42513		
			17:47:36	2.29	20.20	123.79	0.02	0.02	829	42953		
			17:47:37	2.24	20.20	123.77	0.02	0.02	829	45801		
			17:47:38	2.33	20.20	123.79	0.02	0.02	829	46056		
			17:47:39	2.34	20.20	123.79	0.02	0.02	829	42513		
			17:47:40	2.44	20.20	123.67	0.03	0.03	829	24820		
			17:47:41	2.38	20.19	123.79	0.02	0.02	829	44332		
			17:47:42	2.45	20.20	123.73	0.02	0.02	829	43862		
			17:47:43	2.33	20.20	123.89	0.02	0.02	829	46313		
			17:47:44	2.42	20.20	123.86	0.02	0.02	829	42081		
			17:47:45	2.38	20.20	123.88	0.02	0.02	829	43862		
			17:47:46	2.39	20.20	123.82	0.02	0.02	829	35887		
			17:47:47	2.38	20.21	123.86	0.02	0.02	829	42732		
			17:47:48	2.45	20.21	123.86	0.02	0.02	829	44811		
			17:47:49	2.39	20.21	123.82	0.02	0.02	829	45301		
			17:47:50	2.44	20.21	123.82	0.02	0.02	829	44811		
			17:47:51	2.40	20.21	123.82	0.02	0.02	829	48765		
			17:47:52	2.40	20.20	123.82	0.02	0.02	829	43862		
			17:47:53	2.42	20.20	123.77	0.02	0.02	829	47102		
			17:47:54	2.38	20.20	123.65	0.02	0.02	829	44811		
			17:47:55	2.38	20.20	123.69	0.02	0.02	829	45801		
			17:47:56	2.42	20.20	123.63	0.02	0.02	829	45801		
			17:47:57	2.39	20.20	123.69	0.02	0.02	829	42953		
17:47:58	2.38	20.20	123.73	0.02	0.02	829	42081					
17:47:59	2.38	20.20	123.73	0.02	0.02	829	43403					
17:48:00	2.41	20.20	123.69	0.02	0.02	829	44811					
17:48:01	2.37	20.20	123.73	0.02	0.02	829	41040					
17:48:02	2.37	20.20	123.67	0.02	0.02	829	45301					
17:48:03	2.32	20.20	123.55	0.02	0.02	829	46573					
17:48:04	2.36	20.14	123.65	0.02	0.02	829	46836					
17:48:05	2.32	20.14	123.52	0.02	0.02	829	46313					
17:48:06	2.37	20.09	123.82	0.02	0.02	829	46313					

**TABLE D-19**

Profile BKGRD-03 on September 21, 2022 (1747-1750 hours PDT) located 700 feet south of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:48:07	2.51	20.18	124.03	0.02	0.02	829	48480		
			17:48:08	2.66	20.20	124.01	0.02	0.02	829	44332		
			17:48:09	2.68	20.20	124.01	0.02	0.02	829	47644		
			17:48:10	2.81	20.20	124.05	0.02	0.02	829	45301		
			17:48:11	2.81	20.20	124.01	0.02	0.02	829	48198		
			17:48:12	2.84	20.20	124.06	0.02	0.02	829	44332		
			17:48:13	2.83	20.20	124.03	0.02	0.02	829	47102		
			17:48:14	2.88	20.20	123.99	0.02	0.02	829	49345		
			17:48:15	2.89	20.20	123.99	0.02	0.02	829	46573		
			17:48:16	2.88	20.19	123.99	0.02	0.02	829	45301		
			17:48:17	2.89	20.19	123.99	0.02	0.02	829	45301		
			17:48:18	2.89	20.20	124.05	0.02	0.02	829	43862		
			17:48:19	3.04	20.20	124.03	0.02	0.02	829	42953		
			17:48:20	3.56	20.19	124.01	0.02	0.02	829	44811		
			17:48:21	4.35	20.20	124.05	0.02	0.02	829	44811		
			17:48:22	5.08	20.20	124.01	0.02	0.02	829	45301		
			17:48:23	5.85	20.20	124.07	0.02	0.02	829	41869		No dye plume detected
			17:48:24	6.57	20.20	124.05	0.12	0.12	829	6868		
			17:48:25	7.43	20.20	124.07	0.02	0.02	829	41040		
			17:48:26	8.11	20.20	124.11	0.02	0.02	829	47644		
			17:48:27	8.66	20.21	124.11	0.02	0.02	829	47644		
			17:48:28	9.46	20.21	124.11	0.02	0.02	829	44811		
			17:48:29	10.03	20.21	124.15	0.02	0.02	829	45301		
			17:48:30	10.56	20.20	124.05	0.02	0.02	829	44332		
			17:48:31	11.05	20.20	124.09	0.02	0.02	829	43862		No dye plume detected
			17:48:32	11.53	20.20	124.12	0.02	0.02	829	45801		
			17:48:33	12.15	20.20	124.11	0.02	0.02	829	44332		
			17:48:34	12.86	20.21	124.13	0.02	0.02	829	48480		
			17:48:35	13.30	20.21	124.09	0.02	0.02	829	44332		
			17:48:36	13.96	20.20	124.11	0.02	0.02	829	47919		
			17:48:37	14.58	20.21	124.07	0.02	0.02	829	48480		No dye plume detected
			17:48:38	15.28	20.20	124.11	0.02	0.02	829	46836		
			17:48:39	16.03	20.20	124.13	0.02	0.02	829	43862		
			17:48:40	16.78	20.20	124.07	0.02	0.02	829	42953		
			17:48:41	17.39	20.20	124.10	0.02	0.02	829	48480		
			17:48:42	18.05	20.20	124.03	0.02	0.02	829	46836		
			17:48:43	18.65	20.20	124.09	0.02	0.02	829	41040		No dye plume detected
			17:48:44	19.27	20.20	124.13	0.02	0.02	829	42732		
			17:48:45	20.04	20.20	124.07	0.02	0.02	829	54901		

**TABLE D-19**

Profile BKGRD-03 on September 21, 2022 (1747-1750 hours PDT) located 700 feet south of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:48:46	20.85	20.20	124.07	0.02	0.02	829	50549		
			17:48:47	21.56	20.20	124.11	0.02	0.02	829	43862		
			17:48:48	22.40	20.20	124.07	0.02	0.02	829	49345		No dye plume detected
			17:48:49	22.99	20.20	124.07	0.02	0.02	829	46313		
			17:48:50	23.72	20.19	124.05	0.02	0.02	829	47102		
			17:48:51	24.27	20.19	124.01	0.02	0.02	829	45801		
			17:48:52	24.76	20.18	123.92	0.02	0.02	829	46313		
			17:48:53	25.46	20.18	124.01	0.02	0.02	829	46573		
			17:48:54	26.18	20.19	123.99	0.02	0.02	829	42953		No dye plume detected
			17:48:55	27.14	20.19	123.99	0.02	0.02	829	45301		
			17:48:56	27.60	20.18	123.96	0.02	0.02	829	42953		
			17:48:57	28.75	20.18	123.92	0.02	0.02	829	47102		
			17:48:58	30.01	20.18	123.94	0.02	0.02	829	52468		
			17:48:59	30.41	20.17	123.92	0.02	0.02	829	43403		
			17:49:00	31.59	20.17	123.92	0.02	0.02	829	45801		
			17:49:01	32.49	20.17	123.95	0.02	0.02	829	47102		
			17:49:02	33.38	20.17	123.96	0.02	0.02	829	45801		No dye plume detected
			17:49:03	34.12	20.17	123.94	0.02	0.02	829	47644		
			17:49:04	34.93	20.17	123.88	0.02	0.02	829	44332		
			17:49:05	35.85	20.16	123.88	0.02	0.02	829	44332		
			17:49:06	36.44	20.16	123.88	0.02	0.02	829	46313		
			17:49:07	36.95	20.16	123.96	0.02	0.02	829	43862		
			17:49:08	37.67	20.17	123.90	0.02	0.02	829	43403		
			17:49:09	38.64	20.18	124.03	0.02	0.02	829	46836		
			17:49:10	39.29	20.18	124.03	0.02	0.02	829	45801		
			17:49:11	40.07	20.19	124.09	0.02	0.02	829	45801		No dye plume detected
			17:49:12	40.78	20.19	124.05	0.02	0.02	829	43403		
			17:49:13	41.44	20.20	124.09	0.02	0.02	829	51813		
			17:49:14	42.09	20.20	124.11	0.02	0.02	829	43403		
			17:49:15	42.70	20.20	124.11	0.02	0.02	829	45301		
			17:49:16	43.37	20.20	124.11	0.02	0.02	829	44811		
			17:49:17	44.01	20.20	124.07	0.02	0.02	829	47644		
			17:49:18	44.69	20.20	124.11	0.02	0.02	829	46313		
			17:49:19	45.24	20.20	124.11	0.02	0.02	829	43862		
			17:49:20	45.72	20.20	124.15	0.02	0.02	829	43403		
			17:49:21	45.97	20.20	124.09	0.02	0.02	829	39476		
			17:49:22	46.01	20.19	124.11	0.02	0.02	829	45801		
			17:49:23	46.01	20.19	124.11	0.02	0.02	829	48480		No dye plume detected
			17:49:24	46.02	20.19	124.07	0.02	0.02	829	45801		

**TABLE D-19**

Profile BKGDR-03 on September 21, 2022 (1747-1750 hours PDT) located 700 feet south of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:49:25	46.07	20.19	124.11	0.11	0.11	829	7343		
			17:49:26	46.02	20.19	124.07	0.02	0.02	829	42953		
			17:49:27	45.45	20.19	124.07	0.02	0.02	829	42953		
			17:49:28	44.42	20.19	124.11	0.02	0.02	829	42953		
			17:49:29	43.61	20.19	124.09	0.02	0.02	829	45801		
			17:49:30	42.75	20.19	124.03	0.02	0.02	829	47102		
			17:49:31	41.96	20.19	124.07	0.02	0.02	829	46573		
			17:49:32	41.02	20.19	124.05	0.02	0.02	829	49345		
			17:49:33	40.04	20.19	124.09	0.02	0.02	829	45301		
			17:49:34	39.22	20.19	124.13	0.02	0.02	829	44811		
			17:49:35	38.70	20.19	124.09	0.02	0.02	829	44332		
			17:49:36	38.05	20.19	124.07	0.02	0.02	829	45801		
			17:49:37	37.27	20.19	124.09	0.02	0.02	829	44332		
			17:49:38	36.36	20.19	124.11	0.05	0.05	829	17944		
			17:49:39	35.64	20.19	124.09	0.02	0.02	829	43862		No dye plume detected
			17:49:40	34.74	20.19	124.08	0.02	0.02	829	45801		
			17:49:41	33.96	20.20	124.15	0.02	0.02	829	43403		
			17:49:42	33.19	20.20	124.11	0.02	0.02	829	47102		
			17:49:43	32.51	20.20	124.20	0.02	0.02	829	44332		
			17:49:44	31.88	20.20	124.18	0.02	0.02	829	44096		
			17:49:45	30.93	20.20	124.13	0.02	0.02	829	46313		
			17:49:46	30.00	20.20	124.13	0.02	0.02	829	50549		
			17:49:47	29.18	20.20	124.15	0.02	0.02	829	44811		
			17:49:48	28.51	20.20	124.18	0.02	0.02	829	46836		No dye plume detected
			17:49:49	27.66	20.20	124.18	0.02	0.02	829	44332		
			17:49:50	26.69	20.20	124.15	0.02	0.02	829	43403		
			17:49:51	25.80	20.20	124.09	0.02	0.02	829	45801		
			17:49:52	24.91	20.20	124.15	0.02	0.02	829	44811		
			17:49:53	24.00	20.20	124.18	0.02	0.02	829	42732		
			17:49:54	23.07	20.20	124.15	0.02	0.02	829	44332		
			17:49:55	22.08	20.20	124.11	0.02	0.02	829	46836		
			17:49:56	21.14	20.20	124.13	0.02	0.02	829	45301		
			17:49:57	20.27	20.20	124.13	0.02	0.02	829	48480		
			17:49:58	19.38	20.20	124.20	0.02	0.02	829	51173		
			17:49:59	18.22	20.20	124.18	0.02	0.02	829	48198		No dye plume detected
			17:50:00	17.40	20.20	124.13	0.02	0.02	829	46313		
			17:50:01	16.27	20.20	124.15	0.02	0.02	829	45301		
			17:50:02	15.45	20.20	124.18	0.02	0.02	829	41450		
			17:50:03	14.51	20.20	124.13	0.02	0.02	829	45301		

**TABLE D-19**

Profile BKGRD-03 on September 21, 2022 (1747-1750 hours PDT) located 700 feet south of SCTP Outfall Diffuser  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			17:50:04	13.70	20.20	124.20	0.02	0.02	829	42953		No dye plume detected
			17:50:05	12.90	20.21	124.18	0.02	0.02	829	48765		
			17:50:06	11.85	20.21	124.13	0.02	0.02	829	46836		
			17:50:07	10.83	20.21	124.15	0.02	0.02	829	48198		
			17:50:08	9.74	20.21	124.13	0.02	0.02	829	46573		
			17:50:09	8.99	20.21	124.10	0.02	0.02	829	46836		
			17:50:10	8.06	20.20	124.11	0.02	0.02	829	45801		
			17:50:11	6.98	20.20	124.09	0.02	0.02	829	43862		
			17:50:12	5.98	20.20	124.09	0.02	0.02	829	46836		
			17:50:13	5.00	20.20	124.11	0.02	0.02	829	48198		
			17:50:14	4.08	20.20	124.05	0.02	0.02	829	44332		
			17:50:15	2.86	20.20	124.07	0.02	0.02	829	45301		
			17:50:16	2.07	20.19	124.07	0.02	0.02	829	46313		
			17:50:17	1.66	20.19	124.05	0.02	0.02	829	43403		
			17:50:18	1.62	20.20	124.10	0.04	0.04	829	19324		
			17:50:19	1.75	20.20	124.05	0.02	0.02	829	43403		
			17:50:20	1.81	20.20	124.07	0.02	0.02	829	42953		
			17:50:21	1.89	20.21	124.07	0.02	0.02	829	49940		
			17:50:22	1.38	20.21	124.13	0.02	0.02	829	46836		

**TABLE D-20**

Profile BKGRD-04 on September 22, 2022 (0835-0836 hours PDT) located 700 feet south of Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
BKGRD-04 (700 feet South of South Mixing Zone Boundary)	49 ft	0.52 m/sec 350 deg. (mag.) Ebb Tide	8:35:05	2.90	19.89	125.00	0.02	0.02	500	25000	No dye plume detected at any depth in profile	
			8:35:06	2.93	19.78	125.00	0.02	0.02	500	23585		
			8:35:07	3.53	19.83	124.84	0.02	0.02	500	24272		
			8:35:08	4.40	19.89	125.55	0.02	0.02	500	23041		
			8:35:09	5.41	19.92	125.23	0.02	0.02	500	23148		
			8:35:10	6.32	19.94	125.45	0.02	0.02	500	25907		
			8:35:11	7.63	19.96	125.37	0.02	0.02	500	25381		
			8:35:12	8.80	19.94	125.20	0.02	0.02	500	25000		
			8:35:13	9.97	19.95	125.56	0.02	0.02	500	23585		
			8:35:14	11.17	19.92	125.10	0.02	0.02	500	24876		
			8:35:15	12.20	19.91	125.39	0.02	0.02	500	23585		
			8:35:16	13.26	19.95	125.85	0.02	0.02	500	25510		
			8:35:17	14.46	19.97	125.16	0.02	0.02	500	23041		
			8:35:18	15.49	19.95	125.48	0.02	0.02	500	24510		
			8:35:19	16.52	19.95	125.53	0.02	0.02	500	27027		
			8:35:20	17.45	19.97	125.66	0.02	0.02	500	23148		
			8:35:21	18.45	19.98	125.51	0.02	0.02	500	25907		
			8:35:22	19.34	19.98	125.64	0.02	0.02	500	24272		
			8:35:23	20.12	19.99	125.87	0.02	0.02	500	26455		
			8:35:24	20.91	19.98	126.24	0.02	0.02	500	23810		
			8:35:25	22.01	20.00	126.60	0.02	0.02	500	24510		
			8:35:26	22.87	20.01	126.85	0.02	0.02	500	26178		
			8:35:27	23.77	20.02	127.00	0.02	0.02	500	24510		
			8:35:28	24.66	20.02	126.58	0.02	0.02	500	26738		
			8:35:29	25.63	20.02	126.62	0.02	0.02	500	24510		
			8:35:30	26.86	20.02	126.73	0.02	0.02	500	25000		
			8:35:31	27.73	20.02	126.60	0.02	0.02	500	24038		
			8:35:32	28.69	20.02	126.56	0.02	0.02	500	22727		
			8:35:33	29.62	20.02	126.56	0.02	0.02	500	23810		
			8:35:34	30.47	20.02	126.52	0.02	0.02	500	25000		
			8:35:35	31.22	20.02	126.50	0.02	0.02	500	22624		
			8:35:36	32.10	20.02	126.50	0.02	0.02	500	24272		
			8:35:37	33.02	20.02	126.37	0.02	0.02	500	25907		
8:35:38	33.83	20.01	126.31	0.02	0.02	500	23585					
8:35:39	34.67	20.01	126.35	0.02	0.02	500	24752					
8:35:40	35.59	20.01	126.26	0.02	0.02	500	25000					
8:35:41	36.24	20.01	126.04	0.02	0.02	500	25641					
8:35:42	37.00	19.98	126.23	0.02	0.02	500	23810					
8:35:43	37.91	20.00	126.32	0.02	0.02	500	24510					

**TABLE D-20**

Profile BKGRD-04 on September 22, 2022 (0835-0836 hours PDT) located 700 feet south of Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			8:35:44	38.68	20.01	126.37	0.02	0.02	500	25907		
			8:35:45	39.45	20.01	126.37	0.02	0.02	500	23041		
			8:35:46	40.29	20.01	126.41	0.02	0.02	500	23810		
			8:35:47	41.22	20.02	126.07	0.02	0.02	500	24272		
			8:35:48	42.11	20.03	126.22	0.02	0.02	500	22831		
			8:35:49	42.94	20.04	126.01	0.02	0.02	500	25126		
			8:35:50	43.34	20.03	126.08	0.02	0.02	500	23364		
			8:35:51	43.86	20.03	126.10	0.02	0.02	500	24038		
			8:35:52	44.38	20.03	125.87	0.02	0.02	500	24752		
			8:35:53	44.73	20.03	125.85	0.02	0.02	500	23810		
			8:35:54	44.86	20.03	125.80	0.02	0.02	500	24272		
			8:35:55	44.81	20.03	125.78	0.02	0.02	500	24038		
			8:35:56	44.91	20.03	125.66	0.02	0.02	500	24038		
			8:35:57	44.88	20.02	125.61	0.02	0.02	500	23148		
			8:35:58	44.92	20.02	125.55	0.02	0.02	500	23810		
			8:35:59	45.03	20.02	125.48	0.02	0.02	500	24752		
			8:36:00	45.08	20.02	125.41	0.02	0.02	500	25641		
			8:36:01	45.36	20.03	125.30	0.02	0.02	500	25907		
			8:36:02	45.26	20.02	125.35	0.02	0.02	500	24038		
			8:36:03	45.24	20.02	125.32	0.02	0.02	500	23148		
			8:36:04	43.99	20.02	125.39	0.02	0.02	500	25000		
			8:36:05	42.76	20.02	125.49	0.02	0.02	500	24510		
			8:36:06	41.08	20.02	125.61	0.02	0.02	500	24272		
			8:36:07	39.21	20.02	125.68	0.02	0.02	500	23810		
			8:36:08	37.24	20.02	125.73	0.02	0.02	500	25000		
			8:36:09	35.72	20.03	125.78	0.02	0.02	500	25907		
			8:36:10	34.01	20.03	126.10	0.02	0.02	500	23585		
			8:36:11	32.14	20.03	126.56	0.02	0.02	500	24752		
			8:36:12	30.29	20.04	126.73	0.02	0.02	500	23041		
			8:36:13	28.49	20.04	126.79	0.02	0.02	500	25253		
			8:36:14	26.76	20.04	126.58	0.02	0.02	500	24038		
			8:36:15	24.88	20.04	126.85	0.02	0.02	500	24272		
			8:36:16	22.94	20.04	126.77	0.02	0.02	500	22523		
			8:36:17	21.07	20.04	126.78	0.02	0.02	500	24272		
			8:36:18	19.23	20.04	126.85	0.02	0.02	500	24752		
			8:36:19	17.33	20.05	126.90	0.02	0.02	500	26738		
			8:36:20	15.51	20.05	127.00	0.02	0.02	500	24272		
			8:36:21	13.61	20.05	127.05	0.02	0.02	500	24510		
			8:36:22	11.60	20.05	127.08	0.02	0.02	500	25773		

**TABLE D-20**

Profile BKGRD-04 on September 22, 2022 (0835-0836 hours PDT) located 700 feet south of Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			8:36:23	9.68	20.05	127.06	0.02	0.02	500	25000		
			8:36:24	7.77	20.05	126.85	0.02	0.02	500	26738		
			8:36:25	5.92	20.04	126.81	0.02	0.02	500	26178		



**TABLE D-21**

Profile PRO-15 on September 21, 2022 (0854-0905 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>329</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>1432</b>	<b>Minimum Average Dilution in Profile</b>
<b>3651</b>	<b>Plume Average Dilution Detected</b>
<b>17024</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-15 (North Mixing Zone Boundary - 242 ft from Diffuser) and downstream of inshore diffuser start (East)	48 ft	0.48 m/sec 351 deg. (mag.) Ebb Tide	8:54:41	2.19	20.07	130.46	0.03	0.03	689	22967	32259	No plume detected near surface
			8:54:42	2.16	20.07	131.09	0.02	0.02	689	31606		
			8:54:43	2.15	20.08	131.15	0.06	0.06	689	10971		
			8:54:44	2.21	20.08	131.20	0.16	0.16	689	4237		
			8:54:45	2.17	20.07	131.26	0.02	0.02	689	34109		
			8:54:46	2.22	20.06	129.81	0.02	0.02	689	33125		
			8:54:47	2.09	19.83	129.53	0.02	0.02	689	33775		
			8:54:48	2.18	19.70	129.31	0.02	0.02	689	33775		
			8:54:49	2.12	19.58	128.84	0.02	0.02	689	36455		
			8:54:50	2.27	19.47	128.53	0.02	0.02	689	35333		
			8:54:51	2.18	19.34	128.17	0.02	0.02	689	28950		
			8:54:52	2.21	19.19	127.92	0.02	0.02	689	34975		
			8:54:53	2.22	19.09	127.76	0.02	0.02	689	34798		
			8:54:54	2.15	19.03	127.58	0.02	0.02	689	33775		
			8:54:55	2.18	18.97	127.27	0.02	0.02	689	37243		
			8:54:56	2.20	18.89	127.06	0.02	0.02	689	32810		
			8:54:57	2.19	18.82	126.98	0.02	0.02	689	31751		
			8:54:58	2.18	18.78	126.97	0.02	0.02	689	34623		
			8:54:59	2.18	18.77	126.94	0.02	0.02	689	34450		
			8:55:00	2.19	18.79	127.04	0.02	0.02	689	38066		
8:55:01	2.25	18.82	127.12	0.02	0.02	689	34450					
8:55:02	2.21	18.89	127.19	0.02	0.02	689	33775					
8:55:03	2.26	18.91	127.23	0.02	0.02	689	35333					
8:55:04	2.17	18.96	127.31	0.02	0.02	689	38927					
8:55:05	2.27	19.02	127.31	0.02	0.02	689	32196					
8:55:06	2.19	19.05	127.36	0.02	0.02	689	33775					
8:55:07	2.20	19.10	127.46	0.02	0.02	689	34109					
8:55:08	2.22	19.15	127.64	0.02	0.02	689	33125					
8:55:09	2.17	19.18	127.74	0.02	0.02	689	34109					
8:55:10	2.28	19.19	127.86	0.02	0.02	689	34798					
8:55:11	2.67	19.22	128.33	0.02	0.02	689	37650					
8:55:12	5.39	19.70	133.78	0.02	0.02	689	36845					
8:55:13	7.26	20.07	134.25	0.02	0.02	689	36073					
8:55:14	7.61	20.10	134.81	0.02	0.02	689	34109					
8:55:15	7.60	20.10	134.73	0.02	0.02	689	36845					
8:55:16	7.61	20.10	134.86	0.02	0.02	689	33125					
8:55:17	7.61	20.11	136.14	0.02	0.02	689	31751					
8:55:18	7.55	20.12	136.26	0.02	0.02	689	36649					
8:55:19	7.57	20.12	135.67	0.02	0.02	689	33125					

**TABLE D-21**

Profile PRO-15 on September 21, 2022 (0854-0905 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

329	Instantaneous Minimum Dilution in Profile
1432	Minimum Average Dilution in Profile
3651	Plume Average Dilution Detected
17024	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			8:55:20	7.58	20.11	135.38	0.02	0.02	689	34450		
			8:55:21	7.62	20.11	135.19	0.02	0.02	689	33447		
			8:55:22	7.58	20.11	135.25	0.02	0.02	689	33775		
			8:55:23	7.78	20.11	135.29	0.02	0.02	689	35515	34215	No plume detected at 7-8 ft
			8:55:24	7.73	20.11	135.13	0.02	0.02	689	32196		
			8:55:25	7.78	20.11	134.75	0.02	0.02	689	36455		
			8:55:26	7.79	20.10	134.66	0.02	0.02	689	33447		
			8:55:27	7.78	20.10	134.70	0.02	0.02	689	32810		
			8:55:28	7.79	20.11	134.78	0.02	0.02	689	33125		
			8:55:29	7.85	20.10	134.39	0.02	0.02	689	34109		
			8:55:30	7.88	20.10	134.20	0.02	0.02	689	32500		
			8:55:31	7.87	20.10	134.10	0.02	0.02	689	35699		
			8:55:32	7.86	20.10	134.03	0.02	0.02	689	35699		
			8:55:33	7.81	20.10	133.89	0.02	0.02	689	32500		
			8:55:34	7.80	20.10	133.68	0.02	0.02	689	33775		
			8:55:35	7.78	20.09	133.62	0.02	0.02	689	35333		
			8:55:36	7.84	20.09	133.70	0.02	0.02	689	30897		
			8:55:37	7.76	20.10	133.70	0.02	0.02	689	33447		
			8:55:38	7.72	20.10	133.85	0.02	0.02	689	33775		
			8:55:39	7.65	20.10	133.93	0.02	0.02	689	36455		
			8:55:40	7.68	20.10	134.07	0.02	0.02	689	32810		
			8:55:41	7.62	20.10	134.14	0.02	0.02	689	36455		
			8:55:42	7.74	20.10	133.76	0.02	0.02	689	32196		
			8:55:43	7.72	20.09	133.16	0.02	0.02	689	33125		
			8:55:44	7.74	20.09	133.49	0.02	0.02	689	37243		
			8:55:45	7.66	20.09	133.41	0.02	0.02	689	33775		
			8:55:46	7.71	20.09	132.99	0.02	0.02	689	34450		
			8:55:47	7.66	20.09	132.66	0.02	0.02	689	34975		
			8:55:48	7.63	20.09	132.62	0.02	0.02	689	34975		
			8:55:49	7.59	20.09	132.52	0.02	0.02	689	34798		
			8:55:50	7.65	20.09	132.47	0.02	0.02	689	35333		
			8:55:51	7.66	20.09	132.53	0.02	0.02	689	34109		
			8:55:52	7.70	20.09	132.45	0.02	0.02	689	34450		
			8:55:53	7.63	20.09	132.51	0.02	0.02	689	33775		
			8:55:54	7.61	20.09	132.55	0.02	0.02	689	37243		
			8:55:55	7.58	20.09	132.53	0.02	0.02	689	35515		
			8:55:56	7.73	20.09	132.49	0.02	0.02	689	34975		
			8:55:57	7.71	20.09	132.48	0.02	0.02	689	33775		
			8:55:58	7.69	20.09	132.55	0.02	0.02	689	36073		

**TABLE D-21**

Profile PRO-15 on September 21, 2022 (0854-0905 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

329	Instantaneous Minimum Dilution in Profile
1432	Minimum Average Dilution in Profile
3651	Plume Average Dilution Detected
17024	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured	Calibration-	Measured	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							Dye Conc. (ppb)	Corrected Dye Conc. (ppb)	Initial Dye Conc. (ppb)			
			8:55:59	7.72	20.09	132.68	0.02	0.02	689	35515		
			8:56:00	7.66	20.09	132.72	0.02	0.02	689	31461		
			8:56:01	7.55	20.09	132.80	0.02	0.02	689	32196		
			8:56:02	7.62	20.09	132.93	0.02	0.02	689	33447		
			8:56:03	7.63	20.09	132.97	0.02	0.02	689	34109		
			8:56:04	7.66	20.09	132.97	0.02	0.02	689	32196		
			8:56:05	7.75	20.09	132.91	0.02	0.02	689	33125		
			8:56:06	8.21	20.09	132.78	0.02	0.02	689	34450		
			8:56:07	10.87	20.09	132.81	0.02	0.02	689	33775		
			8:56:08	13.13	20.09	133.05	0.02	0.02	689	34109		
			8:56:09	13.39	20.09	132.72	0.02	0.02	689	33125		
			8:56:10	13.46	20.09	132.61	0.02	0.02	689	34450		
			8:56:11	13.48	20.09	132.67	0.02	0.02	689	33125		
			8:56:12	13.45	20.09	132.80	0.02	0.02	689	30622		
			8:56:13	13.40	20.09	132.75	0.02	0.02	689	34109		
			8:56:14	13.35	20.09	132.60	0.02	0.02	689	39598		
			8:56:15	13.45	20.09	132.62	0.02	0.02	689	32196		
			8:56:16	13.44	20.09	132.60	0.02	0.02	689	34623	33975	No plume detected at 13 ft
			8:56:17	13.56	20.09	132.88	0.02	0.02	689	33775		
			8:56:18	13.46	20.09	133.14	0.02	0.02	689	36455		
			8:56:19	13.55	20.09	132.86	0.02	0.02	689	34109		
			8:56:20	13.46	20.09	132.58	0.02	0.02	689	33125		
			8:56:21	13.46	20.09	132.47	0.02	0.02	689	33447		
			8:56:22	13.46	20.08	132.44	0.02	0.02	689	32810		
			8:56:23	13.50	20.08	132.47	0.02	0.02	689	39371		
			8:56:24	13.57	20.08	132.49	0.02	0.02	689	34798		
			8:56:25	13.55	20.08	132.53	0.02	0.02	689	31898		
			8:56:26	13.49	20.09	132.61	0.02	0.02	689	33125		
			8:56:27	13.51	20.09	132.65	0.02	0.02	689	34975		
			8:56:28	13.48	20.09	132.55	0.02	0.02	689	34109		
			8:56:29	13.53	20.09	132.58	0.02	0.02	689	33447		
			8:56:30	13.46	20.09	132.38	0.02	0.02	689	31461		
			8:56:31	13.47	20.08	132.41	0.02	0.02	689	34450		
			8:56:32	13.52	20.08	132.38	0.02	0.02	689	38927		
			8:56:33	13.40	20.08	132.36	0.02	0.02	689	34109		
			8:56:34	13.53	20.08	132.28	0.02	0.02	689	36845		
			8:56:35	13.36	20.08	132.11	0.02	0.02	689	36073		
			8:56:36	13.56	20.08	131.94	0.02	0.02	689	34623		
			8:56:37	13.42	20.08	131.81	0.02	0.02	689	34450		

**TABLE D-21**

Profile PRO-15 on September 21, 2022 (0854-0905 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

329	Instantaneous Minimum Dilution in Profile
1432	Minimum Average Dilution in Profile
3651	Plume Average Dilution Detected
17024	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured	Calibration-	Measured	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							Dye Conc. (ppb)	Corrected Dye Conc. (ppb)	Initial Dye Conc. (ppb)			
			8:56:38	13.51	20.08	131.31	0.02	0.02	689	33125		
			8:56:39	13.37	20.08	131.28	0.02	0.02	689	35333		
			8:56:40	13.45	20.08	130.87	0.02	0.02	689	33775		
			8:56:41	13.37	20.07	130.40	0.02	0.02	689	30622		
			8:56:42	13.49	20.07	130.44	0.02	0.02	689	31036		
			8:56:43	13.41	20.07	130.42	0.02	0.02	689	33447		
			8:56:44	13.50	20.07	130.37	0.02	0.02	689	30622		
			8:56:45	13.37	20.07	130.08	0.02	0.02	689	31751		
			8:56:46	13.50	20.07	129.93	0.02	0.02	689	34450		
			8:56:47	13.48	20.07	129.79	0.02	0.02	689	30897		
			8:56:48	13.43	20.07	129.72	0.02	0.02	689	34623		
			8:56:49	13.42	20.06	129.06	0.02	0.02	689	32500		
			8:56:50	13.39	20.06	128.41	0.02	0.02	689	34450		
			8:56:51	13.50	20.05	127.96	0.02	0.02	689	36455		
			8:56:52	13.69	20.05	128.11	0.02	0.02	689	33447		
			8:56:53	15.60	20.05	128.91	0.02	0.02	689	36455		
			8:56:54	18.34	20.06	129.32	0.02	0.02	689	35333		
			8:56:55	18.90	20.06	129.20	0.02	0.02	689	35699		
			8:56:56	18.92	20.06	129.80	0.02	0.02	689	35333		
			8:56:57	19.01	20.07	130.43	0.02	0.02	689	32810		
			8:56:58	18.96	20.07	130.18	0.02	0.02	689	32500		
			8:56:59	19.00	20.07	131.14	0.02	0.02	689	37243		
			8:57:00	18.91	20.08	131.38	0.02	0.02	689	34109		
			8:57:01	18.94	20.08	131.21	0.02	0.02	689	35699		
			8:57:02	18.91	20.08	131.18	0.02	0.02	689	34798		
			8:57:03	18.95	20.08	131.14	0.02	0.02	689	32810		
			8:57:04	18.83	20.08	131.08	0.02	0.02	689	35333		
			8:57:05	18.93	20.08	131.02	0.02	0.02	689	36073		
			8:57:06	18.85	20.07	130.79	0.02	0.02	689	33775		
			8:57:07	18.91	20.07	130.60	0.02	0.02	689	34109		
			8:57:08	18.82	20.07	131.16	0.02	0.02	689	31318	34428	No plume detected at 18 ft
			8:57:09	18.80	20.07	130.59	0.02	0.02	689	36649		
			8:57:10	18.76	20.07	130.41	0.02	0.02	689	33125		
			8:57:11	18.77	20.07	130.20	0.02	0.02	689	32810		
			8:57:12	18.76	20.07	129.85	0.02	0.02	689	37650		
			8:57:13	18.75	20.07	129.98	0.02	0.02	689	39827		
			8:57:14	18.83	20.07	129.85	0.02	0.02	689	34109		
			8:57:15	18.80	20.06	129.26	0.02	0.02	689	31898		
			8:57:16	18.84	20.06	129.33	0.02	0.02	689	34975		

**TABLE D-21**

Profile PRO-15 on September 21, 2022 (0854-0905 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

329	Instantaneous Minimum Dilution in Profile
1432	Minimum Average Dilution in Profile
3651	Plume Average Dilution Detected
17024	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			8:57:17	18.82	20.06	129.04	0.02	0.02	689	35515		
			8:57:18	18.88	20.06	128.55	0.02	0.02	689	34450		
			8:57:19	18.84	20.06	129.18	0.02	0.02	689	32500		
			8:57:20	18.80	20.06	129.49	0.02	0.02	689	35699		
			8:57:21	18.86	20.06	129.60	0.02	0.02	689	34109		
			8:57:22	18.83	20.06	129.70	0.02	0.02	689	32500		
			8:57:23	18.84	20.07	130.38	0.02	0.02	689	34975		
			8:57:24	18.83	20.07	130.27	0.02	0.02	689	32500		
			8:57:25	18.83	20.07	130.20	0.02	0.02	689	33775		
			8:57:26	18.77	20.07	131.50	0.02	0.02	689	33125		
			8:57:27	18.79	20.08	131.78	0.02	0.02	689	33447		
			8:57:28	18.79	20.08	132.58	0.02	0.02	689	32196		
			8:57:29	18.73	20.09	132.99	0.02	0.02	689	34109		
			8:57:30	18.63	20.09	132.63	0.02	0.02	689	34450		
			8:57:31	18.62	20.08	131.54	0.02	0.02	689	34975		
			8:57:32	18.65	20.08	131.26	0.02	0.02	689	35153		
			8:57:33	18.69	20.08	131.21	0.02	0.02	689	33775		
			8:57:34	18.68	20.08	132.87	0.02	0.02	689	33775		
			8:57:35	18.79	20.09	133.47	0.02	0.02	689	32810		
			8:57:36	18.71	20.09	132.87	0.02	0.02	689	33447		
			8:57:37	18.80	20.09	132.41	0.02	0.02	689	35333		
			8:57:38	18.72	20.09	132.54	0.02	0.02	689	36073		
			8:57:39	18.70	20.08	132.56	0.02	0.02	689	34109		
			8:57:40	18.64	20.09	133.21	0.02	0.02	689	38066		
			8:57:41	18.66	20.09	133.92	0.02	0.02	689	34975		
			8:57:42	18.71	20.09	133.82	0.02	0.02	689	33775		
			8:57:43	18.78	20.10	134.39	0.02	0.02	689	34798		
			8:57:44	18.82	20.10	134.90	0.02	0.02	689	33447		
			8:57:45	19.29	20.10	134.75	0.02	0.02	689	36073		
			8:57:46	21.86	20.10	134.75	0.02	0.02	689	34975		
			8:57:47	24.04	20.10	134.30	0.02	0.02	689	33447		
			8:57:48	24.24	20.09	133.74	0.02	0.02	689	34798		
			8:57:49	24.24	20.09	134.21	0.02	0.02	689	36073		
			8:57:50	24.29	20.10	134.74	0.02	0.02	689	34450		
			8:57:51	24.26	20.10	134.94	0.02	0.02	689	37650		
			8:57:52	24.33	20.10	134.92	0.02	0.02	689	38066		
			8:57:53	24.13	20.10	134.85	0.02	0.02	689	35699		
			8:57:54	24.13	20.10	134.67	0.02	0.02	689	34450		
			8:57:55	23.98	20.10	134.10	0.02	0.02	689	34450		

**TABLE D-21**

Profile PRO-15 on September 21, 2022 (0854-0905 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

329	Instantaneous Minimum Dilution in Profile
1432	Minimum Average Dilution in Profile
3651	Plume Average Dilution Detected
17024	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			8:57:56	24.06	20.09	133.64	0.02	0.02	689	37243		
			8:57:57	24.03	20.09	133.95	0.02	0.02	689	34798		
			8:57:58	23.99	20.09	134.18	0.02	0.02	689	37243		
			8:57:59	24.00	20.10	134.42	0.02	0.02	689	34109	35369	No plume detected at 24 ft
			8:58:00	24.00	20.10	134.48	0.02	0.02	689	35333		
			8:58:01	24.02	20.10	134.63	0.02	0.02	689	38492		
			8:58:02	24.09	20.10	134.70	0.02	0.02	689	34975		
			8:58:03	24.09	20.10	134.68	0.02	0.02	689	34109		
			8:58:04	24.11	20.10	134.50	0.02	0.02	689	35153		
			8:58:05	24.19	20.10	134.35	0.02	0.02	689	33125		
			8:58:06	24.15	20.10	134.16	0.02	0.02	689	34450		
			8:58:07	24.25	20.09	134.14	0.02	0.02	689	33775		
			8:58:08	24.23	20.09	133.96	0.02	0.02	689	34450		
			8:58:09	24.23	20.09	133.53	0.02	0.02	689	37243		
			8:58:10	24.21	20.09	133.24	0.02	0.02	689	34109		
			8:58:11	24.15	20.09	132.14	0.02	0.02	689	36073		
			8:58:12	24.27	20.08	131.52	0.02	0.02	689	37243		
			8:58:13	24.20	20.08	131.81	0.02	0.02	689	35699		
			8:58:14	24.24	20.08	132.28	0.02	0.02	689	33125		
			8:58:15	24.13	20.08	131.87	0.02	0.02	689	36845		
			8:58:16	24.21	20.08	131.76	0.02	0.02	689	36845		
			8:58:17	24.14	20.08	131.61	0.02	0.02	689	34975		
			8:58:18	24.19	20.08	132.13	0.02	0.02	689	33775		
			8:58:19	24.11	20.08	132.51	0.02	0.02	689	31898		
			8:58:20	24.20	20.08	132.84	0.02	0.02	689	36073		
			8:58:21	24.14	20.08	132.56	0.02	0.02	689	36073		
			8:58:22	24.22	20.08	132.55	0.02	0.02	689	36845		
			8:58:23	24.32	20.09	133.24	0.02	0.02	689	36073		
			8:58:24	24.75	20.09	134.21	0.02	0.02	689	34798		
			8:58:25	27.27	20.10	134.37	0.02	0.02	689	34450		
			8:58:26	29.46	20.10	133.72	0.02	0.02	689	34450		
			8:58:27	29.87	20.09	133.75	0.02	0.02	689	34975		
			8:58:28	29.77	20.09	133.58	0.02	0.02	689	33125		
			8:58:29	29.92	20.09	133.47	0.02	0.02	689	34975		
			8:58:30	29.90	20.09	133.36	0.02	0.02	689	33125		
			8:58:31	29.98	20.09	133.43	0.02	0.02	689	36073		
			8:58:32	29.90	20.09	133.31	0.02	0.02	689	33447		
			8:58:33	29.91	20.09	132.48	0.02	0.02	689	31898		
			8:58:34	29.90	20.08	132.26	0.02	0.02	689	35333		

**TABLE D-21**

Profile PRO-15 on September 21, 2022 (0854-0905 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

329	Instantaneous Minimum Dilution in Profile
1432	Minimum Average Dilution in Profile
3651	Plume Average Dilution Detected
17024	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			8:58:35	29.85	20.08	133.13	0.02	0.02	689	36073		
			8:58:36	29.76	20.09	133.48	0.02	0.02	689	37650		
			8:58:37	29.64	20.09	132.76	0.02	0.02	689	33447		
			8:58:38	29.58	20.08	131.65	0.02	0.02	689	33125		
			8:58:39	29.53	20.08	131.88	0.02	0.02	689	34623		
			8:58:40	29.55	20.08	131.63	0.02	0.02	689	36073		
			8:58:41	29.46	20.09	134.37	0.02	0.02	689	35153	34975	No plume detected at 29 ft
			8:58:42	29.45	20.09	132.79	0.02	0.02	689	35153		
			8:58:43	29.48	20.08	133.17	0.02	0.02	689	37243		
			8:58:44	29.49	20.09	134.88	0.02	0.02	689	34798		
			8:58:45	29.52	20.10	135.48	0.02	0.02	689	33775		
			8:58:46	29.55	20.10	135.33	0.02	0.02	689	33447		
			8:58:47	29.54	20.10	135.23	0.02	0.02	689	37650		
			8:58:48	29.51	20.10	135.15	0.02	0.02	689	34798		
			8:58:49	29.52	20.10	135.06	0.02	0.02	689	35333		
			8:58:50	29.54	20.10	135.45	0.02	0.02	689	36649		
			8:58:51	29.55	20.10	135.89	0.02	0.02	689	33775		
			8:58:52	29.50	20.11	136.23	0.02	0.02	689	33775		
			8:58:53	29.54	20.11	137.05	0.02	0.02	689	33447		
			8:58:54	29.53	20.12	137.08	0.02	0.02	689	34450		
			8:58:55	29.59	20.11	136.82	0.02	0.02	689	33775		
			8:58:56	29.54	20.11	137.18	0.02	0.02	689	37650		
			8:58:57	29.44	20.11	137.18	0.02	0.02	689	39598		
			8:58:58	29.46	20.11	136.97	0.02	0.02	689	36073		
			8:58:59	29.47	20.11	137.13	0.02	0.02	689	33125		
			8:59:00	29.44	20.11	137.05	0.02	0.02	689	34975		
			8:59:01	29.31	20.11	137.05	0.02	0.02	689	35153		
			8:59:02	29.46	20.11	136.95	0.02	0.02	689	39148		
			8:59:03	29.49	20.11	136.95	0.02	0.02	689	34109		
			8:59:04	29.65	20.11	137.01	0.02	0.02	689	33775		
			8:59:05	29.81	20.11	137.10	0.02	0.02	689	33775		
			8:59:06	31.63	20.11	136.91	0.02	0.02	689	34450		
			8:59:07	33.11	20.11	136.81	0.02	0.02	689	35153		
			8:59:08	34.26	20.11	136.60	0.02	0.02	689	33447		
			8:59:09	34.93	20.11	136.70	0.02	0.02	689	38492		
			8:59:10	35.06	20.11	136.90	0.02	0.02	689	34450		
			8:59:11	34.89	20.11	137.10	0.02	0.02	689	36455		
			8:59:12	34.88	20.11	136.91	0.02	0.02	689	34975		
			8:59:13	34.93	20.11	136.77	0.02	0.02	689	39148		

**TABLE D-21**

Profile PRO-15 on September 21, 2022 (0854-0905 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

329	Instantaneous Minimum Dilution in Profile
1432	Minimum Average Dilution in Profile
3651	Plume Average Dilution Detected
17024	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			8:59:14	34.91	20.11	136.68	0.02	0.02	689	36455		
			8:59:15	34.86	20.11	136.93	0.02	0.02	689	33447		
			8:59:16	35.02	20.11	137.16	0.02	0.02	689	36649		
			8:59:17	34.86	20.11	136.99	0.02	0.02	689	37243		
			8:59:18	34.84	20.11	136.84	0.02	0.02	689	38066		
			8:59:19	34.80	20.11	136.86	0.02	0.02	689	38066		
			8:59:20	34.82	20.11	136.81	0.02	0.02	689	34975		
			8:59:21	34.66	20.11	136.54	0.02	0.02	689	35515	34303	No plume detected at 35 ft
			8:59:22	34.98	20.11	136.63	0.02	0.02	689	38492		
			8:59:23	34.76	20.11	137.10	0.02	0.02	689	35699		
			8:59:24	34.71	20.11	136.97	0.02	0.02	689	36455		
			8:59:25	34.80	20.11	136.85	0.02	0.02	689	39598		
			8:59:26	34.85	20.11	136.64	0.02	0.02	689	34450		
			8:59:27	34.57	20.11	136.47	0.02	0.02	689	33775		
			8:59:28	34.84	20.11	136.55	0.02	0.02	689	36845		
			8:59:29	34.80	20.11	136.68	0.02	0.02	689	35699		
			8:59:30	34.54	20.11	136.83	0.02	0.02	689	37243		
			8:59:31	34.84	20.11	136.77	0.02	0.02	689	38066		
			8:59:32	34.91	20.11	136.84	0.02	0.02	689	35515		
			8:59:33	34.50	20.11	136.47	0.02	0.02	689	32196		
			8:59:34	34.84	20.11	136.40	0.02	0.02	689	35699		
			8:59:35	34.98	20.11	136.16	0.02	0.02	689	32810		
			8:59:36	34.39	20.11	136.14	0.02	0.02	689	39371		
			8:59:37	34.71	20.11	136.29	0.02	0.02	689	33775		
			8:59:38	34.82	20.11	136.79	0.02	0.02	689	36073		
			8:59:39	34.37	20.11	136.79	0.02	0.02	689	40529		
			8:59:40	34.70	20.11	136.85	0.02	0.02	689	34798		
			8:59:41	34.68	20.11	136.93	0.02	0.02	689	35153		
			8:59:42	34.41	20.11	136.99	0.02	0.02	689	36845		
			8:59:43	34.88	20.11	137.01	0.02	0.02	689	38278		
			8:59:44	34.62	20.11	137.03	0.02	0.02	689	35333		
			8:59:45	34.64	20.11	137.13	0.02	0.02	689	34450		
			8:59:46	34.75	20.11	137.46	0.05	0.05	689	12596		
			8:59:47	34.58	20.11	137.48	0.03	0.03	689	22815		
			8:59:48	34.90	20.11	137.29	0.02	0.02	689	38066		
			8:59:49	34.86	20.11	137.33	0.02	0.02	689	37650		
			8:59:50	34.80	20.11	137.18	0.02	0.02	689	34450		
			8:59:51	35.06	20.11	137.08	0.02	0.02	689	35515		
			8:59:52	35.01	20.11	137.29	0.03	0.03	689	20753		



**TABLE D-21**

Profile PRO-15 on September 21, 2022 (0854-0905 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

329	Instantaneous Minimum Dilution in Profile
1432	Minimum Average Dilution in Profile
3651	Plume Average Dilution Detected
17024	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			8:59:53	34.92	20.11	137.33	0.02	0.02	689	36845		
			8:59:54	35.16	20.11	136.81	0.02	0.02	689	33447		
			8:59:55	35.12	20.11	136.21	0.02	0.02	689	36073		
			8:59:56	35.17	20.11	136.40	0.02	0.02	689	37243		
			8:59:57	35.06	20.11	136.62	0.02	0.02	689	38492		
			8:59:58	35.29	20.11	136.64	0.02	0.02	689	38708		
			8:59:59	35.26	20.11	136.64	0.02	0.02	689	36455		
			9:00:00	35.04	20.11	136.74	0.02	0.02	689	36845		
			9:00:01	35.25	20.11	136.74	0.02	0.02	689	35153		
			9:00:02	35.27	20.11	136.96	0.02	0.02	689	34109		
			9:00:03	35.18	20.11	137.16	0.12	0.12	689	5629		
			9:00:04	35.20	20.11	137.22	0.02	0.02	689	31461		
			9:00:05	35.22	20.11	137.22	0.35	0.35	689	1959		
			9:00:06	35.21	20.11	136.72	0.02	0.02	689	36455		
			9:00:07	35.18	20.11	136.68	0.02	0.02	689	34798		
			9:00:08	35.08	20.11	137.40	0.02	0.02	689	37650		
			9:00:09	35.09	20.12	138.22	0.02	0.02	689	34109		
			9:00:10	34.96	20.12	137.81	0.02	0.02	689	36455		
			9:00:11	34.91	20.12	137.60	0.02	0.02	689	34109		
			9:00:12	34.89	20.11	137.39	0.02	0.02	689	36455		
			9:00:13	35.97	20.11	137.35	0.02	0.02	689	34798		
			9:00:14	38.86	20.11	137.01	0.02	0.02	689	34623		
			9:00:15	39.73	20.11	136.98	0.02	0.02	689	37243		
			9:00:16	39.68	20.11	137.03	0.02	0.02	689	36073		
			9:00:17	39.74	20.11	137.03	0.02	0.02	689	34623		
			9:00:18	39.54	20.11	137.05	0.08	0.08	689	8856		
			9:00:19	39.24	20.11	137.12	0.09	0.09	689	7314		
			9:00:20	39.49	20.11	137.05	0.07	0.07	689	10044		
			9:00:21	39.28	20.11	137.05	0.02	0.02	689	37243		
			9:00:22	39.18	20.11	137.05	0.02	0.02	689	34450		
			9:00:23	39.13	20.11	137.12	0.32	0.32	689	2125		
			9:00:24	39.21	20.11	137.56	1.16	0.66	689	1038	1432	Plume traces detected at 39 ft
			9:00:25	39.02	20.11	137.65	0.80	0.34	689	2022		
			9:00:26	38.99	20.11	137.37	2.76	2.10	689	329		
			9:00:27	38.97	20.11	137.10	0.42	0.42	689	1645		
			9:00:28	38.92	20.11	137.27	0.08	0.08	689	8517		
			9:00:29	38.88	20.11	137.27	0.02	0.02	689	38066		
			9:00:30	38.66	20.11	137.49	0.02	0.02	689	38066		
			9:00:31	38.71	20.11	137.27	0.04	0.04	689	19630		

**TABLE D-21**

Profile PRO-15 on September 21, 2022 (0854-0905 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

329	Instantaneous Minimum Dilution in Profile
1432	Minimum Average Dilution in Profile
3651	Plume Average Dilution Detected
17024	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:00:32	38.60	20.11	137.16	0.02	0.02	689	34450		
			9:00:33	38.56	20.11	137.81	0.02	0.02	689	38927		
			9:00:34	38.54	20.12	138.11	0.02	0.02	689	36845		
			9:00:35	38.41	20.12	137.98	0.02	0.02	689	36073		
			9:00:36	38.34	20.12	137.65	0.02	0.02	689	36455		
			9:00:37	38.30	20.11	137.31	0.02	0.02	689	38708		
			9:00:38	38.40	20.11	137.11	0.02	0.02	689	38492		
			9:00:39	38.16	20.11	137.03	0.02	0.02	689	36073		
			9:00:40	38.28	20.11	137.10	0.02	0.02	689	34975		
			9:00:41	38.19	20.11	137.58	0.02	0.02	689	37243		
			9:00:42	38.21	20.11	137.57	0.02	0.02	689	34450		
			9:00:43	38.21	20.11	136.93	0.02	0.02	689	38066		
			9:00:44	38.29	20.11	137.03	0.02	0.02	689	34450		
			9:00:45	38.22	20.11	136.76	0.02	0.02	689	34450		
			9:00:46	38.29	20.11	136.66	0.02	0.02	689	41506		
			9:00:47	38.26	20.11	136.89	0.02	0.02	689	34109		
			9:00:48	38.21	20.11	136.76	0.02	0.02	689	39371		
			9:00:49	38.28	20.11	136.89	0.02	0.02	689	35699		
			9:00:50	38.17	20.11	137.14	0.02	0.02	689	31318		
			9:00:51	38.16	20.11	137.01	0.04	0.04	689	18324		
			9:00:52	38.20	20.11	136.97	0.02	0.02	689	37650		
			9:00:53	38.10	20.11	136.95	0.02	0.02	689	37243		
			9:00:54	38.05	20.11	136.93	0.06	0.06	689	12238		
			9:00:55	38.13	20.11	137.03	0.04	0.04	689	18825		
			9:00:56	38.10	20.11	137.03	0.02	0.02	689	36455		
			9:00:57	38.12	20.11	137.01	0.02	0.02	689	34450		
			9:00:58	38.29	20.11	137.08	0.12	0.12	689	5960		
			9:00:59	38.24	20.11	137.12	0.22	0.22	689	3111		
			9:01:00	38.36	20.11	137.08	0.28	0.28	689	2429		
			9:01:01	38.34	20.11	136.98	0.88	0.41	689	1688	3831	Plume traces detected at 39 ft
			9:01:02	38.40	20.11	136.91	0.97	0.49	689	1398		
			9:01:03	38.55	20.11	137.05	0.08	0.08	689	8402		
			9:01:04	38.38	20.11	136.84	0.02	0.02	689	35699		
			9:01:05	38.40	20.11	136.80	0.07	0.07	689	9759		
			9:01:06	38.67	20.11	136.49	0.07	0.07	689	9899		
			9:01:07	38.46	20.11	136.43	0.02	0.02	689	38066		
			9:01:08	38.46	20.11	137.12	0.04	0.04	689	15379		
			9:01:09	38.71	20.11	137.31	0.13	0.13	689	5473		
			9:01:10	38.61	20.11	137.24	0.08	0.08	689	8444		

**TABLE D-21**

Profile PRO-15 on September 21, 2022 (0854-0905 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

329	Instantaneous Minimum Dilution in Profile
1432	Minimum Average Dilution in Profile
3651	Plume Average Dilution Detected
17024	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:01:11	38.50	20.11	137.29	0.02	0.02	689	37650		
			9:01:12	38.55	20.11	136.95	0.02	0.02	689	36845		
			9:01:13	38.67	20.11	136.86	0.02	0.02	689	36073		
			9:01:14	38.62	20.11	136.95	0.02	0.02	689	34109		
			9:01:15	38.50	20.11	136.87	0.02	0.02	689	37650		
			9:01:16	38.71	20.11	136.50	0.02	0.02	689	37243		
			9:01:17	38.76	20.11	136.57	0.02	0.02	689	38708		
			9:01:18	38.53	20.11	136.55	0.02	0.02	689	34798		
			9:01:19	38.55	20.11	136.30	0.02	0.02	689	36455		
			9:01:20	38.58	20.10	136.12	0.02	0.02	689	37243		
			9:01:21	38.69	20.10	136.38	0.02	0.02	689	36455		
			9:01:22	38.34	20.11	136.57	0.02	0.02	689	35333		
			9:01:23	38.36	20.11	136.62	0.02	0.02	689	36455		
			9:01:24	38.62	20.11	136.68	0.02	0.02	689	39148		
			9:01:25	38.34	20.11	136.67	0.02	0.02	689	36073		
			9:01:26	38.18	20.11	136.57	0.02	0.02	689	38066		
			9:01:27	38.53	20.11	136.62	0.02	0.02	689	40292		
			9:01:28	38.40	20.11	136.57	0.02	0.02	689	36073		
			9:01:29	38.32	20.11	136.38	0.02	0.02	689	36845		
			9:01:30	38.40	20.11	136.14	0.02	0.02	689	34109		
			9:01:31	38.53	20.11	136.10	0.02	0.02	689	36845		
			9:01:32	38.57	20.11	136.40	0.02	0.02	689	38066		
			9:01:33	38.38	20.11	136.55	0.02	0.02	689	38927		
			9:01:34	38.46	20.11	136.75	0.02	0.02	689	36455		
			9:01:35	38.53	20.11	136.70	0.02	0.02	689	36455		
			9:01:36	38.34	20.11	136.66	0.02	0.02	689	34975		
			9:01:37	38.35	20.11	136.64	0.02	0.02	689	34975		
			9:01:38	38.55	20.11	136.53	0.02	0.02	689	36845		
			9:01:39	38.54	20.11	136.54	0.02	0.02	689	39371		
			9:01:40	38.58	20.11	136.60	0.02	0.02	689	36455		
			9:01:41	38.58	20.11	136.53	0.02	0.02	689	38927		
			9:01:42	38.67	20.11	136.49	0.02	0.02	689	37243		
			9:01:43	38.73	20.11	136.55	0.02	0.02	689	34109		
			9:01:44	38.66	20.11	136.51	0.02	0.02	689	36455		
			9:01:45	39.06	20.11	136.36	0.02	0.02	689	38927		
			9:01:46	40.87	20.11	136.21	0.02	0.02	689	36073		
			9:01:47	41.71	20.10	136.18	0.02	0.02	689	37243		
			9:01:48	41.60	20.11	136.51	0.02	0.02	689	34450		
			9:01:49	41.77	20.11	136.47	0.02	0.02	689	35153		

**TABLE D-21**

Profile PRO-15 on September 21, 2022 (0854-0905 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

329	Instantaneous Minimum Dilution in Profile
1432	Minimum Average Dilution in Profile
3651	Plume Average Dilution Detected
17024	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:01:50	41.77	20.11	136.51	0.02	0.02	689	36073		
			9:01:51	41.82	20.11	136.49	0.02	0.02	689	35699		
			9:01:52	41.85	20.11	136.12	0.02	0.02	689	34450		
			9:01:53	41.86	20.10	136.05	0.02	0.02	689	38066		
			9:01:54	41.94	20.10	136.28	0.02	0.02	689	35699		
			9:01:55	41.87	20.11	136.42	0.02	0.02	689	35153		
			9:01:56	42.00	20.11	136.40	0.02	0.02	689	33447		
			9:01:57	42.04	20.11	136.17	0.02	0.02	689	35515		
			9:01:58	41.99	20.10	136.17	0.02	0.02	689	35333		
			9:01:59	41.89	20.10	136.10	0.02	0.02	689	34109		
			9:02:00	41.82	20.11	136.47	0.02	0.02	689	39148		
			9:02:01	41.83	20.11	136.40	0.02	0.02	689	35333		
			9:02:02	41.80	20.11	136.48	0.02	0.02	689	38066		
			9:02:03	41.90	20.11	136.21	0.02	0.02	689	38927		
			9:02:04	41.90	20.10	136.10	0.02	0.02	689	38927		
			9:02:05	41.92	20.10	136.30	0.02	0.02	689	36073		
			9:02:06	41.91	20.11	136.36	0.02	0.02	689	38492		
			9:02:07	41.92	20.11	136.36	0.02	0.02	689	35699		
			9:02:08	41.99	20.11	136.36	0.02	0.02	689	35699		
			9:02:09	42.04	20.10	136.11	0.02	0.02	689	37243		
			9:02:10	42.00	20.10	136.24	0.02	0.02	689	38066		
			9:02:11	42.09	20.10	136.24	0.02	0.02	689	36455		
			9:02:12	42.14	20.10	136.18	0.02	0.02	689	34109		
			9:02:13	42.18	20.10	136.43	0.02	0.02	689	39371		
			9:02:14	42.18	20.11	136.36	0.02	0.02	689	41506		
			9:02:15	42.30	20.10	136.30	0.02	0.02	689	35333		
			9:02:16	42.31	20.10	136.15	0.02	0.02	689	35333		
			9:02:17	42.24	20.10	136.07	0.02	0.02	689	35333		
			9:02:18	42.29	20.10	136.12	0.02	0.02	689	38492		
			9:02:19	42.21	20.10	136.15	0.02	0.02	689	38492		
			9:02:20	42.29	20.10	135.82	0.02	0.02	689	36845		
			9:02:21	42.32	20.10	135.25	0.02	0.02	689	34623		
			9:02:22	42.22	20.10	135.23	0.02	0.02	689	34975		
			9:02:23	42.25	20.10	135.38	0.02	0.02	689	39598		
			9:02:24	42.20	20.10	135.11	0.02	0.02	689	35153		
			9:02:25	42.14	20.10	134.96	0.02	0.02	689	40058		
			9:02:26	42.02	20.10	134.99	0.02	0.02	689	36845		
			9:02:27	42.09	20.10	135.33	0.02	0.02	689	35699		
			9:02:28	42.00	20.10	135.44	0.08	0.08	689	8423		

**TABLE D-21**

Profile PRO-15 on September 21, 2022 (0854-0905 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

329	Instantaneous Minimum Dilution in Profile
1432	Minimum Average Dilution in Profile
3651	Plume Average Dilution Detected
17024	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			9:02:29	41.90	20.10	135.42	0.02	0.02	689	36073		
			9:02:30	41.71	20.10	135.61	0.02	0.02	689	35699		
			9:02:31	41.54	20.10	136.04	0.02	0.02	689	34450		
			9:02:32	41.27	20.10	136.08	0.02	0.02	689	36845		
			9:02:33	40.92	20.10	136.17	0.02	0.02	689	35333		
			9:02:34	40.86	20.10	136.11	0.02	0.02	689	34798		
			9:02:35	40.55	20.10	136.06	0.02	0.02	689	34109		
			9:02:36	40.35	20.10	135.76	0.02	0.02	689	36073		
			9:02:37	40.24	20.10	135.82	0.15	0.15	689	4630		
			9:02:38	40.14	20.10	136.02	0.02	0.02	689	38492		
			9:02:39	40.03	20.10	136.28	0.02	0.02	689	35699		
			9:02:40	40.05	20.11	136.83	0.02	0.02	689	35153		
			9:02:41	40.13	20.11	137.40	0.02	0.02	689	38066		
			9:02:42	40.22	20.11	137.27	0.02	0.02	689	38492		
			9:02:43	40.20	20.11	136.66	0.05	0.05	689	13149		
			9:02:44	40.42	20.11	136.70	0.02	0.02	689	35699		
			9:02:45	40.55	20.11	136.53	0.04	0.04	689	17532		
			9:02:46	40.61	20.11	136.45	0.02	0.02	689	33125		
			9:02:47	40.84	20.11	136.45	0.02	0.02	689	36845		
			9:02:48	41.02	20.11	136.69	0.02	0.02	689	36455		
			9:02:49	41.22	20.11	137.21	0.02	0.02	689	35699		
			9:02:50	41.32	20.11	137.46	0.02	0.02	689	40292		
			9:02:51	41.78	20.11	137.22	0.02	0.02	689	38066		
			9:02:52	42.09	20.11	137.10	0.23	0.23	689	3021		
			9:02:53	42.43	20.11	137.10	0.25	0.25	689	2768	4563	Plume traces detected at 43 ft
			9:02:54	42.79	20.11	137.01	0.09	0.09	689	7901		
			9:02:55	43.10	20.11	136.91	0.02	0.02	689	36455		
			9:02:56	43.28	20.11	136.96	0.02	0.02	689	38492		
			9:02:57	43.47	20.11	136.95	0.03	0.03	689	20205		
			9:02:58	43.58	20.11	137.01	0.02	0.02	689	36455		
			9:02:59	43.61	20.11	137.03	0.02	0.02	689	36455		
			9:03:00	43.60	20.11	137.10	0.09	0.09	689	7673		
			9:03:01	43.64	20.11	137.16	0.04	0.04	689	15624		
			9:03:02	43.60	20.11	137.22	0.02	0.02	689	38492		
			9:03:03	43.59	20.11	137.24	0.02	0.02	689	35699		
			9:03:04	43.63	20.11	137.19	0.02	0.02	689	34975		
			9:03:05	43.60	20.11	137.20	0.02	0.02	689	34798		
			9:03:06	43.61	20.11	137.18	0.02	0.02	689	34450		
			9:03:07	43.60	20.11	137.22	0.02	0.02	689	38066		

**TABLE D-21**

Profile PRO-15 on September 21, 2022 (0854-0905 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

329	Instantaneous Minimum Dilution in Profile
1432	Minimum Average Dilution in Profile
3651	Plume Average Dilution Detected
17024	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:03:08	43.61	20.11	137.39	0.02	0.02	689	35333		
			9:03:09	43.61	20.11	137.37	0.02	0.02	689	37650		
			9:03:10	43.60	20.11	137.35	0.02	0.02	689	40292		
			9:03:11	43.53	20.11	137.18	0.02	0.02	689	37243		
			9:03:12	43.55	20.11	137.17	0.02	0.02	689	35699		
			9:03:13	43.59	20.11	137.18	0.02	0.02	689	37243		
			9:03:14	43.55	20.11	137.31	0.02	0.02	689	35699		
			9:03:15	43.55	20.11	137.35	0.05	0.05	689	12712		
			9:03:16	43.57	20.11	137.35	0.02	0.02	689	34798		
			9:03:17	43.56	20.11	137.27	0.02	0.02	689	37243		
			9:03:18	43.58	20.11	137.18	0.02	0.02	689	40058		
			9:03:19	43.55	20.11	137.09	0.02	0.02	689	43333		
			9:03:20	43.61	20.11	137.10	0.02	0.02	689	38492		
			9:03:21	43.55	20.11	137.10	0.02	0.02	689	34109		
			9:03:22	43.61	20.11	137.18	0.03	0.03	689	22815		
			9:03:23	43.64	20.11	137.16	0.38	0.38	689	1812		
			9:03:24	43.59	20.11	137.14	0.23	0.23	689	2937		
			9:03:25	43.64	20.11	137.10	0.02	0.02	689	35153		
			9:03:26	43.65	20.11	137.12	0.02	0.02	689	37650		
			9:03:27	43.70	20.11	137.07	0.02	0.02	689	37243		
			9:03:28	43.51	20.11	137.29	0.21	0.21	689	3324		
			9:03:29	43.60	20.11	137.57	0.02	0.02	689	34450		
			9:03:30	43.62	20.11	137.58	0.02	0.02	689	34798		
			9:03:31	43.56	20.11	137.60	0.22	0.22	689	3163		
			9:03:32	43.54	20.11	137.54	0.05	0.05	689	14265		
			9:03:33	43.64	20.11	137.33	0.06	0.06	689	11818		
			9:03:34	43.64	20.11	137.24	0.29	0.29	689	2355	4638	Plume traces detected at 43 ft
			9:03:35	43.54	20.11	137.46	0.53	0.10	689	6922		
			9:03:36	43.54	20.11	137.51	0.02	0.02	689	39371		
			9:03:37	43.54	20.11	137.73	0.07	0.07	689	9759		
			9:03:38	43.43	20.12	138.65	0.13	0.13	689	5123		
			9:03:39	43.37	20.12	138.67	0.04	0.04	689	15659		
			9:03:40	43.35	20.12	138.20	0.03	0.03	689	20087		
			9:03:41	43.41	20.11	137.69	0.20	0.20	689	3447	3759	Plume traces detected at 43 ft
			9:03:42	43.21	20.11	137.77	0.17	0.17	689	4072		
			9:03:43	43.15	20.11	137.99	0.05	0.05	689	13725		
			9:03:44	43.22	20.12	138.27	0.03	0.03	689	20087		
			9:03:45	43.22	20.12	138.27	0.06	0.06	689	11258		
			9:03:46	43.18	20.12	138.18	0.17	0.17	689	4003	4210	Plume traces detected at 43 ft

**TABLE D-21**

Profile PRO-15 on September 21, 2022 (0854-0905 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

329	Instantaneous Minimum Dilution in Profile
1432	Minimum Average Dilution in Profile
3651	Plume Average Dilution Detected
17024	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:03:47	43.28	20.12	138.11	0.16	0.16	689	4417		
			9:03:48	43.29	20.12	138.31	0.05	0.05	689	13590		
			9:03:49	43.27	20.12	138.19	0.05	0.05	689	14817		
			9:03:50	43.19	20.12	138.08	0.02	0.02	689	33447		
			9:03:51	43.28	20.12	138.20	0.11	0.11	689	6174		
			9:03:52	43.28	20.12	138.06	0.02	0.02	689	34623		
			9:03:53	43.31	20.12	138.00	0.02	0.02	689	28238		
			9:03:54	43.34	20.11	137.87	0.02	0.02	689	36455		
			9:03:55	43.45	20.12	138.15	0.02	0.02	689	34975		
			9:03:56	43.45	20.12	138.11	0.08	0.08	689	8833		
			9:03:57	43.61	20.12	137.99	0.03	0.03	689	21804		
			9:03:58	43.60	20.11	137.98	0.02	0.02	689	36073		
			9:03:59	43.59	20.12	138.11	0.02	0.02	689	34975		
			9:04:00	43.67	20.12	138.18	0.05	0.05	689	14119		
			9:04:01	43.64	20.12	138.27	0.28	0.28	689	2444		
			9:04:02	43.62	20.12	138.30	0.11	0.11	689	6258	3546	Plume traces detected at 43 ft
			9:04:03	43.67	20.12	138.38	0.40	0.40	689	1719		
			9:04:04	43.64	20.12	138.48	0.18	0.18	689	3763		
			9:04:05	43.57	20.12	138.52	0.02	0.02	689	33775		
			9:04:06	43.62	20.12	138.65	0.03	0.03	689	22154		
			9:04:07	43.65	20.12	138.69	0.19	0.19	689	3615		
			9:04:08	43.63	20.12	138.80	0.02	0.02	689	38066		
			9:04:09	43.67	20.12	139.02	0.21	0.21	689	3341		
			9:04:10	43.64	20.12	139.17	0.74	0.28	689	2447	2894	Plume traces detected at 43 ft
			9:04:11	43.70	20.12	139.15	0.24	0.24	689	2894		
			9:04:12	43.67	20.12	139.30	0.44	0.02	689	38700		
			9:04:13	43.65	20.12	139.21	0.31	0.31	689	2211		
			9:04:14	43.66	20.12	139.17	0.10	0.10	689	7002		
			9:04:15	43.72	20.12	139.19	0.27	0.27	689	2595		
			9:04:16	43.71	20.12	139.17	0.14	0.14	689	4862		
			9:04:17	43.61	20.12	139.19	0.35	0.35	689	1976	3987	Plume traces detected at 43 ft
			9:04:18	43.69	20.12	139.19	0.50	0.07	689	9752		
			9:04:19	43.75	20.12	139.04	0.41	0.41	689	1697		
			9:04:20	43.66	20.12	139.06	0.79	0.33	689	2074		
			9:04:21	43.68	20.12	139.21	0.60	0.16	689	4372		
			9:04:22	43.75	20.12	139.23	0.27	0.27	689	2517		
			9:04:23	43.78	20.12	139.11	0.11	0.11	689	6012		
			9:04:24	43.65	20.12	139.11	0.12	0.12	689	5643		
			9:04:25	43.70	20.12	139.00	0.61	0.17	689	4022		

**TABLE D-21**

Profile PRO-15 on September 21, 2022 (0854-0905 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

329	Instantaneous Minimum Dilution in Profile
1432	Minimum Average Dilution in Profile
3651	Plume Average Dilution Detected
17024	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:04:26	43.77	20.12	139.06	0.33	0.33	689	2083		
			9:04:27	43.73	20.12	139.04	0.25	0.25	689	2775		
			9:04:28	43.74	20.12	139.04	0.20	0.20	689	3490		
			9:04:29	43.78	20.12	139.06	0.15	0.15	689	4687		
			9:04:30	43.79	20.12	139.04	0.46	0.04	689	18136		
			9:04:31	43.77	20.12	139.04	0.48	0.05	689	12663		
			9:04:32	43.79	20.12	139.04	0.30	0.30	689	2320		
			9:04:33	43.78	20.12	138.84	0.13	0.13	689	5220		
			9:04:34	43.79	20.12	138.61	0.47	0.04	689	15820		
			9:04:35	43.75	20.12	138.50	0.20	0.20	689	3397		
			9:04:36	43.80	20.12	137.73	0.04	0.04	689	16563		
			9:04:37	43.84	20.11	137.52	0.02	0.02	689	36455		
			9:04:38	43.81	20.11	137.85	0.02	0.02	689	36845		
			9:04:39	43.79	20.12	138.54	0.02	0.02	689	36845		
			9:04:40	43.82	20.12	137.84	0.02	0.02	689	37243		
			9:04:41	43.81	20.11	136.98	0.02	0.02	689	38066		
			9:04:42	43.81	20.11	136.60	0.02	0.02	689	33125		
			9:04:43	43.81	20.11	137.35	0.02	0.02	689	35699		
			9:04:44	43.86	20.11	137.14	0.02	0.02	689	38927		
			9:04:45	43.90	20.11	137.31	0.02	0.02	689	36073		
			9:04:46	43.85	20.11	137.43	0.02	0.02	689	36455		
			9:04:47	43.80	20.11	137.79	0.02	0.02	689	36455		
			9:04:48	43.87	20.12	138.21	0.03	0.03	689	20265		
			9:04:49	43.88	20.12	138.33	0.02	0.02	689	36073		
			9:04:50	43.73	20.12	138.39	0.02	0.02	689	35153		
			9:04:51	43.85	20.12	138.39	0.02	0.02	689	36073		
			9:04:52	43.92	20.12	138.39	0.02	0.02	689	37243		
			9:04:53	43.80	20.12	138.33	0.05	0.05	689	14148		
			9:04:54	43.80	20.12	138.20	0.02	0.02	689	39371		
			9:04:55	43.89	20.12	137.97	0.02	0.02	689	35153		
			9:04:56	43.92	20.11	137.62	0.02	0.02	689	40058		
			9:04:57	43.82	20.11	137.68	0.06	0.06	689	11370		
			9:04:58	43.80	20.11	137.64	0.02	0.02	689	38066		
			9:04:59	43.89	20.11	137.67	0.02	0.02	689	37650		
			9:05:00	43.78	20.11	137.24	0.02	0.02	689	37650		
			9:05:01	43.75	20.11	136.97	0.02	0.02	689	35515		
			9:05:02	43.76	20.11	137.05	0.44	0.01	689	47570		
			9:05:03	43.78	20.11	137.16	0.15	0.15	689	4471		
			9:05:04	43.73	20.11	137.05	0.02	0.02	689	28471		



**TABLE D-21**

Profile PRO-15 on September 21, 2022 (0854-0905 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

329	Instantaneous Minimum Dilution in Profile
1432	Minimum Average Dilution in Profile
3651	Plume Average Dilution Detected
17024	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:05:05	43.69	20.11	136.85	0.02	0.02	689	35333		
			9:05:06	43.80	20.11	136.93	0.02	0.02	689	35153		
			9:05:07	43.90	20.11	137.10	0.02	0.02	689	36073		
			9:05:08	43.96	20.11	137.43	0.03	0.03	689	21265		
			9:05:09	43.95	20.11	137.51	0.02	0.02	689	34450		
			9:05:10	43.99	20.11	137.46	0.06	0.06	689	11778		
			9:05:11	44.03	20.11	137.39	0.02	0.02	689	37650		
			9:05:12	44.01	20.11	137.29	0.02	0.02	689	38066		
			9:05:13	44.00	20.11	137.14	0.02	0.02	689	38492		
			9:05:14	44.03	20.11	137.16	0.02	0.02	689	36455		
			9:05:15	44.04	20.11	137.18	0.02	0.02	689	36455		
			9:05:16	43.99	20.11	137.08	0.02	0.02	689	36455		
			9:05:17	44.00	20.11	136.60	0.02	0.02	689	35515		
			9:05:18	43.82	20.10	136.45	0.02	0.02	689	33775		
			9:05:19	43.72	20.10	136.12	0.02	0.02	689	35333		
			9:05:20	43.66	20.10	135.93	0.03	0.03	689	21006		
			9:05:21	43.53	20.10	135.88	0.02	0.02	689	38927		
			9:05:22	43.48	20.10	135.39	0.02	0.02	689	33125		
			9:05:23	43.37	20.10	135.19	0.02	0.02	689	38492		
			9:05:24	43.23	20.09	134.81	0.25	0.25	689	2774		
			9:05:25	43.19	20.09	134.87	0.02	0.02	689	37243		
			9:05:26	43.17	20.09	134.47	0.02	0.02	689	34450		
			9:05:27	43.09	20.09	133.99	0.02	0.02	689	36455		
			9:05:28	43.04	20.09	134.10	0.02	0.02	689	36073		
			9:05:29	42.99	20.09	133.96	0.02	0.02	689	37650		
			9:05:30	42.92	20.09	133.72	0.02	0.02	689	36845		
			9:05:31	42.89	20.09	133.70	0.02	0.02	689	36845		
			9:05:32	42.80	20.09	133.83	0.02	0.02	689	36455		
			9:05:33	42.79	20.09	133.81	0.02	0.02	689	36455		
			9:05:34	42.73	20.09	133.89	0.02	0.02	689	33125		
			9:05:35	42.65	20.09	133.79	0.02	0.02	689	31898		
			9:05:36	42.63	20.09	133.70	0.02	0.02	689	34450		
			9:05:37	42.63	20.09	133.68	0.02	0.02	689	40292		

**TABLE D-22**

Profile PRO-16 on September 21, 2022 (0917-0930 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

24	Instantaneous Minimum Dilution in Profile
43	Minimum Average Dilution in Profile
66	Plume Average Dilution Detected
8989	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-16 (North Acute Zone Boundary - 24 ft from Diffuser) and downstream of offshore portion of diffuser (West)	48 ft	0.50 m/sec 347 deg. (mag.) Ebb Tide	9:17:12	1.69	20.05	137.27	0.24	0.24	745	3071	31380	No plume near surface
			9:17:13	2.19	20.03	136.59	0.36	0.36	745	2051		
			9:17:14	2.31	19.77	135.80	0.49	0.06	745	11975		
			9:17:15	2.39	19.65	135.33	0.33	0.33	745	2263		
			9:17:16	2.36	19.46	135.13	0.08	0.08	745	8837		
			9:17:17	2.40	19.55	135.02	0.04	0.04	745	16855		
			9:17:18	2.45	19.73	135.73	0.17	0.17	745	4464		
			9:17:19	2.40	19.88	136.04	0.08	0.08	745	9348		
			9:17:20	2.41	19.95	136.24	0.02	0.02	745	40710		
			9:17:21	2.43	19.99	136.36	0.10	0.10	745	7191		
			9:17:22	2.39	19.95	135.53	0.08	0.08	745	8817		
			9:17:23	2.39	19.91	136.69	0.02	0.02	745	38601		
			9:17:24	2.45	19.97	136.02	0.02	0.02	745	39418		
			9:17:25	2.39	20.01	136.76	0.04	0.04	745	20355		
			9:17:26	2.40	20.03	136.75	0.02	0.02	745	42816		
			9:17:27	2.41	20.01	136.67	0.02	0.02	745	42330		
			9:17:28	2.44	20.04	137.10	0.02	0.02	745	36881		
			9:17:29	2.40	20.03	137.12	0.02	0.02	745	36881		
			9:17:30	2.43	20.05	137.12	0.02	0.02	745	39005		
			9:17:31	2.43	20.03	137.26	0.02	0.02	745	38205		
			9:17:32	2.45	20.05	137.50	0.02	0.02	745	34813		
			9:17:33	2.45	20.03	136.92	0.02	0.02	745	38205		
			9:17:34	2.42	20.04	137.60	0.02	0.02	745	41160		
			9:17:35	2.43	20.04	137.04	0.02	0.02	745	35817		
			9:17:36	2.42	20.03	137.19	0.02	0.02	745	38205		
			9:17:37	2.41	20.05	137.59	0.02	0.02	745	41160		
			9:17:38	2.40	20.05	137.17	0.02	0.02	745	45988		
			9:17:39	2.42	20.05	137.47	0.02	0.02	745	37250		
			9:17:40	2.42	20.06	137.18	0.02	0.02	745	41160		
			9:17:41	2.41	20.05	137.25	0.02	0.02	745	40710		
9:17:42	2.40	20.05	136.55	0.02	0.02	745	37250					
9:17:43	2.40	20.01	136.43	0.02	0.02	745	40710					
9:17:44	2.40	19.98	136.32	0.02	0.02	745	36520					
9:17:45	2.40	19.97	136.26	0.02	0.02	745	38601					
9:17:46	2.43	19.95	136.12	0.02	0.02	745	39005					
9:17:47	2.42	19.94	136.08	0.02	0.02	745	39840					
9:17:48	2.43	19.93	136.26	0.02	0.02	745	38402					
9:17:49	2.37	19.93	136.36	0.02	0.02	745	39418					
9:17:50	2.46	19.93	135.90	0.02	0.02	745	39418					

**TABLE D-22**

Profile PRO-16 on September 21, 2022 (0917-0930 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

24	Instantaneous Minimum Dilution in Profile
43	Minimum Average Dilution in Profile
66	Plume Average Dilution Detected
8989	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:17:51	2.44	19.92	136.16	0.02	0.02	745	39418		
			9:17:52	2.46	19.91	136.06	0.02	0.02	745	38205		
			9:17:53	2.45	19.90	136.04	0.02	0.02	745	38601		
			9:17:54	2.52	19.96	138.32	0.02	0.02	745	39418		
			9:17:55	3.04	20.09	138.55	0.02	0.02	745	38402		
			9:17:56	6.14	20.11	138.65	0.02	0.02	745	38205		
			9:17:57	7.74	20.11	138.69	0.02	0.02	745	39005		
			9:17:58	7.95	20.11	138.73	0.02	0.02	745	38205		
			9:17:59	7.95	20.11	138.65	0.02	0.02	745	39840		
			9:18:00	8.11	20.11	138.61	0.02	0.02	745	36520		
			9:18:01	8.15	20.11	138.50	0.02	0.02	745	38601		
			9:18:02	8.20	20.11	138.44	0.02	0.02	745	39005		
			9:18:03	8.04	20.11	138.27	0.02	0.02	745	39005	39283	No plume at 7-8 ft
			9:18:04	8.04	20.10	138.21	0.02	0.02	745	37817		
			9:18:05	7.84	20.10	138.46	0.02	0.02	745	40710		
			9:18:06	7.84	20.11	138.69	0.02	0.02	745	38010		
			9:18:07	7.75	20.11	138.82	0.02	0.02	745	36520		
			9:18:08	7.82	20.11	138.80	0.02	0.02	745	39418		
			9:18:09	7.76	20.11	138.78	0.02	0.02	745	39840		
			9:18:10	7.79	20.11	138.44	0.02	0.02	745	39418		
			9:18:11	7.73	20.10	138.18	0.02	0.02	745	42571		
			9:18:12	7.78	20.10	138.36	0.02	0.02	745	41620		
			9:18:13	7.78	20.11	138.90	0.02	0.02	745	40710		
			9:18:14	7.72	20.12	139.28	0.02	0.02	745	39005		
			9:18:15	7.73	20.14	139.40	0.02	0.02	745	38010		
			9:18:16	7.69	20.14	139.68	0.02	0.02	745	39840		
			9:18:17	7.77	20.14	139.72	0.02	0.02	745	40270		
			9:18:18	7.66	20.14	139.94	0.02	0.02	745	39005		
			9:18:19	7.67	20.13	139.93	0.02	0.02	745	39840		
			9:18:20	7.79	20.13	139.69	0.02	0.02	745	42571		
			9:18:21	7.69	20.13	139.82	0.02	0.02	745	37250		
			9:18:22	7.67	20.13	139.82	0.02	0.02	745	36520		
			9:18:23	7.71	20.13	139.72	0.02	0.02	745	41160		
			9:18:24	7.73	20.13	139.64	0.02	0.02	745	38601		
			9:18:25	7.71	20.13	139.55	0.02	0.02	745	39840		
			9:18:26	7.73	20.13	139.59	0.02	0.02	745	41620		
			9:18:27	7.81	20.13	139.51	0.02	0.02	745	37437		
			9:18:28	7.81	20.13	139.38	0.02	0.02	745	40710		
			9:18:29	7.72	20.12	139.32	0.02	0.02	745	38802		

**TABLE D-22**

Profile PRO-16 on September 21, 2022 (0917-0930 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

24	Instantaneous Minimum Dilution in Profile
43	Minimum Average Dilution in Profile
66	Plume Average Dilution Detected
8989	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:18:30	7.78	20.12	139.47	0.02	0.02	745	38601		
			9:18:31	7.83	20.12	139.47	0.02	0.02	745	39005		
			9:18:32	7.79	20.12	139.61	0.02	0.02	745	37250		
			9:18:33	7.75	20.12	139.01	0.02	0.02	745	38205		
			9:18:34	7.78	20.11	138.95	0.02	0.02	745	37817		
			9:18:35	7.77	20.11	138.67	0.02	0.02	745	38601		
			9:18:36	7.92	20.11	139.04	0.02	0.02	745	39418		
			9:18:37	8.08	20.12	139.28	0.02	0.02	745	42090		
			9:18:38	8.18	20.12	139.32	0.02	0.02	745	40710		
			9:18:39	8.24	20.12	139.23	0.02	0.02	745	37817		
			9:18:40	8.75	20.12	139.16	0.02	0.02	745	41620		
			9:18:41	11.22	20.12	139.11	0.02	0.02	745	35817		
			9:18:42	13.30	20.11	138.93	0.02	0.02	745	37437		
			9:18:43	13.53	20.11	138.87	0.02	0.02	745	37437		
			9:18:44	13.61	20.12	139.21	0.02	0.02	745	37626		
			9:18:45	13.68	20.13	139.61	0.02	0.02	745	36881		
			9:18:46	13.65	20.13	139.72	0.02	0.02	745	41620		
			9:18:47	13.61	20.13	139.21	0.02	0.02	745	43314	39281	No plume at 13-14 ft
			9:18:48	13.58	20.12	138.61	0.02	0.02	745	40270		
			9:18:49	13.68	20.11	138.67	0.02	0.02	745	40270		
			9:18:50	13.73	20.11	138.89	0.02	0.02	745	37817		
			9:18:51	13.62	20.12	139.59	0.02	0.02	745	40710		
			9:18:52	13.63	20.12	139.52	0.02	0.02	745	37626		
			9:18:53	13.66	20.12	139.17	0.02	0.02	745	39840		
			9:18:54	13.65	20.12	139.13	0.02	0.02	745	36881		
			9:18:55	13.58	20.11	139.21	0.02	0.02	745	35476		
			9:18:56	13.67	20.12	139.47	0.02	0.02	745	40270		
			9:18:57	13.66	20.12	138.68	0.02	0.02	745	38601		
			9:18:58	13.65	20.11	138.00	0.02	0.02	745	39840		
			9:18:59	13.60	20.10	137.96	0.02	0.02	745	37437		
			9:19:00	13.64	20.10	137.96	0.02	0.02	745	39418		
			9:19:01	13.75	20.11	138.06	0.02	0.02	745	39840		
			9:19:02	13.71	20.11	138.01	0.02	0.02	745	38205		
			9:19:03	13.74	20.10	137.83	0.02	0.02	745	37437		
			9:19:04	13.78	20.10	137.81	0.02	0.02	745	40710		
			9:19:05	13.77	20.10	137.89	0.02	0.02	745	41160		
			9:19:06	13.73	20.10	137.87	0.02	0.02	745	38601		
			9:19:07	13.75	20.10	137.85	0.02	0.02	745	41620		
			9:19:08	13.81	20.10	138.06	0.02	0.02	745	37817		

**TABLE D-22**

Profile PRO-16 on September 21, 2022 (0917-0930 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

24	Instantaneous Minimum Dilution in Profile
43	Minimum Average Dilution in Profile
66	Plume Average Dilution Detected
8989	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			9:19:09	13.80	20.11	138.01	0.02	0.02	745	41160		
			9:19:10	13.72	20.10	137.81	0.02	0.02	745	38601		
			9:19:11	13.78	20.10	137.77	0.02	0.02	745	38205		
			9:19:12	13.82	20.10	137.77	0.02	0.02	745	37626		
			9:19:13	13.73	20.10	137.81	0.02	0.02	745	36881		
			9:19:14	13.71	20.10	138.23	0.02	0.02	745	37626		
			9:19:15	13.74	20.11	138.14	0.02	0.02	745	41854		
			9:19:16	13.77	20.11	138.06	0.02	0.02	745	40270		
			9:19:17	13.64	20.11	138.01	0.02	0.02	745	36881		
			9:19:18	13.70	20.10	137.85	0.02	0.02	745	42816		
			9:19:19	13.75	20.10	137.91	0.02	0.02	745	40710		
			9:19:20	13.76	20.10	137.96	0.02	0.02	745	38010		
			9:19:21	13.72	20.11	138.39	0.02	0.02	745	36881		
			9:19:22	13.71	20.11	137.91	0.02	0.02	745	36520		
			9:19:23	13.71	20.10	137.75	0.02	0.02	745	39840		
			9:19:24	13.74	20.10	137.92	0.02	0.02	745	39418		
			9:19:25	13.72	20.10	138.06	0.02	0.02	745	41620		
			9:19:26	13.70	20.11	138.20	0.02	0.02	745	42090		
			9:19:27	13.72	20.10	137.81	0.02	0.02	745	42571		
			9:19:28	13.66	20.11	138.85	0.02	0.02	745	41620		
			9:19:29	13.68	20.11	138.77	0.02	0.02	745	39840		
			9:19:30	13.74	20.11	138.14	0.02	0.02	745	40270		
			9:19:31	13.69	20.11	138.06	0.02	0.02	745	39005		
			9:19:32	13.69	20.11	138.28	0.02	0.02	745	40270		
			9:19:33	13.78	20.11	138.75	0.02	0.02	745	41620		
			9:19:34	13.70	20.11	138.80	0.02	0.02	745	35817		
			9:19:35	14.27	20.11	138.82	0.02	0.02	745	39005		
			9:19:36	17.38	20.11	137.91	0.02	0.02	745	37817		
			9:19:37	18.84	20.10	138.10	0.02	0.02	745	41160		
			9:19:38	19.05	20.11	138.75	0.02	0.02	745	36165		
			9:19:39	19.05	20.11	139.10	0.02	0.02	745	39418		
			9:19:40	18.99	20.12	139.21	0.02	0.02	745	39418		
			9:19:41	18.94	20.12	139.28	0.02	0.02	745	43824		
			9:19:42	19.05	20.12	139.34	0.02	0.02	745	37626		
			9:19:43	18.98	20.12	139.36	0.02	0.02	745	35817	39533	No plume at 18-19 ft
			9:19:44	18.95	20.12	139.53	0.02	0.02	745	39005		
			9:19:45	18.96	20.12	139.71	0.02	0.02	745	35817		
			9:19:46	19.00	20.12	139.68	0.02	0.02	745	40270		
			9:19:47	18.98	20.12	139.57	0.02	0.02	745	42090		

**TABLE D-22**

Profile PRO-16 on September 21, 2022 (0917-0930 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

24	Instantaneous Minimum Dilution in Profile
43	Minimum Average Dilution in Profile
66	Plume Average Dilution Detected
8989	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:19:48	19.02	20.12	139.59	0.02	0.02	745	41854		
			9:19:49	19.00	20.12	139.64	0.02	0.02	745	39418		
			9:19:50	18.99	20.12	139.68	0.02	0.02	745	39840		
			9:19:51	18.94	20.12	139.56	0.02	0.02	745	39005		
			9:19:52	18.94	20.12	139.34	0.02	0.02	745	36881		
			9:19:53	18.90	20.12	139.34	0.02	0.02	745	40710		
			9:19:54	18.96	20.12	139.27	0.02	0.02	745	41160		
			9:19:55	18.81	20.12	139.36	0.02	0.02	745	39840		
			9:19:56	18.89	20.12	139.28	0.02	0.02	745	42090		
			9:19:57	18.95	20.12	139.06	0.02	0.02	745	36520		
			9:19:58	18.96	20.11	138.93	0.02	0.02	745	35476		
			9:19:59	18.90	20.11	138.88	0.02	0.02	745	39418		
			9:20:00	18.98	20.11	138.98	0.02	0.02	745	43064		
			9:20:01	18.98	20.11	139.11	0.02	0.02	745	37437		
			9:20:02	18.99	20.11	138.94	0.02	0.02	745	37817		
			9:20:03	19.03	20.11	138.84	0.02	0.02	745	45427		
			9:20:04	18.99	20.11	138.73	0.02	0.02	745	43567		
			9:20:05	19.02	20.11	139.09	0.02	0.02	745	37437		
			9:20:06	19.03	20.12	139.11	0.02	0.02	745	36881		
			9:20:07	18.96	20.12	138.94	0.02	0.02	745	40270		
			9:20:08	19.09	20.11	138.86	0.02	0.02	745	40270		
			9:20:09	18.99	20.11	138.82	0.02	0.02	745	37250		
			9:20:10	18.99	20.11	138.63	0.02	0.02	745	37437		
			9:20:11	18.96	20.11	138.67	0.02	0.02	745	41160		
			9:20:12	18.95	20.11	138.54	0.02	0.02	745	40270		
			9:20:13	19.00	20.11	138.56	0.02	0.02	745	40270		
			9:20:14	18.91	20.11	138.52	0.02	0.02	745	36520		
			9:20:15	19.02	20.11	138.63	0.02	0.02	745	38402		
			9:20:16	18.98	20.11	138.51	0.02	0.02	745	42816		
			9:20:17	18.98	20.11	138.52	0.02	0.02	745	36881		
			9:20:18	19.10	20.11	138.39	0.02	0.02	745	41160		
			9:20:19	19.07	20.11	138.24	0.02	0.02	745	39840		
			9:20:20	19.12	20.11	137.96	0.02	0.02	745	37817		
			9:20:21	19.12	20.10	138.08	0.02	0.02	745	39840		
			9:20:22	19.14	20.11	138.37	0.02	0.02	745	37626		
			9:20:23	19.15	20.11	138.25	0.02	0.02	745	41389		
			9:20:24	19.13	20.11	138.15	0.02	0.02	745	39005		
			9:20:25	19.16	20.11	138.11	0.02	0.02	745	42090		
			9:20:26	19.15	20.11	138.22	0.02	0.02	745	41160		

**TABLE D-22**

Profile PRO-16 on September 21, 2022 (0917-0930 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

24	Instantaneous Minimum Dilution in Profile
43	Minimum Average Dilution in Profile
66	Plume Average Dilution Detected
8989	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:20:27	19.28	20.11	137.96	0.02	0.02	745	38010		
			9:20:28	19.24	20.10	137.83	0.02	0.02	745	40710		
			9:20:29	19.34	20.10	137.53	0.02	0.02	745	39840		
			9:20:30	19.71	20.10	137.56	0.02	0.02	745	40270		
			9:20:31	22.14	20.10	137.77	0.02	0.02	745	38601		
			9:20:32	24.17	20.10	137.94	0.02	0.02	745	39005		
			9:20:33	24.41	20.10	137.96	0.02	0.02	745	36165		
			9:20:34	24.50	20.10	137.91	0.02	0.02	745	39840		
			9:20:35	24.64	20.10	137.58	0.02	0.02	745	41160		
			9:20:36	24.72	20.10	137.39	0.02	0.02	745	38205	39388	No plume at 24-25 ft
			9:20:37	24.76	20.10	137.29	0.02	0.02	745	38402		
			9:20:38	24.84	20.10	137.18	0.02	0.02	745	41160		
			9:20:39	24.85	20.10	137.15	0.02	0.02	745	42090		
			9:20:40	24.82	20.10	137.29	0.02	0.02	745	36165		
			9:20:41	24.67	20.10	137.64	0.02	0.02	745	39840		
			9:20:42	24.78	20.10	137.49	0.02	0.02	745	41160		
			9:20:43	24.73	20.10	137.71	0.02	0.02	745	39840		
			9:20:44	24.79	20.10	137.91	0.02	0.02	745	41620		
			9:20:45	24.69	20.10	138.04	0.02	0.02	745	36881		
			9:20:46	24.77	20.11	138.12	0.02	0.02	745	38601		
			9:20:47	24.69	20.11	138.14	0.02	0.02	745	44880		
			9:20:48	24.73	20.11	138.14	0.02	0.02	745	39005		
			9:20:49	24.76	20.11	138.42	0.02	0.02	745	42090		
			9:20:50	24.67	20.11	138.27	0.02	0.02	745	38601		
			9:20:51	24.74	20.11	138.51	0.02	0.02	745	39418		
			9:20:52	24.68	20.11	138.75	0.02	0.02	745	39005		
			9:20:53	24.77	20.11	138.26	0.02	0.02	745	38205		
			9:20:54	24.79	20.11	138.18	0.02	0.02	745	36881		
			9:20:55	24.68	20.11	138.52	0.02	0.02	745	42816		
			9:20:56	24.82	20.12	138.69	0.02	0.02	745	36520		
			9:20:57	24.72	20.12	138.78	0.02	0.02	745	40270		
			9:20:58	24.82	20.12	138.71	0.02	0.02	745	38205		
			9:20:59	24.81	20.12	138.65	0.02	0.02	745	37626		
			9:21:00	24.73	20.13	138.73	0.02	0.02	745	39418		
			9:21:01	24.79	20.12	138.69	0.02	0.02	745	39005		
			9:21:02	24.85	20.12	138.80	0.02	0.02	745	37065		
			9:21:03	24.65	20.12	138.78	0.02	0.02	745	38205		
			9:21:04	24.82	20.12	138.63	0.02	0.02	745	44345		
			9:21:05	24.89	20.13	138.73	0.02	0.02	745	37817		

**TABLE D-22**

Profile PRO-16 on September 21, 2022 (0917-0930 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

24	Instantaneous Minimum Dilution in Profile
43	Minimum Average Dilution in Profile
66	Plume Average Dilution Detected
8989	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			9:21:06	24.56	20.13	138.88	0.02	0.02	745	39005		
			9:21:07	24.92	20.12	138.73	0.02	0.02	745	39840		
			9:21:08	24.69	20.12	138.84	0.02	0.02	745	36881		
			9:21:09	24.82	20.12	138.86	0.02	0.02	745	41620		
			9:21:10	24.85	20.13	138.86	0.02	0.02	745	38205		
			9:21:11	24.64	20.13	138.94	0.02	0.02	745	41620		
			9:21:12	25.16	20.13	138.91	0.02	0.02	745	40270		
			9:21:13	25.13	20.12	138.92	0.02	0.02	745	40270		
			9:21:14	25.20	20.12	138.88	0.02	0.02	745	37250		
			9:21:15	25.66	20.12	138.88	0.02	0.02	745	38601		
			9:21:16	28.42	20.12	138.90	0.02	0.02	745	40710		
			9:21:17	29.67	20.12	138.90	0.02	0.02	745	39211		
			9:21:18	30.05	20.12	138.90	0.02	0.02	745	38010		
			9:21:19	30.10	20.12	138.92	0.02	0.02	745	36881		
			9:21:20	30.14	20.12	138.90	0.02	0.02	745	37437		
			9:21:21	30.22	20.13	138.92	0.02	0.02	745	39005		
			9:21:22	30.26	20.13	138.90	0.02	0.02	745	39418		
			9:21:23	30.30	20.13	139.02	0.02	0.02	745	42090		
			9:21:24	30.23	20.13	138.97	0.02	0.02	745	43314		
			9:21:25	30.15	20.13	138.98	0.02	0.02	745	39418		
			9:21:26	30.25	20.13	138.98	0.02	0.02	745	38402		
			9:21:27	30.20	20.13	139.04	0.02	0.02	745	39418		
			9:21:28	30.15	20.13	139.04	0.02	0.02	745	39005		
			9:21:29	30.21	20.13	139.06	0.02	0.02	745	42330		
			9:21:30	30.15	20.13	138.93	0.02	0.02	745	39005		
			9:21:31	30.21	20.12	138.88	0.02	0.02	745	37437		
			9:21:32	30.29	20.12	138.78	0.02	0.02	745	37437	39525	No plume at 30 ft
			9:21:33	30.17	20.12	138.80	0.02	0.02	745	38601		
			9:21:34	30.19	20.12	138.87	0.02	0.02	745	38205		
			9:21:35	30.17	20.12	138.86	0.02	0.02	745	40270		
			9:21:36	30.06	20.12	138.65	0.02	0.02	745	36165		
			9:21:37	30.09	20.12	138.73	0.02	0.02	745	39418		
			9:21:38	30.08	20.12	138.87	0.02	0.02	745	43824		
			9:21:39	30.08	20.12	139.00	0.02	0.02	745	39005		
			9:21:40	30.03	20.13	138.94	0.02	0.02	745	39840		
			9:21:41	30.08	20.13	138.94	0.02	0.02	745	40270		
			9:21:42	30.13	20.13	139.02	0.02	0.02	745	42090		
			9:21:43	30.03	20.13	139.04	0.02	0.02	745	36520		
			9:21:44	30.06	20.13	139.02	0.02	0.02	745	39840		



**TABLE D-22**

Profile PRO-16 on September 21, 2022 (0917-0930 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

24	Instantaneous Minimum Dilution in Profile
43	Minimum Average Dilution in Profile
66	Plume Average Dilution Detected
8989	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:21:45	30.17	20.13	139.02	0.02	0.02	745	42571		
			9:21:46	30.08	20.13	139.00	0.02	0.02	745	40270		
			9:21:47	30.12	20.13	139.02	0.02	0.02	745	40270		
			9:21:48	30.07	20.13	139.06	0.02	0.02	745	37626		
			9:21:49	30.08	20.13	139.04	0.02	0.02	745	38010		
			9:21:50	30.11	20.13	139.09	0.02	0.02	745	45427		
			9:21:51	30.05	20.13	139.00	0.02	0.02	745	41160		
			9:21:52	30.09	20.13	139.00	0.02	0.02	745	39005		
			9:21:53	30.06	20.13	138.99	0.02	0.02	745	36520		
			9:21:54	30.09	20.13	138.98	0.02	0.02	745	39418		
			9:21:55	30.00	20.13	138.98	0.02	0.02	745	39005		
			9:21:56	29.99	20.13	139.00	0.02	0.02	745	37817		
			9:21:57	29.92	20.13	139.00	0.02	0.02	745	38205		
			9:21:58	29.91	20.13	139.00	0.02	0.02	745	39005		
			9:21:59	29.94	20.13	138.98	0.02	0.02	745	44345		
			9:22:00	29.90	20.13	139.02	0.02	0.02	745	39418		
			9:22:01	29.90	20.13	139.02	0.02	0.02	745	39005		
			9:22:02	29.94	20.13	139.00	0.02	0.02	745	40710		
			9:22:03	29.75	20.13	139.04	0.02	0.02	745	35817		
			9:22:04	29.82	20.13	138.97	0.02	0.02	745	41160		
			9:22:05	29.88	20.14	139.00	0.02	0.02	745	38601		
			9:22:06	31.67	20.14	139.00	0.02	0.02	745	40710		
			9:22:07	34.41	20.13	139.00	0.02	0.02	745	41160		
			9:22:08	35.16	20.13	139.04	0.02	0.02	745	40270		
			9:22:09	35.33	20.13	139.02	0.02	0.02	745	39005		
			9:22:10	35.30	20.13	139.00	0.02	0.02	745	39005		
			9:22:11	35.30	20.13	139.02	0.02	0.02	745	40270		
			9:22:12	35.33	20.13	138.96	0.02	0.02	745	36520		
			9:22:13	35.28	20.13	138.94	0.02	0.02	745	39840		
			9:22:14	35.16	20.12	138.93	0.02	0.02	745	43314		
			9:22:15	35.34	20.12	138.91	0.02	0.02	745	39840		
			9:22:16	35.23	20.12	138.90	0.02	0.02	745	37817		
			9:22:17	35.22	20.12	138.93	0.02	0.02	745	39005		
			9:22:18	35.18	20.12	139.09	0.02	0.02	745	41160		
			9:22:19	35.25	20.13	139.09	0.02	0.02	745	40270		
			9:22:20	35.18	20.13	139.09	0.02	0.02	745	38601		
			9:22:21	35.22	20.13	139.04	0.02	0.02	745	39211		
			9:22:22	35.18	20.13	139.06	0.02	0.02	745	37250		
			9:22:23	35.17	20.12	138.96	0.02	0.02	745	39005		

**TABLE D-22**

Profile PRO-16 on September 21, 2022 (0917-0930 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

24	Instantaneous Minimum Dilution in Profile
43	Minimum Average Dilution in Profile
66	Plume Average Dilution Detected
8989	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:22:24	35.20	20.12	139.00	0.02	0.02	745	39840		No plume at 30 ft
			9:22:25	35.20	20.12	138.99	0.02	0.02	745	42090		
			9:22:26	35.11	20.12	139.00	0.02	0.02	745	42571		
			9:22:27	35.14	20.12	138.98	0.02	0.02	745	39840	39766	
			9:22:28	35.21	20.12	138.98	0.02	0.02	745	44880		
			9:22:29	35.11	20.12	139.09	0.02	0.02	745	36881		
			9:22:30	35.08	20.12	139.06	0.02	0.02	745	39840		
			9:22:31	35.16	20.12	139.04	0.02	0.02	745	37250		
			9:22:32	35.13	20.12	139.13	0.02	0.02	745	40270		
			9:22:33	35.09	20.12	139.06	0.02	0.02	745	42330		
			9:22:34	35.14	20.12	139.13	0.02	0.02	745	37626		
			9:22:35	35.16	20.12	139.04	0.02	0.02	745	40270		
			9:22:36	35.05	20.12	139.09	0.02	0.02	745	39418		
			9:22:37	35.09	20.12	139.09	0.02	0.02	745	39005		
			9:22:38	35.10	20.12	139.11	0.02	0.02	745	38601		
			9:22:39	35.10	20.12	139.17	0.02	0.02	745	38205		
			9:22:40	35.15	20.12	139.04	0.02	0.02	745	38402		
			9:22:41	35.07	20.12	139.06	0.02	0.02	745	44345		
			9:22:42	35.13	20.12	139.11	0.02	0.02	745	40710		
			9:22:43	35.25	20.12	139.04	0.02	0.02	745	37626		
			9:22:44	35.22	20.12	139.04	0.02	0.02	745	42816		
			9:22:45	35.55	20.12	139.06	0.02	0.02	745	36520		
			9:22:46	36.09	20.12	139.06	0.02	0.02	745	40270		
			9:22:47	39.13	20.13	142.06	0.87	0.40	745	1867		
			9:22:48	40.92	20.15	146.88	8.70	7.43	745	100		
			9:22:49	41.13	20.15	144.55	7.09	5.99	745	124	112	
			9:22:50	41.19	20.15	144.79	1.18	0.68	745	1102		
			9:22:51	41.18	20.15	147.43	23.38	20.59	745	36		
			9:22:52	40.98	20.17	149.28	17.12	14.98	745	50	43	
			9:22:53	41.05	20.16	143.21	1.27	0.76	745	982		
			9:22:54	40.94	20.13	139.99	0.02	0.02	745	41160		
			9:22:55	40.96	20.12	139.42	0.02	0.02	745	39418		
			9:22:56	40.87	20.12	139.32	0.02	0.02	745	40270		
			9:22:57	40.87	20.12	139.28	0.02	0.02	745	40270		
			9:22:58	41.00	20.12	139.23	0.02	0.02	745	37250		
			9:22:59	40.85	20.12	139.12	0.02	0.02	745	40270		
			9:23:00	40.88	20.12	139.36	0.02	0.02	745	39418		
			9:23:01	40.89	20.13	142.21	1.85	1.28	745	582		
			9:23:02	40.84	20.15	148.67	10.49	9.03	745	82		

**TABLE D-22**

Profile PRO-16 on September 21, 2022 (0917-0930 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

24	Instantaneous Minimum Dilution in Profile
43	Minimum Average Dilution in Profile
66	Plume Average Dilution Detected
8989	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments	
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations	
			9:23:03	40.77	20.18	152.38	24.72	21.80	745	34	53	Diffuser port plume measured at 40 ft	
			9:23:04	40.77	20.18	151.14	19.42	17.05	745	44			
			9:23:05	40.77	20.16	145.15	4.79	3.92	745	190			
			9:23:06	40.71	20.15	144.80	1.24	0.74	745	1009			
			9:23:07	40.67	20.13	140.16	0.02	0.02	745	40710			
			9:23:08	40.67	20.13	144.58	0.04	0.04	745	20245			
			9:23:09	40.59	20.15	146.09	10.44	8.99	745	83			
			9:23:10	40.54	20.16	148.72	18.46	16.19	745	46			
			9:23:11	40.54	20.17	151.75	27.46	24.26	745	31	52		Diffuser port plume measured at 40 ft
			9:23:12	40.49	20.17	149.25	18.27	16.01	745	47			
			9:23:13	40.46	20.15	142.78	7.10	5.99	745	124			
			9:23:14	40.48	20.13	139.69	0.37	0.37	745	2031			
			9:23:15	40.48	20.12	139.32	0.02	0.02	745	36165			
			9:23:16	40.43	20.12	139.38	0.02	0.02	745	42090			
			9:23:17	40.43	20.12	139.32	0.02	0.02	745	38205			
			9:23:18	40.35	20.12	139.17	0.02	0.02	745	43314			
			9:23:19	40.37	20.12	139.16	0.02	0.02	745	39418			
			9:23:20	40.31	20.12	139.17	0.02	0.02	745	41160			
			9:23:21	40.44	20.12	139.15	0.02	0.02	745	42090			
			9:23:22	40.33	20.12	139.15	0.02	0.02	745	38601			
			9:23:23	40.38	20.12	139.35	0.02	0.02	745	37817			
			9:23:24	40.47	20.12	140.96	1.42	0.89	745	834			
			9:23:25	40.54	20.12	139.73	0.11	0.11	745	6676			
			9:23:26	40.63	20.12	139.63	0.02	0.02	745	42816			
			9:23:27	40.59	20.12	142.97	0.74	0.29	745	2570			
			9:23:28	40.67	20.14	144.10	0.02	0.02	745	38601			
			9:23:29	40.64	20.13	140.03	0.02	0.02	745	40710			
			9:23:30	40.61	20.12	139.30	0.02	0.02	745	41620			
			9:23:31	40.70	20.12	139.15	0.02	0.02	745	41620			
			9:23:32	40.72	20.12	142.71	2.82	2.16	745	346			
			9:23:33	40.79	20.15	148.68	15.35	13.40	745	56			
			9:23:34	40.79	20.16	147.05	16.57	14.49	745	51			
			9:23:35	40.84	20.16	148.85	23.12	20.37	745	37	52	Diffuser port plume measured at 40 ft	
			9:23:36	40.99	20.16	145.74	13.19	11.45	745	65			
			9:23:37	40.89	20.13	140.13	0.02	0.02	745	40710			
			9:23:38	40.95	20.12	139.38	0.02	0.02	745	36520			
			9:23:39	40.99	20.12	139.17	0.02	0.02	745	39005			
			9:23:40	41.00	20.12	139.13	0.02	0.02	745	38205			
			9:23:41	40.94	20.12	139.09	0.02	0.02	745	41160			

**TABLE D-22**

Profile PRO-16 on September 21, 2022 (0917-0930 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

24	Instantaneous Minimum Dilution in Profile
43	Minimum Average Dilution in Profile
66	Plume Average Dilution Detected
8989	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:23:42	40.95	20.12	139.35	0.02	0.02	745	40270		Diffuser port plume measured at 40 ft
			9:23:43	40.91	20.13	143.47	2.00	1.41	745	527		
			9:23:44	40.88	20.15	149.04	17.24	15.09	745	49		
			9:23:45	40.83	20.17	152.77	25.26	22.28	745	33		
			9:23:46	40.81	20.19	154.73	24.73	21.81	745	34	46	
			9:23:47	40.76	20.19	154.65	34.37	30.46	745	24		
			9:23:48	40.76	20.18	149.14	10.04	8.63	745	86		
			9:23:49	40.74	20.15	142.95	0.47	0.05	745	15743		
			9:23:50	40.78	20.14	143.98	7.87	6.69	745	111		
			9:23:51	40.81	20.15	146.93	21.27	18.70	745	40	65	Diffuser port plume measured at 40 ft
			9:23:52	40.80	20.16	149.45	19.88	17.46	745	43		
			9:23:53	40.78	20.16	147.82	6.41	5.37	745	139		
			9:23:54	40.86	20.15	144.10	3.20	2.49	745	299		
			9:23:55	40.90	20.15	144.94	0.02	0.02	745	40270		
			9:23:56	40.90	20.14	142.70	0.02	0.02	745	40270		
			9:23:57	40.99	20.13	140.58	0.30	0.30	745	2522		
			9:23:58	41.09	20.13	143.24	9.16	7.84	745	95		
			9:23:59	41.08	20.15	146.67	14.98	13.06	745	57		
			9:24:00	41.07	20.16	147.67	19.51	17.12	745	44		
			9:24:01	41.10	20.16	149.11	19.51	17.13	745	43		
			9:24:02	41.18	20.17	151.47	27.06	23.90	745	31		
			9:24:03	41.17	20.18	152.91	29.20	25.82	745	29	50	Diffuser port plume measured at 40 ft
			9:24:04	41.22	20.18	149.53	19.73	17.33	745	43		
			9:24:05	41.25	20.16	148.39	15.24	13.30	745	56		
			9:24:06	41.25	20.16	148.56	17.22	15.07	745	49		
			9:24:07	41.16	20.16	150.67	21.74	19.13	745	39		
			9:24:08	41.18	20.17	148.72	17.83	15.61	745	48		
			9:24:09	41.15	20.16	146.52	14.25	12.41	745	60		
			9:24:10	41.09	20.15	144.60	6.56	5.51	745	135		
			9:24:11	41.08	20.14	145.84	13.53	11.76	745	63		
			9:24:12	41.04	20.16	151.22	21.83	19.21	745	39		
			9:24:13	41.02	20.17	149.25	17.65	15.45	745	48	51	Diffuser port plume measured at 40 ft
			9:24:14	40.99	20.15	146.12	14.66	12.78	745	58		
			9:24:15	40.96	20.15	147.41	19.39	17.02	745	44		
			9:24:16	40.96	20.15	143.59	16.52	14.45	745	52		
			9:24:17	40.94	20.13	141.50	3.11	2.41	745	309		
			9:24:18	40.93	20.13	139.85	0.02	0.02	745	42090		
			9:24:19	40.88	20.12	140.66	0.20	0.20	745	3677		
			9:24:20	40.84	20.13	141.89	5.06	4.16	745	179		

**TABLE D-22**

Profile PRO-16 on September 21, 2022 (0917-0930 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

24	Instantaneous Minimum Dilution in Profile
43	Minimum Average Dilution in Profile
66	Plume Average Dilution Detected
8989	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:24:21	40.79	20.13	139.90	0.02	0.02	745	41620		
			9:24:22	40.73	20.12	139.13	0.02	0.02	745	41160		
			9:24:23	40.68	20.12	139.04	0.02	0.02	745	41160		
			9:24:24	40.61	20.12	138.97	0.02	0.02	745	38601		
			9:24:25	40.56	20.12	139.00	0.02	0.02	745	41160		
			9:24:26	40.51	20.12	138.98	0.02	0.02	745	37437		
			9:24:27	40.49	20.12	138.97	0.02	0.02	745	42090		
			9:24:28	40.46	20.12	139.00	0.02	0.02	745	43824		
			9:24:29	40.33	20.12	139.07	0.02	0.02	745	41160		
			9:24:30	40.33	20.12	139.19	0.02	0.02	745	40710		
			9:24:31	40.22	20.12	138.99	0.02	0.02	745	39418		
			9:24:32	40.20	20.13	140.95	0.02	0.02	745	42816		
			9:24:33	40.11	20.13	140.55	1.46	0.93	745	799		
			9:24:34	40.15	20.13	139.44	0.02	0.02	745	36881		
			9:24:35	40.06	20.14	143.10	0.02	0.02	745	39840		
			9:24:36	40.01	20.15	145.37	0.02	0.02	745	40270		
			9:24:37	40.10	20.15	145.94	2.89	2.21	745	337		
			9:24:38	40.09	20.15	145.94	10.14	8.72	745	85		
			9:24:39	39.99	20.14	142.41	6.08	5.07	745	147		
			9:24:40	40.04	20.14	140.43	0.15	0.15	745	5085		
			9:24:41	40.16	20.13	139.21	0.02	0.02	745	37250		
			9:24:42	40.24	20.13	139.11	0.02	0.02	745	40270		
			9:24:43	40.45	20.12	139.04	0.02	0.02	745	42330		
			9:24:44	40.43	20.12	139.25	0.02	0.02	745	35817		
			9:24:45	40.46	20.13	142.41	5.54	4.59	745	162		
			9:24:46	40.88	20.14	143.79	3.99	3.20	745	233		
			9:24:47	41.69	20.14	140.99	0.02	0.02	745	40270		
			9:24:48	42.15	20.14	143.49	0.31	0.31	745	2379		
			9:24:49	42.22	20.14	140.69	0.73	0.27	745	2721		
			9:24:50	42.16	20.13	139.34	0.02	0.02	745	38402		
			9:24:51	42.21	20.12	139.63	0.68	0.23	745	3271		
			9:24:52	42.28	20.12	139.23	0.02	0.02	745	39418		
			9:24:53	42.20	20.12	139.09	0.02	0.02	745	40270		
			9:24:54	42.21	20.12	139.11	0.02	0.02	745	42816		
			9:24:55	42.13	20.12	139.04	0.02	0.02	745	37250		
			9:24:56	42.08	20.12	139.04	0.02	0.02	745	36881		
			9:24:57	41.94	20.12	139.06	0.02	0.02	745	39418		
			9:24:58	41.77	20.12	139.02	0.02	0.02	745	39840		
			9:24:59	41.67	20.12	139.04	0.02	0.02	745	42330		

**TABLE D-22**

Profile PRO-16 on September 21, 2022 (0917-0930 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

24	Instantaneous Minimum Dilution in Profile
43	Minimum Average Dilution in Profile
66	Plume Average Dilution Detected
8989	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:25:00	41.60	20.12	139.04	0.02	0.02	745	39840		
			9:25:01	41.50	20.12	139.50	0.13	0.13	745	5955		
			9:25:02	41.55	20.12	140.71	2.63	1.98	745	376		
			9:25:03	41.54	20.12	139.71	0.14	0.14	745	5337		
			9:25:04	41.65	20.12	139.83	0.02	0.02	745	39005		
			9:25:05	41.58	20.12	140.62	0.05	0.05	745	16338		
			9:25:06	41.54	20.12	141.13	0.02	0.02	745	38601		
			9:25:07	41.60	20.13	142.33	0.03	0.03	745	22041		
			9:25:08	41.50	20.13	140.07	0.02	0.02	745	41160		
			9:25:09	41.46	20.12	139.40	0.02	0.02	745	43567		
			9:25:10	41.45	20.12	139.32	0.02	0.02	745	37437		
			9:25:11	41.38	20.12	139.18	0.02	0.02	745	37250		
			9:25:12	41.33	20.12	139.15	0.02	0.02	745	40710		
			9:25:13	41.31	20.12	139.17	0.02	0.02	745	40270		
			9:25:14	41.25	20.12	139.31	0.02	0.02	745	41620		
			9:25:15	41.31	20.12	143.09	7.97	6.77	745	110		
			9:25:16	41.18	20.14	147.00	21.90	19.27	745	39		
			9:25:17	41.24	20.16	150.29	32.23	28.54	745	26		
			9:25:18	41.22	20.16	147.44	19.96	17.53	745	42	49	Diffuser port plume measured at 40 ft
			9:25:19	41.19	20.14	142.92	9.97	8.57	745	87		
			9:25:20	41.20	20.14	145.56	16.73	14.63	745	51		
			9:25:21	41.16	20.14	141.56	3.94	3.15	745	236		
			9:25:22	41.14	20.12	139.07	0.02	0.02	745	37817		
			9:25:23	41.15	20.11	138.83	0.02	0.02	745	40270		
			9:25:24	41.16	20.11	139.09	0.22	0.22	745	3376		
			9:25:25	41.03	20.11	138.94	2.94	2.26	745	330		
			9:25:26	41.04	20.12	138.67	0.02	0.02	745	36881		
			9:25:27	41.08	20.12	138.78	0.02	0.02	745	41160		
			9:25:28	41.07	20.12	139.28	0.02	0.02	745	30285		
			9:25:29	41.04	20.13	140.01	0.09	0.09	745	8223		
			9:25:30	41.08	20.12	139.99	0.02	0.02	745	38205		
			9:25:31	41.06	20.13	140.16	1.28	0.77	745	969		
			9:25:32	41.03	20.12	139.23	0.02	0.02	745	41160		
			9:25:33	40.91	20.12	139.09	0.02	0.02	745	40710		
			9:25:34	40.94	20.12	140.39	0.02	0.02	745	38402		
			9:25:35	40.84	20.13	142.15	0.02	0.02	745	39005		
			9:25:36	40.80	20.13	139.70	0.02	0.02	745	41620		
			9:25:37	40.77	20.12	141.07	0.02	0.02	745	37817		
			9:25:38	40.83	20.13	140.05	0.02	0.02	745	40710		

**TABLE D-22**

Profile PRO-16 on September 21, 2022 (0917-0930 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

24	Instantaneous Minimum Dilution in Profile
43	Minimum Average Dilution in Profile
66	Plume Average Dilution Detected
8989	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured	Calibration-	Measured	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							Dye Conc. (ppb)	Corrected Dye Conc. (ppb)	Initial Dye Conc. (ppb)			
			9:25:39	40.77	20.12	139.03	0.02	0.02	745	37437		
			9:25:40	40.76	20.11	138.84	0.02	0.02	745	44345		
			9:25:41	40.78	20.11	138.84	0.02	0.02	745	40710		
			9:25:42	40.81	20.11	138.93	0.02	0.02	745	41620		
			9:25:43	40.80	20.12	139.11	0.02	0.02	745	39005		
			9:25:44	40.75	20.12	139.09	0.02	0.02	745	44880		
			9:25:45	40.80	20.11	138.98	0.02	0.02	745	36520		
			9:25:46	40.83	20.11	139.09	0.02	0.02	745	38205		
			9:25:47	40.77	20.11	139.09	0.02	0.02	745	43567		
			9:25:48	40.76	20.11	139.09	0.02	0.02	745	41620		
			9:25:49	40.81	20.11	139.11	0.02	0.02	745	41160		
			9:25:50	40.86	20.11	139.09	0.02	0.02	745	40270		
			9:25:51	40.76	20.11	138.97	0.02	0.02	745	41160		
			9:25:52	40.74	20.11	138.97	0.02	0.02	745	40710		
			9:25:53	40.80	20.11	138.94	0.02	0.02	745	39005		
			9:25:54	40.77	20.11	141.65	0.02	0.02	745	43314		
			9:25:55	40.79	20.13	144.81	9.63	8.26	745	90		
			9:25:56	40.83	20.14	145.73	14.60	12.72	745	59		
			9:25:57	40.91	20.14	144.70	7.97	6.77	745	110		
			9:25:58	40.81	20.13	142.56	0.20	0.20	745	3759		
			9:25:59	40.89	20.12	140.36	0.02	0.02	745	41160		
			9:26:00	40.96	20.12	140.38	0.02	0.02	745	43567		
			9:26:01	41.07	20.12	142.15	5.02	4.13	745	181		
			9:26:02	41.10	20.13	144.82	12.52	10.85	745	69		
			9:26:03	41.10	20.14	145.67	13.52	11.75	745	63		
			9:26:04	41.19	20.14	144.58	8.16	6.94	745	107		
			9:26:05	41.23	20.14	144.88	8.10	6.89	745	108		
			9:26:06	41.16	20.14	145.38	12.28	10.64	745	70		
			9:26:07	41.25	20.14	142.74	3.09	2.40	745	311		
			9:26:08	41.18	20.12	139.40	0.02	0.02	745	43567		
			9:26:09	41.25	20.12	138.99	0.02	0.02	745	41160		
			9:26:10	41.27	20.12	138.94	0.02	0.02	745	36165		
			9:26:11	41.30	20.12	138.94	0.02	0.02	745	40270		
			9:26:12	41.34	20.12	138.97	0.02	0.02	745	44880		
			9:26:13	41.34	20.11	138.94	0.02	0.02	745	39840		
			9:26:14	41.37	20.12	138.93	0.02	0.02	745	39840		
			9:26:15	41.40	20.12	138.97	0.63	0.19	745	3995		
			9:26:16	41.40	20.12	139.00	0.02	0.02	745	40710		
			9:26:17	41.43	20.12	138.93	0.02	0.02	745	39005		

**TABLE D-22**

Profile PRO-16 on September 21, 2022 (0917-0930 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

24	Instantaneous Minimum Dilution in Profile
43	Minimum Average Dilution in Profile
66	Plume Average Dilution Detected
8989	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:26:18	41.46	20.12	140.56	2.49	1.85	745	402		Diffuser port plume measured at 40 ft
			9:26:19	41.45	20.12	140.80	1.80	1.24	745	601		
			9:26:20	41.43	20.12	140.70	4.16	3.36	745	222		
			9:26:21	41.43	20.12	142.41	7.85	6.66	745	112		
			9:26:22	41.37	20.13	144.37	13.89	12.08	745	62		
			9:26:23	41.55	20.14	143.69	20.54	18.05	745	41	77	
			9:26:24	41.52	20.14	144.17	9.20	7.88	745	95		
			9:26:25	41.62	20.13	141.92	5.34	4.42	745	169		
			9:26:26	41.70	20.14	145.43	11.22	9.69	745	77		
			9:26:27	41.87	20.15	145.41	9.37	8.03	745	93		
			9:26:28	41.83	20.14	142.47	0.63	0.19	745	3963		
			9:26:29	41.90	20.13	142.60	5.50	4.56	745	163		
			9:26:30	42.17	20.13	144.00	11.57	10.00	745	74		
			9:26:31	43.60	20.13	142.52	11.36	9.81	745	76		
			9:26:32	44.15	20.13	143.28	3.49	2.76	745	270		
			9:26:33	44.33	20.13	142.45	5.71	4.75	745	157		
			9:26:34	44.34	20.13	141.66	3.29	2.57	745	290		
			9:26:35	44.35	20.13	142.74	6.55	5.50	745	136		
			9:26:36	44.32	20.14	144.58	11.47	9.92	745	75		
			9:26:37	44.37	20.14	143.96	9.81	8.42	745	88	82	
			9:26:38	44.27	20.13	142.13	10.52	9.06	745	82		
			9:26:39	44.19	20.12	139.93	1.64	1.09	745	684		
			9:26:40	44.16	20.12	140.07	0.75	0.29	745	2562		
			9:26:41	44.15	20.12	139.35	0.02	0.02	745	38010		
			9:26:42	44.11	20.11	139.06	0.02	0.02	745	39005		
			9:26:43	44.02	20.11	138.99	0.02	0.02	745	39418		
			9:26:44	43.98	20.12	140.48	1.59	1.05	745	712		
			9:26:45	43.89	20.12	139.73	0.57	0.13	745	5598		
			9:26:46	43.79	20.11	139.01	0.02	0.02	745	38601		
			9:26:47	43.78	20.11	138.91	0.87	0.40	745	1863		
			9:26:48	43.80	20.11	138.80	0.02	0.02	745	36881		
			9:26:49	43.86	20.11	138.71	0.02	0.02	745	42571		
			9:26:50	43.80	20.11	138.73	0.02	0.02	745	40710		
			9:26:51	43.86	20.11	138.74	0.02	0.02	745	38601		
			9:26:52	43.92	20.11	139.16	0.02	0.02	745	40710		
			9:26:53	43.83	20.13	144.84	11.57	10.01	745	74		
			9:26:54	43.84	20.15	147.69	17.50	15.32	745	49	69	
			9:26:55	43.85	20.15	145.49	10.28	8.84	745	84		
			9:26:56	43.84	20.13	141.78	6.35	5.32	745	140		



**TABLE D-22**

Profile PRO-16 on September 21, 2022 (0917-0930 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

24	Instantaneous Minimum Dilution in Profile
43	Minimum Average Dilution in Profile
66	Plume Average Dilution Detected
8989	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:26:57	43.89	20.12	140.84	6.32	5.29	745	141		Diffuser port plume measured at 44 ft
			9:26:58	43.89	20.12	141.47	5.26	4.34	745	172		
			9:26:59	43.88	20.13	146.45	21.48	18.90	745	39	62	
			9:27:00	43.93	20.16	150.31	30.68	27.14	745	27		
			9:27:01	43.85	20.14	142.29	7.37	6.23	745	120		
			9:27:02	43.84	20.12	139.64	0.32	0.32	745	2346		
			9:27:03	43.85	20.11	138.84	0.02	0.02	745	42330		
			9:27:04	43.87	20.11	138.61	0.02	0.02	745	39418		
			9:27:05	43.91	20.11	138.66	0.02	0.02	745	40270		
			9:27:06	43.96	20.11	141.25	4.11	3.31	745	225		
			9:27:07	43.97	20.13	144.82	7.13	6.02	745	124	207	Diffuser port plume measured at 44 ft
			9:27:08	43.95	20.13	140.71	3.47	2.73	745	273		
			9:27:09	43.92	20.12	139.49	1.15	0.65	745	1147		
			9:27:10	43.97	20.12	139.36	0.02	0.02	745	39005		
			9:27:11	43.93	20.11	139.47	0.02	0.02	745	46563		
			9:27:12	44.02	20.11	139.07	0.02	0.02	745	42816		
			9:27:13	44.02	20.11	138.75	0.02	0.02	745	39840		
			9:27:14	43.97	20.11	138.67	0.02	0.02	745	42330		
			9:27:15	44.07	20.11	138.65	0.02	0.02	745	40270		
			9:27:16	44.09	20.11	138.56	0.02	0.02	745	39840		
			9:27:17	44.00	20.11	138.61	0.02	0.02	745	41620		
			9:27:18	44.00	20.11	138.61	0.02	0.02	745	39840		
			9:27:19	44.09	20.11	138.65	0.02	0.02	745	38601		
			9:27:20	44.01	20.11	138.63	0.02	0.02	745	40270		
			9:27:21	44.02	20.11	138.63	0.02	0.02	745	42330		
			9:27:22	44.05	20.11	138.50	0.02	0.02	745	41620		
			9:27:23	44.07	20.11	138.50	0.02	0.02	745	39418		
			9:27:24	44.00	20.11	138.56	0.02	0.02	745	42090		
			9:27:25	44.04	20.11	138.61	0.02	0.02	745	37817		
			9:27:26	44.06	20.11	138.63	0.02	0.02	745	37817		
			9:27:27	44.02	20.11	138.67	0.02	0.02	745	39005		
			9:27:28	44.03	20.11	138.68	0.02	0.02	745	42330		
			9:27:29	44.09	20.11	138.63	0.02	0.02	745	39840		
			9:27:30	44.04	20.11	138.63	0.02	0.02	745	43314		
			9:27:31	44.05	20.11	138.71	0.02	0.02	745	38601		
			9:27:32	44.04	20.11	138.80	0.02	0.02	745	39840		
			9:27:33	43.99	20.11	140.60	5.07	4.17	745	179		
			9:27:34	43.97	20.12	140.38	4.63	3.77	745	198		
			9:27:35	44.01	20.12	143.97	11.86	10.26	745	73		

**TABLE D-22**

Profile PRO-16 on September 21, 2022 (0917-0930 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

24	Instantaneous Minimum Dilution in Profile
43	Minimum Average Dilution in Profile
66	Plume Average Dilution Detected
8989	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:27:36	43.94	20.14	146.10	16.30	14.24	745	52	65	Diffuser port plume measured at 44 ft
			9:27:37	43.97	20.15	145.59	11.72	10.13	745	74		
			9:27:38	44.00	20.14	142.54	14.08	12.25	745	61		
			9:27:39	43.92	20.12	140.12	4.76	3.89	745	191		
			9:27:40	43.93	20.12	138.99	0.02	0.02	745	39418		
			9:27:41	43.96	20.11	138.82	0.02	0.02	745	39005		
			9:27:42	43.93	20.11	138.74	0.02	0.02	745	35817		
			9:27:43	43.89	20.11	138.71	0.02	0.02	745	40710		
			9:27:44	43.96	20.11	138.69	0.02	0.02	745	42330		
			9:27:45	43.88	20.11	138.87	0.02	0.02	745	41620		
			9:27:46	43.95	20.11	138.71	0.02	0.02	745	41160		
			9:27:47	43.93	20.11	138.77	0.02	0.02	745	39005		
			9:27:48	44.03	20.11	139.66	0.02	0.02	745	40710		
			9:27:49	44.00	20.12	141.19	2.08	1.49	745	501		
			9:27:50	44.07	20.13	144.07	10.24	8.81	745	85		
			9:27:51	44.01	20.13	141.72	11.84	10.24	745	73		
			9:27:52	44.03	20.12	139.85	3.24	2.53	745	295		
			9:27:53	44.01	20.12	139.78	1.44	0.91	745	816		
			9:27:54	44.05	20.12	141.18	4.92	4.04	745	185		
			9:27:55	43.92	20.13	146.64	15.51	13.53	745	55		
			9:27:56	44.04	20.15	146.66	18.82	16.51	745	45	52	Diffuser port plume measured at 44 ft
			9:27:57	44.02	20.14	145.78	15.40	13.44	745	55		
			9:27:58	44.02	20.13	142.13	4.20	3.39	745	220		
			9:27:59	44.05	20.12	140.14	7.51	6.36	745	117		
			9:28:00	44.13	20.12	140.03	4.75	3.88	745	192		
			9:28:01	44.14	20.12	140.14	3.70	2.94	745	253		
			9:28:02	44.25	20.11	139.26	1.47	0.94	745	794		
			9:28:03	44.28	20.11	138.91	0.02	0.02	745	40270		
			9:28:04	44.33	20.11	138.91	0.02	0.02	745	41160		
			9:28:05	44.32	20.11	138.87	0.02	0.02	745	38010		
			9:28:06	44.46	20.11	139.02	0.02	0.02	745	41620		
			9:28:07	44.49	20.11	139.11	0.24	0.24	745	3166		
			9:28:08	44.50	20.11	139.04	0.15	0.15	745	5106		
			9:28:09	44.56	20.11	138.96	0.02	0.02	745	40710		
			9:28:10	44.63	20.11	140.03	2.85	2.18	745	342		
			9:28:11	44.52	20.11	139.77	0.88	0.41	745	1832		
			9:28:12	44.67	20.11	139.26	0.02	0.02	745	41620		
			9:28:13	44.58	20.11	139.50	2.19	1.59	745	469		
			9:28:14	44.70	20.11	139.03	0.74	0.29	745	2599		

**TABLE D-22**

Profile PRO-16 on September 21, 2022 (0917-0930 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

24	Instantaneous Minimum Dilution in Profile
43	Minimum Average Dilution in Profile
66	Plume Average Dilution Detected
8989	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			9:28:15	44.73	20.11	138.94	0.09	0.09	745	8054		
			9:28:16	44.78	20.11	139.73	3.18	2.48	745	301		
			9:28:17	44.84	20.11	140.40	4.40	3.57	745	209		
			9:28:18	44.90	20.12	141.72	5.74	4.78	745	156		
			9:28:19	44.85	20.12	141.46	6.84	5.76	745	129		
			9:28:20	44.80	20.12	140.46	2.77	2.11	745	354		
			9:28:21	44.78	20.11	139.30	0.23	0.23	745	3191		
			9:28:22	44.80	20.11	139.09	0.02	0.02	745	39418		
			9:28:23	44.69	20.11	138.93	0.02	0.02	745	40270		
			9:28:24	44.76	20.11	139.05	0.58	0.14	745	5153		
			9:28:25	44.75	20.11	139.59	1.65	1.10	745	676		
			9:28:26	44.67	20.11	139.07	0.08	0.08	745	9841		
			9:28:27	44.67	20.11	138.61	0.02	0.02	745	40270		
			9:28:28	44.66	20.10	138.50	0.02	0.02	745	39418		
			9:28:29	44.60	20.10	138.50	0.07	0.07	745	11153		
			9:28:30	44.64	20.11	139.68	1.50	0.97	745	769		
			9:28:31	44.62	20.11	139.52	0.07	0.07	745	10613		
			9:28:32	44.72	20.11	138.90	0.02	0.02	745	40710		
			9:28:33	44.73	20.11	138.59	0.02	0.02	745	41160		
			9:28:34	44.75	20.11	138.50	0.02	0.02	745	38205		
			9:28:35	44.77	20.11	139.14	1.51	0.98	745	761		
			9:28:36	44.88	20.11	139.32	2.06	1.47	745	507		
			9:28:37	44.90	20.11	138.85	0.02	0.02	745	39840		
			9:28:38	44.87	20.10	138.54	0.02	0.02	745	40710		
			9:28:39	44.93	20.10	138.48	0.02	0.02	745	37437		
			9:28:40	44.96	20.10	138.54	0.02	0.02	745	40270		
			9:28:41	45.02	20.10	138.48	0.02	0.02	745	41620		
			9:28:42	44.95	20.10	138.46	0.02	0.02	745	46563		
			9:28:43	44.97	20.10	138.52	0.02	0.02	745	43567		
			9:28:44	45.04	20.10	138.48	0.02	0.02	745	43824		
			9:28:45	45.08	20.10	138.50	0.02	0.02	745	42330		
			9:28:46	45.05	20.10	138.54	0.02	0.02	745	39005		
			9:28:47	45.12	20.10	138.52	0.02	0.02	745	41620		
			9:28:48	45.18	20.10	138.51	0.02	0.02	745	42090		
			9:28:49	45.09	20.11	138.54	0.02	0.02	745	41160		
			9:28:50	45.09	20.11	138.54	0.02	0.02	745	41160		
			9:28:51	45.16	20.11	138.54	0.02	0.02	745	37817		
			9:28:52	45.12	20.11	139.07	3.69	2.94	745	254		
			9:28:53	45.01	20.12	146.55	24.48	21.58	745	35		

**TABLE D-22**

Profile PRO-16 on September 21, 2022 (0917-0930 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

24	Instantaneous Minimum Dilution in Profile
43	Minimum Average Dilution in Profile
66	Plume Average Dilution Detected
8989	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:28:54	45.02	20.15	148.35	32.19	28.50	745	26		
			9:28:55	45.06	20.14	144.48	15.40	13.44	745	55	59	Diffuser port plume measured at 45 ft
			9:28:56	45.00	20.13	145.39	11.49	9.93	745	75		
			9:28:57	44.94	20.13	144.48	12.98	11.26	745	66		
			9:28:58	45.00	20.13	144.65	11.31	9.77	745	76		
			9:28:59	45.01	20.13	144.25	10.51	9.05	745	82		
			9:29:00	44.91	20.13	143.31	4.92	4.04	745	185		
			9:29:01	44.92	20.12	141.38	4.13	3.32	745	224		
			9:29:02	44.99	20.11	139.96	2.22	1.61	745	463		
			9:29:03	45.00	20.11	139.40	2.24	1.63	745	456		
			9:29:04	44.88	20.11	140.40	3.52	2.78	745	268		
			9:29:05	44.91	20.11	141.92	6.42	5.38	745	139		
			9:29:06	44.77	20.12	143.19	5.49	4.55	745	164		
			9:29:07	44.82	20.12	143.80	7.93	6.74	745	111		
			9:29:08	44.67	20.13	145.47	15.73	13.73	745	54		
			9:29:09	44.65	20.13	145.17	16.26	14.21	745	52	62	Diffuser port plume measured at 45 ft
			9:29:10	44.67	20.13	144.68	12.18	10.55	745	71		
			9:29:11	44.71	20.13	142.84	11.96	10.35	745	72		
			9:29:12	44.54	20.12	140.86	7.93	6.74	745	111		
			9:29:13	44.60	20.11	140.01	0.91	0.44	745	1697		
			9:29:14	44.60	20.11	142.18	8.99	7.69	745	97		
			9:29:15	44.62	20.12	141.58	5.83	4.85	745	153		
			9:29:16	44.53	20.11	142.42	8.29	7.06	745	105		
			9:29:17	44.59	20.12	141.95	3.79	3.02	745	247		
			9:29:18	44.55	20.11	139.07	0.59	0.15	745	4815		
			9:29:19	44.42	20.10	138.71	0.93	0.45	745	1639		
			9:29:20	44.46	20.10	138.67	0.02	0.02	745	42090		
			9:29:21	44.48	20.10	138.56	0.02	0.02	745	42571		
			9:29:22	44.47	20.10	139.63	15.00	13.08	745	57		
			9:29:23	44.38	20.11	139.90	7.10	6.00	745	124		
			9:29:24	44.36	20.10	138.58	0.02	0.02	745	42090		
			9:29:25	44.37	20.10	138.56	0.02	0.02	745	42090		
			9:29:26	44.31	20.11	140.60	5.33	4.41	745	169		
			9:29:27	44.37	20.12	146.39	16.26	14.21	745	52		
			9:29:28	44.31	20.14	144.75	12.81	11.12	745	67		
			9:29:29	44.33	20.12	143.53	1.66	1.11	745	668		
			9:29:30	44.20	20.14	150.49	18.79	16.48	745	45		
			9:29:31	44.12	20.15	147.67	27.83	24.59	745	30	49	Diffuser port plume measured at 44 ft
			9:29:32	44.12	20.15	147.43	21.16	18.61	745	40		

**TABLE D-22**

Profile PRO-16 on September 21, 2022 (0917-0930 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

24	Instantaneous Minimum Dilution in Profile
43	Minimum Average Dilution in Profile
66	Plume Average Dilution Detected
8989	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:29:33	44.11	20.13	141.54	10.92	9.42	745	79		Diffuser port plume measured at 44 ft
			9:29:34	44.02	20.11	139.36	2.23	1.62	745	460		
			9:29:35	43.99	20.11	139.28	0.70	0.25	745	2938		
			9:29:36	43.97	20.11	141.65	8.22	6.99	745	107		
			9:29:37	43.92	20.12	143.39	15.20	13.26	745	56		
			9:29:38	43.91	20.13	146.45	17.27	15.11	745	49		
			9:29:39	43.88	20.14	146.50	16.67	14.57	745	51	52	
			9:29:40	43.79	20.14	146.52	17.18	15.03	745	50		
			9:29:41	43.92	20.14	145.79	15.96	13.94	745	53		
			9:29:42	43.77	20.14	144.86	16.06	14.03	745	53		
			9:29:43	43.73	20.13	142.59	6.98	5.88	745	127		
			9:29:44	43.75	20.12	141.56	6.64	5.58	745	133		
			9:29:45	43.65	20.12	142.85	13.33	11.58	745	64		
			9:29:46	43.54	20.13	145.08	17.48	15.31	745	49		
			9:29:47	43.60	20.14	142.92	5.64	4.68	745	159		
			9:29:48	43.66	20.12	140.43	1.40	0.87	745	853		
			9:29:49	43.56	20.12	141.47	6.89	5.80	745	128		
			9:29:50	43.57	20.12	141.01	6.71	5.64	745	132		
			9:29:51	43.59	20.13	143.71	10.17	8.75	745	85		
			9:29:52	43.52	20.14	145.02	16.86	14.75	745	51	61	
			9:29:53	43.58	20.14	146.09	16.71	14.61	745	51		
			9:29:54	43.55	20.15	145.58	15.42	13.46	745	55		
			9:29:55	43.67	20.13	142.05	5.30	4.38	745	170		
			9:29:56	43.71	20.13	143.66	12.05	10.44	745	71		
			9:29:57	43.81	20.13	141.86	8.18	6.96	745	107		
			9:29:58	43.72	20.11	138.23	1.94	1.37	745	546		
			9:29:59	43.82	20.11	138.58	0.02	0.02	745	42330		
			9:30:00	43.81	20.11	137.70	0.02	0.02	745	40710		
			9:30:01	43.74	20.11	137.68	0.02	0.02	745	41389		
			9:30:02	43.78	20.11	139.13	0.02	0.02	745	40710		
			9:30:03	43.79	20.12	144.37	8.30	7.07	745	105		
			9:30:04	43.77	20.14	147.55	25.88	22.84	745	33		
			9:30:05	43.80	20.15	147.44	24.20	21.34	745	35	55	
			9:30:06	43.82	20.15	147.31	11.59	10.02	745	74		
			9:30:07	43.86	20.15	146.10	12.15	10.52	745	71		
			9:30:08	43.93	20.14	147.06	22.78	20.06	745	37		
			9:30:09	43.93	20.15	145.51	17.34	15.18	745	49		
			9:30:10	43.86	20.14	144.43	11.66	10.08	745	74		
			9:30:11	43.95	20.13	143.97	13.31	11.56	745	64		

**TABLE D-22**

Profile PRO-16 on September 21, 2022 (0917-0930 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

24	Instantaneous Minimum Dilution in Profile
43	Minimum Average Dilution in Profile
66	Plume Average Dilution Detected
8989	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:30:12	43.92	20.13	141.44	9.70	8.33	745	89		
			9:30:13	43.86	20.12	140.93	3.08	2.38	745	313		
			9:30:14	43.84	20.12	141.50	5.73	4.77	745	156		
			9:30:15	43.91	20.13	142.78	19.92	17.50	745	43		
			9:30:16	43.83	20.13	143.38	14.21	12.37	745	60		
			9:30:17	43.65	20.13	141.96	10.80	9.31	745	80		
			9:30:18	43.65	20.12	138.56	0.67	0.23	745	3298		
			9:30:19	43.49	20.11	138.49	0.02	0.02	745	40270		
			9:30:20	43.46	20.11	137.97	0.02	0.02	745	43064		
			9:30:21	43.32	20.11	138.54	0.02	0.02	745	41160		
			9:30:22	43.35	20.11	139.54	0.02	0.02	745	42571		
			9:30:23	43.33	20.12	142.78	7.70	6.53	745	114		
			9:30:24	43.42	20.13	142.99	17.81	15.60	745	48		
			9:30:25	43.41	20.13	142.33	16.29	14.23	745	52		
			9:30:26	43.49	20.12	138.42	1.67	1.12	745	666		
			9:30:27	43.43	20.11	137.66	0.02	0.02	745	42571		
			9:30:28	43.42	20.10	137.62	0.02	0.02	745	47756		
			9:30:29	43.49	20.10	137.66	0.02	0.02	745	42090		
			9:30:30	43.49	20.11	137.56	0.02	0.02	745	42330		
			9:30:31	43.52	20.11	137.43	0.02	0.02	745	43567		
			9:30:32	43.61	20.11	137.33	0.02	0.02	745	39418		
			9:30:33	43.72	20.11	137.13	0.02	0.02	745	40270		
			9:30:34	43.91	20.11	137.10	0.02	0.02	745	41160		
			9:30:35	43.81	20.11	137.14	0.02	0.02	745	40710		
			9:30:36	43.82	20.11	137.10	0.02	0.02	745	39005		

**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-17 (North Mixing Zone Boundary - 242 ft from Diffuser)	50 ft	0.54 m/sec 348 deg. (mag.) Ebb Tide	9:44:26	2.38	20.05	134.63	0.07	0.07	804	11806		No dye plume detected near surface
			9:44:27	2.32	20.06	134.83	0.04	0.04	804	18190		
			9:44:28	2.37	20.05	134.14	0.05	0.05	804	15000		
			9:44:29	2.30	19.99	134.46	0.02	0.02	804	44916		
			9:44:30	2.28	19.94	133.51	0.04	0.04	804	18829		
			9:44:31	2.32	19.62	133.77	0.02	0.02	804	42540		
			9:44:32	2.32	19.59	133.70	0.02	0.02	804	43934		
			9:44:33	2.34	19.51	133.31	0.02	0.02	804	42540		
			9:44:34	2.36	19.32	132.93	0.02	0.02	804	44916		
			9:44:35	2.36	19.22	132.82	0.02	0.02	804	42540		
			9:44:36	2.38	19.21	133.03	0.02	0.02	804	44916		
			9:44:37	2.34	19.25	133.29	0.02	0.02	804	39412		
			9:44:38	2.32	19.32	133.56	0.02	0.02	804	42094		
			9:44:39	2.38	19.45	133.73	0.02	0.02	804	45943		
			9:44:40	2.31	19.54	133.87	0.02	0.02	804	41231		
			9:44:41	2.42	19.58	134.10	0.02	0.02	804	39802		
			9:44:42	2.37	19.63	134.23	0.02	0.02	804	46744		
			9:44:43	2.41	19.68	134.37	0.02	0.02	804	41443		
			9:44:44	2.36	19.70	134.50	0.02	0.02	804	38654		
			9:44:45	2.33	19.74	134.66	0.02	0.02	804	42540		
			9:44:46	2.35	19.77	134.73	0.02	0.02	804	42540		
			9:44:47	2.32	19.80	134.80	0.02	0.02	804	43459		
			9:44:48	2.32	19.83	134.87	0.02	0.02	804	42995		
			9:44:49	2.39	19.85	135.00	0.02	0.02	804	45424		
			9:44:50	2.29	19.85	135.09	0.02	0.02	804	44916		
			9:44:51	2.29	19.88	135.13	0.02	0.02	804	44420		
9:44:52	2.32	19.90	135.19	0.02	0.02	804	42995					
9:44:53	2.35	19.91	135.21	0.02	0.02	804	45424					
9:44:54	2.27	19.93	135.25	0.02	0.02	804	45682					
9:44:55	2.32	19.94	135.23	0.02	0.02	804	41658					
9:44:56	2.35	19.96	135.25	0.02	0.02	804	43934					
9:44:57	2.31	19.97	135.28	0.02	0.02	804	42540					
9:44:58	2.33	19.98	135.32	0.02	0.02	804	39412					
9:44:59	2.33	19.98	135.35	0.02	0.02	804	42540					
9:45:00	2.35	20.02	135.57	0.02	0.02	804	41658					
9:45:01	2.34	20.11	135.61	0.02	0.02	804	46474					
9:45:02	2.30	20.12	135.49	0.02	0.02	804	45682					
9:45:03	2.35	20.12	135.59	0.02	0.02	804	41658					
9:45:04	2.37	20.12	135.63	0.02	0.02	804	45682					

**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:45:05	2.31	20.12	135.69	0.02	0.02	804	40402		
			9:45:06	2.32	20.13	135.76	0.02	0.02	804	41231		
			9:45:07	2.32	20.12	135.78	0.02	0.02	804	40606		
			9:45:08	2.29	20.12	135.73	0.02	0.02	804	45682		
			9:45:09	2.38	20.12	135.67	0.02	0.02	804	42540		
			9:45:10	2.34	20.12	135.74	0.02	0.02	804	43934		
			9:45:11	2.36	20.12	135.73	0.02	0.02	804	42995		
			9:45:12	2.31	20.12	135.80	0.02	0.02	804	39029		
			9:45:13	2.36	20.11	135.71	0.02	0.02	804	43934		
			9:45:14	2.39	20.11	135.90	0.02	0.02	804	47294		
			9:45:15	2.40	20.12	135.99	0.02	0.02	804	39802		
			9:45:16	2.30	20.12	136.07	0.02	0.02	804	45682		
			9:45:17	2.35	20.12	136.17	0.02	0.02	804	44916		
			9:45:18	2.34	20.11	136.21	0.02	0.02	804	41658		
			9:45:19	2.39	20.12	136.07	0.02	0.02	804	40200		
			9:45:20	2.33	20.12	136.07	0.02	0.02	804	44420		
			9:45:21	2.32	20.12	136.07	0.02	0.02	804	39802		
			9:45:22	2.42	20.12	136.04	0.02	0.02	804	39412		
			9:45:23	2.76	20.12	136.17	0.02	0.02	804	41658		
			9:45:24	4.56	20.11	136.30	0.02	0.02	804	41020		
			9:45:25	7.22	20.11	136.26	0.02	0.02	804	44420		
			9:45:26	7.56	20.11	136.25	0.02	0.02	804	43459		
			9:45:27	7.67	20.11	136.21	0.02	0.02	804	42094		No dye plume detected at 7-8 ft
			9:45:28	7.73	20.11	136.09	0.02	0.02	804	39412		
			9:45:29	7.81	20.12	136.10	0.02	0.02	804	43934		
			9:45:30	7.82	20.12	136.09	0.02	0.02	804	42094		
			9:45:31	7.82	20.12	136.13	0.02	0.02	804	41231		
			9:45:32	7.98	20.12	136.09	0.02	0.02	804	43934		
			9:45:33	8.09	20.12	136.13	0.02	0.02	804	41443		
			9:45:34	8.07	20.12	136.15	0.02	0.02	804	47857		
			9:45:35	8.04	20.12	136.12	0.02	0.02	804	47294		
			9:45:36	8.07	20.12	136.08	0.02	0.02	804	42094		
			9:45:37	8.11	20.12	136.09	0.02	0.02	804	43459		
			9:45:38	8.01	20.12	136.15	0.02	0.02	804	42094		
			9:45:39	7.91	20.12	136.09	0.02	0.02	804	41658		
			9:45:40	7.82	20.12	136.08	0.02	0.02	804	43934		
			9:45:41	7.86	20.12	136.09	0.02	0.02	804	41443		
			9:45:42	7.77	20.12	136.08	0.02	0.02	804	41658		
			9:45:43	7.84	20.12	136.12	0.02	0.02	804	38654		



**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:45:44	7.78	20.12	136.08	0.02	0.02	804	42094		
			9:45:45	7.84	20.12	136.09	0.02	0.02	804	40606		
			9:45:46	7.79	20.12	136.07	0.02	0.02	804	39029		
			9:45:47	7.79	20.12	136.04	0.02	0.02	804	43459		
			9:45:48	7.79	20.12	136.07	0.02	0.02	804	47857		
			9:45:49	7.77	20.12	136.08	0.02	0.02	804	41020		
			9:45:50	7.81	20.12	136.03	0.02	0.02	804	42540		
			9:45:51	7.78	20.13	136.03	0.02	0.02	804	39412		
			9:45:52	7.76	20.13	136.05	0.02	0.02	804	42316		
			9:45:53	7.75	20.13	136.15	0.02	0.02	804	40812		
			9:45:54	7.77	20.12	136.11	0.02	0.02	804	42995		
			9:45:55	7.74	20.12	136.09	0.02	0.02	804	42094		
			9:45:56	7.70	20.12	136.05	0.02	0.02	804	41658		
			9:45:57	7.74	20.12	136.07	0.02	0.02	804	43459		
			9:45:58	7.74	20.12	135.98	0.02	0.02	804	40200		
			9:45:59	7.69	20.12	136.02	0.02	0.02	804	46474		
			9:46:00	7.71	20.12	136.04	0.02	0.02	804	42094		
			9:46:01	7.71	20.12	136.15	0.02	0.02	804	41443		
			9:46:02	7.73	20.12	135.84	0.02	0.02	804	45943		
			9:46:03	7.76	20.12	135.90	0.02	0.02	804	42094		
			9:46:04	7.77	20.12	135.78	0.02	0.02	804	46474		
			9:46:05	7.78	20.13	135.69	0.02	0.02	804	45682		
			9:46:06	7.83	20.13	135.76	0.02	0.02	804	42995		
			9:46:07	7.81	20.13	135.88	0.02	0.02	804	47294		
			9:46:08	7.81	20.13	135.82	0.02	0.02	804	43459		
			9:46:09	7.85	20.13	135.80	0.02	0.02	804	45424		
			9:46:10	7.80	20.13	135.82	0.02	0.02	804	44420		
			9:46:11	7.84	20.13	135.82	0.02	0.02	804	41020		
			9:46:12	7.92	20.12	136.13	0.02	0.02	804	43459		
			9:46:13	7.92	20.12	136.19	0.02	0.02	804	42094		
			9:46:14	7.85	20.12	136.19	0.02	0.02	804	40402		
			9:46:15	7.93	20.12	136.24	0.02	0.02	804	42995		
			9:46:16	7.94	20.11	136.26	0.02	0.02	804	42540		
			9:46:17	7.98	20.11	136.21	0.02	0.02	804	42094		
			9:46:18	7.94	20.11	136.32	0.02	0.02	804	45424		
			9:46:19	7.90	20.11	136.26	0.02	0.02	804	41658		
			9:46:20	7.96	20.12	136.04	0.02	0.02	804	44916		
			9:46:21	8.13	20.13	135.73	0.02	0.02	804	41658		
			9:46:22	8.08	20.13	135.52	0.02	0.02	804	42540		

**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:46:23	8.11	20.13	135.54	0.02	0.02	804	42540		No dye plume detected at 13 ft
			9:46:24	8.10	20.13	135.48	0.02	0.02	804	44420		
			9:46:25	8.23	20.13	135.65	0.02	0.02	804	41658		
			9:46:26	9.59	20.13	136.10	0.02	0.02	804	43459		
			9:46:27	12.48	20.11	136.38	0.02	0.02	804	42995		
			9:46:28	13.63	20.11	136.38	0.02	0.02	804	41658		
			9:46:29	13.73	20.11	136.38	0.02	0.02	804	41658		
			9:46:30	13.69	20.11	136.14	0.02	0.02	804	41231		
			9:46:31	13.78	20.13	135.97	0.02	0.02	804	41443		
			9:46:32	13.86	20.13	135.86	0.02	0.02	804	43459		
			9:46:33	13.82	20.13	136.03	0.02	0.02	804	43459		
			9:46:34	13.79	20.13	136.04	0.02	0.02	804	41658		
			9:46:35	13.87	20.13	136.03	0.02	0.02	804	43934		
			9:46:36	13.87	20.13	135.99	0.02	0.02	804	44420		
			9:46:37	13.84	20.13	136.01	0.02	0.02	804	43934		
			9:46:38	13.80	20.13	136.08	0.02	0.02	804	42540		
			9:46:39	13.86	20.13	136.03	0.02	0.02	804	42094		
			9:46:40	13.91	20.13	136.01	0.02	0.02	804	47857		
			9:46:41	13.78	20.13	135.99	0.02	0.02	804	39412		
			9:46:42	13.80	20.13	135.99	0.02	0.02	804	44916		
			9:46:43	13.85	20.13	136.03	0.02	0.02	804	42995		
			9:46:44	13.82	20.13	136.05	0.02	0.02	804	43934		
			9:46:45	13.77	20.13	136.04	0.02	0.02	804	45424		
			9:46:46	13.78	20.13	136.04	0.02	0.02	804	39802		
			9:46:47	13.84	20.13	136.04	0.02	0.02	804	37925		
			9:46:48	13.85	20.13	136.03	0.02	0.02	804	43459		
			9:46:49	13.74	20.13	136.03	0.02	0.02	804	42540		
			9:46:50	13.81	20.13	136.09	0.02	0.02	804	40606		
			9:46:51	13.84	20.13	136.15	0.02	0.02	804	42540		
			9:46:52	13.75	20.13	136.15	0.02	0.02	804	41658		
			9:46:53	13.76	20.13	136.17	0.02	0.02	804	42995		
			9:46:54	13.87	20.13	136.17	0.02	0.02	804	43934		
			9:46:55	13.84	20.13	136.24	0.02	0.02	804	45943		
			9:46:56	13.77	20.13	136.26	0.02	0.02	804	46744		
			9:46:57	13.78	20.12	136.24	0.02	0.02	804	37222		
			9:46:58	13.71	20.12	136.26	0.02	0.02	804	45424		
			9:46:59	13.62	20.12	136.27	0.02	0.02	804	43934		
			9:47:00	13.54	20.12	136.32	0.02	0.02	804	41020		
			9:47:01	13.46	20.12	136.32	0.02	0.02	804	42540		

**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:47:02	13.36	20.12	136.28	0.02	0.02	804	43459		
			9:47:03	13.38	20.12	136.26	0.02	0.02	804	42995		
			9:47:04	13.31	20.12	136.34	0.02	0.02	804	38286		
			9:47:05	13.34	20.12	136.21	0.02	0.02	804	42094		
			9:47:06	13.37	20.12	136.24	0.02	0.02	804	43459		
			9:47:07	13.46	20.13	136.21	0.02	0.02	804	42540		
			9:47:08	13.49	20.13	136.19	0.02	0.02	804	45424		
			9:47:09	13.48	20.12	136.30	0.02	0.02	804	43934		
			9:47:10	13.51	20.12	136.26	0.02	0.02	804	45424		
			9:47:11	13.60	20.13	136.26	0.02	0.02	804	41020		
			9:47:12	13.83	20.12	136.32	0.02	0.02	804	41658		
			9:47:13	16.13	20.12	136.32	0.02	0.02	804	46207		
			9:47:14	18.61	20.12	136.33	0.02	0.02	804	43459		
			9:47:15	19.21	20.12	136.26	0.02	0.02	804	41658		
			9:47:16	19.45	20.12	136.32	0.02	0.02	804	41443		
			9:47:17	19.58	20.12	136.40	0.02	0.02	804	40606		
			9:47:18	19.65	20.12	136.30	0.02	0.02	804	43934		
			9:47:19	19.69	20.12	136.30	0.02	0.02	804	40812		
			9:47:20	19.76	20.12	136.34	0.02	0.02	804	44916		
			9:47:21	19.70	20.12	136.30	0.02	0.02	804	47857		
			9:47:22	19.73	20.12	136.31	0.02	0.02	804	40606		
			9:47:23	19.70	20.12	136.34	0.02	0.02	804	42540		
			9:47:24	19.67	20.12	136.34	0.02	0.02	804	41658		
			9:47:25	19.70	20.12	136.34	0.02	0.02	804	41658		
			9:47:26	19.67	20.12	136.34	0.02	0.02	804	42094		
			9:47:27	19.70	20.12	136.34	0.02	0.02	804	43459		
			9:47:28	19.70	20.12	136.36	0.02	0.02	804	42094		
			9:47:29	19.74	20.12	136.34	0.02	0.02	804	46744		
			9:47:30	19.78	20.12	136.38	0.02	0.02	804	42094		
			9:47:31	19.85	20.12	136.30	0.02	0.02	804	48434		
			9:47:32	19.84	20.12	136.34	0.02	0.02	804	41658		
			9:47:33	19.83	20.12	136.34	0.02	0.02	804	45943		
			9:47:34	19.83	20.12	136.34	0.02	0.02	804	43934		
			9:47:35	19.84	20.12	136.32	0.02	0.02	804	42766		
			9:47:36	19.84	20.12	136.34	0.02	0.02	804	45169		
			9:47:37	19.79	20.12	136.49	0.02	0.02	804	40402		
			9:47:38	19.82	20.12	136.36	0.02	0.02	804	41020		
			9:47:39	19.76	20.12	136.51	0.02	0.02	804	40200		
			9:47:40	19.72	20.12	136.47	0.02	0.02	804	45682		

No dye plume detected at 19 ft

**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:47:41	19.74	20.12	136.36	0.02	0.02	804	43459		
			9:47:42	19.79	20.12	136.36	0.02	0.02	804	43459		
			9:47:43	19.77	20.12	136.47	0.02	0.02	804	41231		
			9:47:44	19.75	20.12	136.36	0.02	0.02	804	44420		
			9:47:45	19.92	20.12	136.33	0.02	0.02	804	42540		
			9:47:46	19.81	20.12	136.32	0.02	0.02	804	43459		
			9:47:47	19.70	20.12	136.28	0.02	0.02	804	42995		
			9:47:48	19.66	20.12	136.28	0.02	0.02	804	41443		
			9:47:49	19.57	20.12	136.40	0.02	0.02	804	41658		
			9:47:50	19.47	20.12	136.36	0.02	0.02	804	42540		
			9:47:51	19.34	20.12	136.55	0.02	0.02	804	42540		
			9:47:52	19.29	20.12	136.53	0.02	0.02	804	41020		
			9:47:53	19.31	20.12	136.88	0.02	0.02	804	44916		
			9:47:54	19.26	20.12	136.84	0.02	0.02	804	44916		
			9:47:55	19.25	20.12	136.51	0.02	0.02	804	44420		
			9:47:56	19.34	20.12	136.47	0.02	0.02	804	39802		
			9:47:57	19.36	20.12	136.43	0.02	0.02	804	43459		
			9:47:58	19.45	20.12	136.45	0.02	0.02	804	42995		
			9:47:59	19.38	20.12	136.49	0.02	0.02	804	45424		
			9:48:00	19.51	20.12	136.45	0.02	0.02	804	46474		
			9:48:01	19.52	20.12	136.41	0.02	0.02	804	44916		
			9:48:02	19.54	20.12	136.43	0.02	0.02	804	45943		
			9:48:03	19.47	20.12	136.49	0.02	0.02	804	45424		
			9:48:04	19.54	20.12	136.49	0.02	0.02	804	45943		
			9:48:05	19.54	20.12	136.51	0.02	0.02	804	39802		
			9:48:06	19.51	20.12	136.47	0.02	0.02	804	42995		
			9:48:07	19.67	20.11	136.47	0.02	0.02	804	48434		
			9:48:08	20.12	20.11	136.38	0.02	0.02	804	41658		
			9:48:09	22.13	20.11	136.45	0.02	0.02	804	44916		
			9:48:10	24.34	20.12	136.55	0.02	0.02	804	42094		
			9:48:11	24.72	20.12	136.45	0.02	0.02	804	45424		No dye plume detected at 24-25 ft
			9:48:12	24.74	20.11	136.45	0.02	0.02	804	47294		
			9:48:13	24.76	20.11	136.43	0.02	0.02	804	42995		
			9:48:14	24.79	20.11	136.43	0.02	0.02	804	39029		
			9:48:15	24.67	20.11	136.67	0.02	0.02	804	47857		
			9:48:16	24.72	20.11	137.33	0.21	0.21	804	3856		
			9:48:17	24.65	20.11	137.27	0.08	0.08	804	9963		
			9:48:18	24.60	20.11	137.31	0.02	0.02	804	43459		
			9:48:19	24.61	20.11	137.31	0.02	0.02	804	47294		

**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:48:20	24.64	20.11	137.24	0.22	0.22	804	3665		
			9:48:21	24.64	20.11	137.51	0.02	0.02	804	42540		
			9:48:22	24.67	20.11	137.62	0.53	0.10	804	7962		
			9:48:23	24.64	20.11	137.66	0.45	0.03	804	29054		
			9:48:24	24.71	20.11	137.82	0.50	0.07	804	10856		
			9:48:25	24.76	20.11	137.73	0.51	0.07	804	10752		
			9:48:26	24.66	20.11	137.18	0.02	0.02	804	41443		
			9:48:27	24.71	20.12	137.24	0.02	0.02	804	41231		
			9:48:28	24.70	20.12	137.16	0.02	0.02	804	42540		
			9:48:29	24.74	20.12	137.41	0.02	0.02	804	45943		
			9:48:30	24.68	20.12	137.83	0.04	0.04	804	22088		
			9:48:31	24.70	20.12	137.67	0.44	0.02	804	51080		
			9:48:32	24.71	20.12	137.68	0.12	0.12	804	6547		
			9:48:33	24.66	20.12	137.68	0.02	0.02	804	46207		
			9:48:34	24.59	20.12	137.29	0.02	0.02	804	42540		
			9:48:35	24.62	20.12	136.81	0.02	0.02	804	42995		
			9:48:36	24.61	20.11	136.85	0.02	0.02	804	40200		
			9:48:37	24.68	20.11	136.87	0.02	0.02	804	44916		
			9:48:38	24.57	20.11	136.84	0.02	0.02	804	42540		
			9:48:39	24.66	20.11	136.85	0.02	0.02	804	44420		
			9:48:40	24.81	20.11	137.39	0.02	0.02	804	41658		
			9:48:41	24.91	20.12	137.56	0.06	0.06	804	12926		
			9:48:42	25.01	20.11	137.56	0.03	0.03	804	26361		
			9:48:43	25.11	20.12	137.56	0.02	0.02	804	42094		
			9:48:44	25.22	20.12	137.39	0.02	0.02	804	42094		
			9:48:45	25.20	20.11	136.91	0.02	0.02	804	43459		
			9:48:46	25.23	20.11	136.78	0.02	0.02	804	39412		
			9:48:47	25.36	20.11	136.70	0.02	0.02	804	43934		
			9:48:48	25.32	20.11	136.68	0.02	0.02	804	42540		
			9:48:49	25.21	20.11	136.68	0.02	0.02	804	41231		
			9:48:50	25.15	20.11	136.64	0.02	0.02	804	39029		
			9:48:51	25.01	20.11	136.72	0.02	0.02	804	41658		
			9:48:52	24.97	20.11	136.81	0.02	0.02	804	44916		
			9:48:53	24.79	20.11	136.80	0.02	0.02	804	40200		
			9:48:54	24.73	20.11	136.70	0.02	0.02	804	42316		
			9:48:55	24.73	20.11	136.70	0.02	0.02	804	46744		
			9:48:56	24.65	20.11	136.74	0.02	0.02	804	43459		
			9:48:57	24.65	20.11	136.74	0.02	0.02	804	44420		
			9:48:58	24.62	20.11	136.70	0.02	0.02	804	42094		

**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:48:59	24.69	20.11	136.68	0.02	0.02	804	44420		
			9:49:00	24.72	20.11	136.70	0.02	0.02	804	43934		
			9:49:01	24.74	20.11	136.90	0.02	0.02	804	42995		
			9:49:02	24.89	20.11	136.98	0.02	0.02	804	42094		
			9:49:03	25.08	20.11	137.01	0.02	0.02	804	42094		
			9:49:04	25.17	20.11	136.95	0.02	0.02	804	43459		
			9:49:05	25.22	20.11	137.05	0.02	0.02	804	41658		
			9:49:06	25.40	20.11	137.05	0.02	0.02	804	40606		
			9:49:07	25.52	20.11	137.07	0.02	0.02	804	39412		
			9:49:08	25.78	20.11	137.05	0.02	0.02	804	46207		
			9:49:09	27.68	20.11	137.09	0.02	0.02	804	42094		
			9:49:10	30.38	20.11	137.18	0.02	0.02	804	41658		
			9:49:11	30.61	20.11	137.20	0.02	0.02	804	42995		
			9:49:12	30.65	20.11	137.29	0.02	0.02	804	43459		
			9:49:13	30.45	20.11	137.46	0.02	0.02	804	44667		
			9:49:14	30.41	20.11	137.68	0.06	0.06	804	13720		
			9:49:15	30.29	20.12	137.94	0.66	0.21	804	3790		
			9:49:16	30.29	20.12	137.85	0.32	0.32	804	2488		
			9:49:17	30.29	20.12	137.68	0.05	0.05	804	15000		
			9:49:18	30.32	20.11	137.68	0.02	0.02	804	44916		
			9:49:19	30.26	20.11	137.85	0.27	0.27	804	3002	1923	Traces of dye plume at 30 ft
			9:49:20	30.34	20.12	138.13	0.94	0.47	804	1728		
			9:49:21	30.31	20.12	138.16	1.28	0.77	804	1040		
			9:49:22	30.33	20.12	138.08	0.54	0.11	804	7367		
			9:49:23	30.37	20.12	137.96	0.50	0.07	804	11723		
			9:49:24	30.37	20.12	138.00	0.02	0.02	804	36054		
			9:49:25	30.31	20.11	137.68	0.06	0.06	804	13467		
			9:49:26	30.32	20.11	137.70	0.41	0.41	804	1982		
			9:49:27	30.37	20.11	137.79	0.02	0.02	804	43934		
			9:49:28	30.40	20.11	137.77	0.05	0.05	804	15056		
			9:49:29	30.53	20.12	138.00	0.34	0.34	804	2387		
			9:49:30	30.60	20.12	137.94	0.17	0.17	804	4867		
			9:49:31	30.61	20.11	137.33	0.02	0.02	804	42094		
			9:49:32	30.63	20.11	137.07	0.02	0.02	804	39802		
			9:49:33	30.43	20.10	137.03	0.02	0.02	804	43459		
			9:49:34	30.33	20.10	136.95	0.02	0.02	804	43459		
			9:49:35	30.27	20.11	136.86	0.02	0.02	804	46207		
			9:49:36	30.18	20.11	137.05	0.02	0.02	804	41231		
			9:49:37	30.07	20.11	136.91	0.02	0.02	804	41875		

**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:49:38	29.93	20.11	136.81	0.02	0.02	804	42766		Low level dye plume at 30 ft
			9:49:39	29.79	20.11	137.46	0.02	0.02	804	41231		
			9:49:40	29.74	20.11	137.70	0.02	0.02	804	40606		
			9:49:41	29.60	20.11	137.60	0.02	0.02	804	44916		
			9:49:42	29.55	20.11	137.20	0.02	0.02	804	39802		
			9:49:43	29.54	20.10	137.67	0.02	0.02	804	40200		
			9:49:44	29.49	20.11	138.32	1.03	0.55	804	1462		
			9:49:45	29.43	20.11	138.87	2.93	2.25	804	357		
			9:49:46	29.45	20.12	139.19	3.14	2.43	804	330	359	
			9:49:47	29.42	20.12	139.11	3.30	2.58	804	312		
			9:49:48	29.38	20.12	138.63	2.47	1.83	804	438		
			9:49:49	29.35	20.11	137.99	0.81	0.34	804	2338		
			9:49:50	29.22	20.11	137.30	0.02	0.02	804	47294		
			9:49:51	29.09	20.11	137.08	0.02	0.02	804	47857		
			9:49:52	29.02	20.10	137.05	0.02	0.02	804	44420		
			9:49:53	28.95	20.10	137.03	0.02	0.02	804	41443		
			9:49:54	28.99	20.10	137.05	0.02	0.02	804	45424		
			9:49:55	28.90	20.11	137.15	0.02	0.02	804	42094		
			9:49:56	28.90	20.11	137.14	0.02	0.02	804	40402		
			9:49:57	28.84	20.10	137.05	0.02	0.02	804	40812		
			9:49:58	28.80	20.10	137.05	0.02	0.02	804	41231		
			9:49:59	28.72	20.10	137.05	0.02	0.02	804	43934		
			9:50:00	28.72	20.10	137.03	0.02	0.02	804	41443		
			9:50:01	28.63	20.10	137.03	0.02	0.02	804	42995		
			9:50:02	28.58	20.10	137.03	0.02	0.02	804	44420		
			9:50:03	28.55	20.10	137.05	0.02	0.02	804	44420		
			9:50:04	28.58	20.10	137.05	0.02	0.02	804	43934		
			9:50:05	28.52	20.10	137.01	0.02	0.02	804	42094		
			9:50:06	28.56	20.10	137.03	0.02	0.02	804	45682		
			9:50:07	28.64	20.10	137.03	0.02	0.02	804	42094		
			9:50:08	28.65	20.10	136.99	0.02	0.02	804	45682		
			9:50:09	28.71	20.10	136.99	0.02	0.02	804	44420		
			9:50:10	28.78	20.10	137.00	0.02	0.02	804	42540		
			9:50:11	28.82	20.10	136.99	0.02	0.02	804	46207		
			9:50:12	28.87	20.10	136.95	0.02	0.02	804	43934		
			9:50:13	28.91	20.10	136.95	0.02	0.02	804	44916		
			9:50:14	28.92	20.10	136.99	0.02	0.02	804	42094		
			9:50:15	29.02	20.10	136.95	0.02	0.02	804	45682		
			9:50:16	29.06	20.10	137.05	0.02	0.02	804	43934		

**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:50:17	29.07	20.10	137.41	0.02	0.02	804	44420		Traces of dye plume at 30 ft
			9:50:18	29.09	20.10	138.01	0.10	0.10	804	8445		
			9:50:19	29.15	20.11	138.48	0.70	0.25	804	3189	1821	
			9:50:20	29.15	20.11	138.58	1.60	1.06	804	760		
			9:50:21	29.15	20.11	138.14	1.01	0.53	804	1513		
			9:50:22	29.26	20.10	137.45	0.13	0.13	804	6311		
			9:50:23	29.26	20.10	137.05	0.02	0.02	804	40200		
			9:50:24	29.25	20.10	136.97	0.02	0.02	804	43459		
			9:50:25	29.31	20.10	136.96	0.02	0.02	804	42094		
			9:50:26	29.33	20.10	136.93	0.02	0.02	804	44916		
			9:50:27	29.31	20.10	136.93	0.02	0.02	804	42094		
			9:50:28	29.28	20.10	137.63	0.02	0.02	804	42540		
			9:50:29	29.32	20.11	138.10	0.19	0.19	804	4293		
			9:50:30	29.34	20.11	137.43	0.02	0.02	804	45169		
			9:50:31	29.25	20.10	137.14	0.02	0.02	804	41231		
			9:50:32	29.32	20.10	137.16	0.02	0.02	804	47294		
			9:50:33	29.28	20.10	137.53	0.02	0.02	804	43934		
			9:50:34	29.28	20.10	137.51	0.02	0.02	804	43459		
			9:50:35	29.26	20.10	137.33	0.02	0.02	804	42094		
			9:50:36	29.22	20.10	137.43	0.02	0.02	804	43934		
			9:50:37	29.32	20.10	137.14	0.02	0.02	804	42540		
			9:50:38	29.45	20.10	137.14	0.02	0.02	804	44916		
			9:50:39	29.54	20.10	137.27	0.02	0.02	804	44916		
			9:50:40	29.52	20.10	137.13	0.02	0.02	804	44420		
			9:50:41	29.56	20.10	137.05	0.02	0.02	804	42094		
			9:50:42	29.80	20.10	137.05	0.02	0.02	804	45424		
			9:50:43	30.23	20.10	137.05	0.02	0.02	804	44916		
			9:50:44	31.87	20.11	137.12	0.02	0.02	804	42540		
			9:50:45	34.02	20.10	137.22	0.02	0.02	804	42540		
			9:50:46	34.34	20.10	137.73	0.02	0.02	804	41231		
			9:50:47	34.37	20.10	137.65	0.02	0.02	804	42094		
			9:50:48	34.30	20.10	137.43	0.02	0.02	804	43459		
			9:50:49	34.24	20.10	137.27	0.02	0.02	804	40812		
			9:50:50	34.16	20.10	137.29	0.02	0.02	804	44916		
			9:50:51	33.92	20.10	137.24	0.02	0.02	804	42995		
			9:50:52	33.84	20.10	137.16	0.02	0.02	804	45943		
			9:50:53	33.96	20.10	137.27	0.02	0.02	804	41658		
			9:50:54	33.94	20.10	137.24	0.02	0.02	804	41658		
			9:50:55	33.92	20.10	137.25	0.02	0.02	804	46207		



**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:50:56	33.96	20.10	137.20	0.02	0.02	804	44420		
			9:50:57	33.95	20.10	137.24	0.02	0.02	804	42094		
			9:50:58	33.85	20.10	137.20	0.02	0.02	804	43934		
			9:50:59	33.76	20.10	137.53	0.02	0.02	804	43459		
			9:51:00	33.75	20.10	137.66	0.02	0.02	804	45943		
			9:51:01	33.73	20.10	137.77	0.02	0.02	804	42995		
			9:51:02	33.63	20.10	137.83	0.02	0.02	804	43459		
			9:51:03	33.64	20.10	137.78	0.02	0.02	804	40812		
			9:51:04	33.61	20.10	137.68	0.02	0.02	804	42995		
			9:51:05	33.75	20.10	137.60	0.02	0.02	804	42995		
			9:51:06	33.86	20.11	137.66	0.02	0.02	804	44420		
			9:51:07	34.50	20.11	137.89	0.02	0.02	804	42540		
			9:51:08	34.79	20.11	137.89	0.02	0.02	804	45169		
			9:51:09	35.11	20.11	138.11	0.09	0.09	804	9105		
			9:51:10	35.31	20.11	138.11	0.32	0.32	804	2514		
			9:51:11	35.36	20.11	137.63	0.04	0.04	804	21497		
			9:51:12	35.37	20.11	137.27	0.02	0.02	804	47294		
			9:51:13	35.39	20.11	136.95	0.02	0.02	804	44420		
			9:51:14	35.31	20.12	137.05	0.02	0.02	804	44916		
			9:51:15	35.25	20.11	137.20	0.02	0.02	804	46474		
			9:51:16	35.27	20.11	137.16	0.02	0.02	804	40812		
			9:51:17	35.34	20.11	137.29	0.02	0.02	804	45424		
			9:51:18	35.26	20.11	137.36	0.02	0.02	804	41231		
			9:51:19	35.16	20.11	137.20	0.02	0.02	804	46207		
			9:51:20	35.09	20.11	137.37	0.02	0.02	804	45943		
			9:51:21	34.91	20.11	137.37	0.02	0.02	804	42540		
			9:51:22	34.79	20.11	137.31	0.02	0.02	804	43934		
			9:51:23	34.73	20.11	137.35	0.02	0.02	804	45682		
			9:51:24	34.76	20.11	137.43	0.02	0.02	804	42094		
			9:51:25	34.77	20.11	137.49	0.02	0.02	804	44420		
			9:51:26	34.74	20.11	137.65	0.02	0.02	804	45424		
			9:51:27	34.74	20.11	137.85	0.02	0.02	804	46474		
			9:51:28	34.76	20.11	138.03	0.02	0.02	804	49630		
			9:51:29	34.71	20.11	137.96	0.02	0.02	804	44916		
			9:51:30	34.72	20.11	137.79	0.02	0.02	804	43459		
			9:51:31	34.76	20.11	137.64	0.02	0.02	804	43934		
			9:51:32	34.70	20.11	137.77	0.02	0.02	804	44420		
			9:51:33	34.67	20.11	137.96	0.02	0.02	804	41658		
			9:51:34	34.65	20.11	138.00	0.02	0.02	804	44916		

**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			9:51:35	34.68	20.11	137.96	0.02	0.02	804	43934		
			9:51:36	34.64	20.11	137.87	0.02	0.02	804	43459		
			9:51:37	34.62	20.11	137.98	0.02	0.02	804	42540		
			9:51:38	34.68	20.11	138.12	0.04	0.04	804	22776		
			9:51:39	34.69	20.11	138.23	0.04	0.04	804	20252		
			9:51:40	34.64	20.10	138.33	0.02	0.02	804	41658		
			9:51:41	34.66	20.10	138.30	0.12	0.12	804	6854		
			9:51:42	34.71	20.10	137.83	0.02	0.02	804	42995		
			9:51:43	34.67	20.10	137.41	0.02	0.02	804	43459		
			9:51:44	34.64	20.10	137.47	0.02	0.02	804	42540		
			9:51:45	34.62	20.10	137.91	0.02	0.02	804	43934		
			9:51:46	34.59	20.10	137.57	0.02	0.02	804	41443		
			9:51:47	34.50	20.10	137.39	0.02	0.02	804	45424		
			9:51:48	34.45	20.10	137.35	0.02	0.02	804	45424		
			9:51:49	34.43	20.10	137.41	0.02	0.02	804	48434		
			9:51:50	34.42	20.10	137.39	0.02	0.02	804	41231		
			9:51:51	34.40	20.10	137.39	0.02	0.02	804	45424		
			9:51:52	34.36	20.09	137.48	0.02	0.02	804	44420		
			9:51:53	34.37	20.09	137.46	0.02	0.02	804	45424		
			9:51:54	34.39	20.09	137.50	0.02	0.02	804	48434		
			9:51:55	34.36	20.09	137.43	0.02	0.02	804	43459		
			9:51:56	34.35	20.09	137.43	0.02	0.02	804	42094		
			9:51:57	34.37	20.09	137.37	0.02	0.02	804	42540		
			9:51:58	34.36	20.09	137.48	0.02	0.02	804	43459		
			9:51:59	34.35	20.09	137.41	0.02	0.02	804	42094		
			9:52:00	34.37	20.09	137.41	0.02	0.02	804	41231		
			9:52:01	34.34	20.09	137.43	0.02	0.02	804	40812		
			9:52:02	34.32	20.09	137.46	0.02	0.02	804	43934		
			9:52:03	34.28	20.09	137.41	0.02	0.02	804	40606		
			9:52:04	34.29	20.09	137.41	0.02	0.02	804	41443		
			9:52:05	34.24	20.09	137.46	0.02	0.02	804	42995		
			9:52:06	34.22	20.09	137.48	0.02	0.02	804	41231		
			9:52:07	34.19	20.09	137.48	0.02	0.02	804	42094		
			9:52:08	34.19	20.09	137.46	0.02	0.02	804	43934		
			9:52:09	34.22	20.09	137.48	0.02	0.02	804	43934		
			9:52:10	34.17	20.09	137.43	0.02	0.02	804	40812		
			9:52:11	34.22	20.09	137.51	0.02	0.02	804	42995		
			9:52:12	34.22	20.09	137.41	0.02	0.02	804	40200		
			9:52:13	34.20	20.09	137.47	0.02	0.02	804	41231		

**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:52:14	34.23	20.10	137.87	0.02	0.02	804	39802		Measured plume at 34-35 ft
			9:52:15	34.27	20.10	138.73	0.78	0.32	804	2510		
			9:52:16	34.33	20.10	139.17	1.64	1.09	804	736	467	
			9:52:17	34.36	20.10	139.28	2.05	1.46	804	549		
			9:52:18	34.38	20.10	139.68	3.58	2.83	804	284		
			9:52:19	34.46	20.11	139.84	3.52	2.78	804	289		
			9:52:20	34.53	20.11	139.65	2.29	1.68	804	479		
			9:52:21	34.58	20.11	139.32	1.14	0.64	804	1247		
			9:52:22	34.59	20.10	138.62	0.34	0.34	804	2391		
			9:52:23	34.67	20.10	138.18	0.02	0.02	804	42540		
			9:52:24	34.75	20.10	138.03	0.02	0.02	804	41658		
			9:52:25	34.73	20.10	138.31	0.04	0.04	804	22521		
			9:52:26	34.81	20.10	138.42	0.27	0.27	804	2958		
			9:52:27	34.85	20.10	138.80	1.30	0.79	804	1019		
			9:52:28	34.92	20.10	138.97	0.99	0.51	804	1569		
			9:52:29	35.00	20.10	139.64	2.10	1.51	804	533		
			9:52:30	35.05	20.11	140.60	4.17	3.36	804	239		
			9:52:31	35.09	20.11	140.70	4.98	4.09	804	197	354	
			9:52:32	35.12	20.11	140.46	4.34	3.52	804	229		
			9:52:33	35.20	20.11	139.90	2.34	1.73	804	466		
			9:52:34	35.14	20.11	139.41	2.63	1.98	804	406		
			9:52:35	35.17	20.11	139.91	2.60	1.96	804	411		
			9:52:36	35.17	20.11	139.61	0.73	0.28	804	2865		
			9:52:37	35.09	20.10	138.01	0.02	0.02	804	46744		
			9:52:38	35.04	20.10	138.25	0.02	0.02	804	42540		
			9:52:39	35.00	20.10	138.42	0.02	0.02	804	49024		
			9:52:40	34.92	20.10	139.17	0.24	0.24	804	3299		
			9:52:41	34.87	20.10	138.80	0.02	0.02	804	42766		
			9:52:42	34.81	20.10	138.90	1.56	1.02	804	790		
			9:52:43	34.79	20.10	138.44	0.23	0.23	804	3449		
			9:52:44	34.72	20.10	138.65	0.28	0.28	804	2858		
			9:52:45	34.70	20.10	138.24	0.16	0.16	804	5060		
			9:52:46	34.67	20.10	137.65	0.02	0.02	804	42995		
			9:52:47	34.79	20.10	137.61	0.02	0.02	804	42995		
			9:52:48	34.76	20.10	138.19	0.02	0.02	804	48434		
			9:52:49	34.74	20.10	138.54	1.06	0.58	804	1397		
			9:52:50	34.90	20.10	138.79	1.33	0.81	804	989		
			9:52:51	35.11	20.10	139.04	1.04	0.55	804	1450		
			9:52:52	35.38	20.11	139.13	1.45	0.92	804	872		

**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:52:53	35.68	20.11	138.83	1.09	0.60	804	1348	1000	Measured plume at 36-37 ft
			9:52:54	36.03	20.11	138.48	1.38	0.86	804	935		
			9:52:55	36.23	20.11	138.67	1.39	0.86	804	930		
			9:52:56	36.41	20.11	139.21	1.97	1.39	804	579		
			9:52:57	36.59	20.11	139.36	2.20	1.59	804	504		
			9:52:58	36.85	20.11	138.24	0.10	0.10	804	8105		
			9:52:59	37.04	20.11	137.48	0.02	0.02	804	40606		
			9:53:00	37.13	20.11	137.51	0.02	0.02	804	42540		
			9:53:01	37.02	20.11	137.77	0.02	0.02	804	36216		
			9:53:02	37.05	20.11	138.08	0.05	0.05	804	15256		
			9:53:03	36.94	20.11	138.05	0.72	0.27	804	3016		
			9:53:04	36.86	20.11	138.20	0.02	0.02	804	44420		
			9:53:05	36.79	20.11	139.02	2.22	1.62	804	497	518	Measured plume at 36-37 ft
			9:53:06	36.64	20.11	138.75	2.08	1.49	804	539		
			9:53:07	36.51	20.11	138.02	0.04	0.04	804	17987		
			9:53:08	36.37	20.11	137.82	0.27	0.27	804	2977		
			9:53:09	36.20	20.11	137.29	0.02	0.02	804	42540		
			9:53:10	36.03	20.10	137.14	0.02	0.02	804	42094		
			9:53:11	35.90	20.10	137.27	0.02	0.02	804	40812		
			9:53:12	35.74	20.10	137.22	0.02	0.02	804	43459		
			9:53:13	35.64	20.10	137.12	0.02	0.02	804	41443		
			9:53:14	35.63	20.10	137.12	0.02	0.02	804	41231		
			9:53:15	35.65	20.10	137.03	0.02	0.02	804	42540		
			9:53:16	35.74	20.11	136.99	0.02	0.02	804	42094		
			9:53:17	35.92	20.11	136.97	0.02	0.02	804	45424		
			9:53:18	36.01	20.11	136.99	0.02	0.02	804	44916		
			9:53:19	36.13	20.11	136.97	0.02	0.02	804	47294		
			9:53:20	36.20	20.11	136.97	0.02	0.02	804	47294		
			9:53:21	36.21	20.11	137.01	0.02	0.02	804	44420		
			9:53:22	36.20	20.11	136.99	0.02	0.02	804	46744		
			9:53:23	36.23	20.11	136.99	0.02	0.02	804	45424		
			9:53:24	36.17	20.10	137.01	0.02	0.02	804	45943		
			9:53:25	36.21	20.10	137.10	0.02	0.02	804	47294		
			9:53:26	36.28	20.10	137.07	0.02	0.02	804	49630		
			9:53:27	36.28	20.10	137.03	0.02	0.02	804	52549		
			9:53:28	36.26	20.11	137.12	0.02	0.02	804	39802		
			9:53:29	36.23	20.11	137.10	0.02	0.02	804	46744		
			9:53:30	36.14	20.10	137.10	0.02	0.02	804	44916		
			9:53:31	36.15	20.10	137.12	0.02	0.02	804	42540		

**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:53:32	35.96	20.10	137.05	0.02	0.02	804	42995		
			9:53:33	35.77	20.11	137.10	0.02	0.02	804	41231		
			9:53:34	35.57	20.11	137.07	0.02	0.02	804	45682		
			9:53:35	35.36	20.10	137.12	0.02	0.02	804	41658		
			9:53:36	35.22	20.10	137.20	0.02	0.02	804	42540		
			9:53:37	35.28	20.10	137.16	0.02	0.02	804	44420		
			9:53:38	35.10	20.10	137.22	0.02	0.02	804	43934		
			9:53:39	34.94	20.10	137.31	0.02	0.02	804	47857		
			9:53:40	35.01	20.10	137.16	0.02	0.02	804	49630		
			9:53:41	35.44	20.10	137.20	0.02	0.02	804	49024		
			9:53:42	37.76	20.10	137.58	0.02	0.02	804	42995		
			9:53:43	39.50	20.11	137.68	0.02	0.02	804	44420		
			9:53:44	39.66	20.11	137.79	0.02	0.02	804	41658		
			9:53:45	39.69	20.11	137.77	0.02	0.02	804	38286		
			9:53:46	39.80	20.11	137.81	0.02	0.02	804	45169		
			9:53:47	39.70	20.11	137.85	0.02	0.02	804	49024		
			9:53:48	39.68	20.11	137.89	0.02	0.02	804	41020		
			9:53:49	39.70	20.11	137.92	0.02	0.02	804	42540		
			9:53:50	39.73	20.11	137.94	0.02	0.02	804	44667		
			9:53:51	39.66	20.11	137.96	0.05	0.05	804	17253		
			9:53:52	39.65	20.11	138.11	0.06	0.06	804	14180		
			9:53:53	39.57	20.11	138.11	0.08	0.08	804	9805		
			9:53:54	39.61	20.11	138.08	0.11	0.11	804	7650		
			9:53:55	39.40	20.11	138.06	0.13	0.13	804	6228		
			9:53:56	39.35	20.11	138.29	0.52	0.09	804	9149		
			9:53:57	39.23	20.11	138.14	0.35	0.35	804	2312		
			9:53:58	39.16	20.11	138.20	0.07	0.07	804	11388		
			9:53:59	39.09	20.11	138.19	0.21	0.21	804	3918		
			9:54:00	39.05	20.11	138.06	0.02	0.02	804	39412		
			9:54:01	38.98	20.11	138.02	0.02	0.02	804	44916		
			9:54:02	39.01	20.11	138.20	0.33	0.33	804	2445		
			9:54:03	38.99	20.11	138.29	0.63	0.18	804	4351		
			9:54:04	38.96	20.11	138.49	1.02	0.53	804	1506	2679	Traces of plume at 39 ft
			9:54:05	38.89	20.11	138.48	1.17	0.67	804	1193		
			9:54:06	38.84	20.11	138.46	0.74	0.29	804	2814		
			9:54:07	38.78	20.11	138.42	0.66	0.21	804	3765		
			9:54:08	38.69	20.11	138.35	0.45	0.03	804	27621		
			9:54:09	38.76	20.11	138.42	0.72	0.27	804	2965		
			9:54:10	38.69	20.11	138.13	0.02	0.02	804	40812		

**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:54:11	38.63	20.11	137.89	0.02	0.02	804	43459		
			9:54:12	38.63	20.11	138.06	0.05	0.05	804	16275		
			9:54:13	38.58	20.11	138.12	0.52	0.09	804	9438		
			9:54:14	38.62	20.11	137.85	0.02	0.02	804	41658		
			9:54:15	38.64	20.11	137.83	0.02	0.02	804	39802		
			9:54:16	38.68	20.11	138.00	0.11	0.11	804	7606		
			9:54:17	38.70	20.11	138.23	0.57	0.13	804	6128		
			9:54:18	38.77	20.11	138.10	0.10	0.10	804	8048		
			9:54:19	38.77	20.11	137.84	0.02	0.02	804	42540		
			9:54:20	38.83	20.11	138.04	0.14	0.14	804	5690		
			9:54:21	38.85	20.11	138.11	0.04	0.04	804	21497		
			9:54:22	38.84	20.11	137.77	0.02	0.02	804	43459		
			9:54:23	38.86	20.11	137.65	0.02	0.02	804	40606		
			9:54:24	38.82	20.11	138.08	0.20	0.20	804	4030		
			9:54:25	38.83	20.11	138.02	0.02	0.02	804	45943		
			9:54:26	38.88	20.11	137.94	0.02	0.02	804	42094		
			9:54:27	38.92	20.11	137.78	0.02	0.02	804	43934		
			9:54:28	38.95	20.11	138.18	0.34	0.34	804	2341		
			9:54:29	39.00	20.11	138.39	0.94	0.47	804	1713	3620	Traces of plume at 39 ft
			9:54:30	39.09	20.11	138.42	0.55	0.12	804	6807		
			9:54:31	39.14	20.11	138.18	0.48	0.05	804	15075		
			9:54:32	39.10	20.11	137.89	0.02	0.02	804	42540		
			9:54:33	39.13	20.11	137.85	0.02	0.02	804	43459		
			9:54:34	39.19	20.11	137.82	0.02	0.02	804	43934		
			9:54:35	39.19	20.11	137.87	0.02	0.02	804	42094		
			9:54:36	39.24	20.11	138.00	0.02	0.02	804	40200		
			9:54:37	39.31	20.11	138.11	0.02	0.02	804	42540		
			9:54:38	39.30	20.11	138.11	0.02	0.02	804	44667		
			9:54:39	39.30	20.11	137.98	0.02	0.02	804	44420		
			9:54:40	39.31	20.11	138.02	0.02	0.02	804	43459		
			9:54:41	39.45	20.11	137.71	0.02	0.02	804	42540		
			9:54:42	39.45	20.11	137.70	0.02	0.02	804	39029		
			9:54:43	39.46	20.11	137.77	0.02	0.02	804	44420		
			9:54:44	39.57	20.11	137.77	0.02	0.02	804	40402		
			9:54:45	39.69	20.11	138.04	0.02	0.02	804	42540		
			9:54:46	39.67	20.11	138.08	0.02	0.02	804	42094		
			9:54:47	39.72	20.11	138.11	0.02	0.02	804	44916		
			9:54:48	39.70	20.11	138.11	0.02	0.02	804	42540		
			9:54:49	39.80	20.11	138.19	0.18	0.18	804	4413		

**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:54:50	39.74	20.11	138.23	0.40	0.40	804	2015	2898	Traces of plume at 39 ft
			9:54:51	39.71	20.11	138.31	0.36	0.36	804	2265		
			9:54:52	39.73	20.11	138.25	0.44	0.02	804	47556		
			9:54:53	39.74	20.11	138.21	0.73	0.28	804	2909		
			9:54:54	39.67	20.11	137.91	0.02	0.02	804	37570		
			9:54:55	39.63	20.11	137.94	0.02	0.02	804	44916		
			9:54:56	39.69	20.11	137.81	0.02	0.02	804	42540		
			9:54:57	39.64	20.11	138.09	0.05	0.05	804	15491		
			9:54:58	39.59	20.11	138.21	0.30	0.30	804	2690		
			9:54:59	39.56	20.11	138.11	0.13	0.13	804	5973	4186	Traces of plume at 39 ft
			9:55:00	39.62	20.11	138.22	0.21	0.21	804	3895		
			9:55:01	39.55	20.11	138.31	0.07	0.07	804	11552		Traces of plume at 39 ft
			9:55:02	39.58	20.11	138.24	0.22	0.22	804	3727		
			9:55:03	39.64	20.11	138.48	1.01	0.53	804	1512	2523	
			9:55:04	39.69	20.11	138.49	0.81	0.35	804	2329		
			9:55:05	39.71	20.11	138.27	0.16	0.16	804	5019		
			9:55:06	39.64	20.11	138.23	0.09	0.09	804	8835		
			9:55:07	39.79	20.11	138.42	0.44	0.02	804	38888		
			9:55:08	39.85	20.11	138.48	0.75	0.30	804	2709		
			9:55:09	39.82	20.11	138.56	1.04	0.55	804	1461		
			9:55:10	39.85	20.11	138.46	0.60	0.16	804	4994		
			9:55:11	40.03	20.11	138.50	0.47	0.04	804	18347		
			9:55:12	39.86	20.11	138.47	0.90	0.43	804	1882		
			9:55:13	39.86	20.11	138.42	0.89	0.42	804	1922		
			9:55:14	39.95	20.11	138.46	0.78	0.32	804	2504	2471	Traces of plume at 39 ft
			9:55:15	39.93	20.11	138.44	0.70	0.25	804	3258		
			9:55:16	39.93	20.11	138.42	0.91	0.44	804	1838		
			9:55:17	39.84	20.11	138.24	0.24	0.24	804	3421		
			9:55:18	39.80	20.11	138.20	0.07	0.07	804	11372		
			9:55:19	39.85	20.11	138.25	0.20	0.20	804	3943		
			9:55:20	39.74	20.11	138.34	0.07	0.07	804	11453		
			9:55:21	39.65	20.11	138.54	0.54	0.10	804	7858		
			9:55:22	39.70	20.11	138.27	0.27	0.27	804	2926		
			9:55:23	39.65	20.11	138.20	0.29	0.29	804	2790		
			9:55:24	39.61	20.11	138.23	0.15	0.15	804	5418		
			9:55:25	39.62	20.11	138.14	0.02	0.02	804	47857		
			9:55:26	39.60	20.11	138.33	0.71	0.26	804	3087		
			9:55:27	39.44	20.11	138.33	0.92	0.44	804	1815		
			9:55:28	39.46	20.11	138.48	1.01	0.52	804	1533		

**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:55:29	39.44	20.11	138.63	1.08	0.59	804	1367		Traces of plume at 44 ft
			9:55:30	39.56	20.11	138.58	0.74	0.28	804	2834		
			9:55:31	39.64	20.11	138.71	1.51	0.98	804	824		
			9:55:32	40.80	20.11	138.73	1.70	1.14	804	703	1519	
			9:55:33	43.61	20.11	138.54	0.96	0.48	804	1679		
			9:55:34	44.68	20.11	138.51	1.06	0.58	804	1397		
			9:55:35	44.76	20.11	138.44	0.78	0.32	804	2506		
			9:55:36	44.84	20.11	138.39	0.81	0.35	804	2320		
			9:55:37	44.90	20.11	138.42	0.68	0.23	804	3518		
			9:55:38	44.77	20.11	138.33	1.06	0.58	804	1398		
			9:55:39	44.76	20.11	138.31	0.91	0.44	804	1828		
			9:55:40	44.71	20.11	138.37	0.98	0.50	804	1614		
			9:55:41	44.70	20.11	138.41	1.09	0.60	804	1343		
			9:55:42	44.84	20.11	138.54	0.83	0.37	804	2170		
			9:55:43	44.76	20.11	138.63	1.32	0.81	804	996		
			9:55:44	44.77	20.11	138.65	1.20	0.70	804	1146		
			9:55:45	44.72	20.11	138.65	1.17	0.67	804	1195		
			9:55:46	44.58	20.11	138.52	0.95	0.47	804	1705		
			9:55:47	44.57	20.11	138.56	0.74	0.29	804	2816		
			9:55:48	44.49	20.11	138.54	1.01	0.52	804	1532		
			9:55:49	44.48	20.11	138.70	1.50	0.96	804	833		
			9:55:50	44.40	20.11	138.99	1.92	1.34	804	598		
			9:55:51	44.41	20.11	139.19	2.13	1.53	804	525		
			9:55:52	44.46	20.11	139.15	2.26	1.65	804	487		
			9:55:53	44.42	20.11	139.15	2.11	1.51	804	532		
			9:55:54	44.43	20.11	139.09	2.25	1.64	804	490		
			9:55:55	44.49	20.11	138.93	1.67	1.12	804	716	696	
			9:55:56	44.49	20.11	138.82	1.39	0.87	804	924		
			9:55:57	44.46	20.11	138.95	1.70	1.15	804	700		
			9:55:58	44.47	20.11	138.92	1.88	1.31	804	616		
			9:55:59	44.51	20.11	138.88	1.77	1.21	804	666		
			9:56:00	44.50	20.11	138.86	1.64	1.09	804	738		
			9:56:01	44.51	20.11	138.88	1.50	0.96	804	835		
			9:56:02	44.61	20.11	138.98	1.50	0.97	804	827		
			9:56:03	44.58	20.11	138.94	1.67	1.12	804	718		
			9:56:04	44.63	20.11	138.99	1.63	1.09	804	740		
			9:56:05	44.63	20.11	138.87	1.42	0.90	804	894		
			9:56:06	44.68	20.11	138.46	0.27	0.27	804	2927		
			9:56:07	44.68	20.11	138.23	0.02	0.02	804	48434		



**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:56:08	44.70	20.11	138.33	0.07	0.07	804	12108		Traces of plume at 44 ft
			9:56:09	44.68	20.11	138.12	0.02	0.02	804	45943		
			9:56:10	44.71	20.10	138.00	0.02	0.02	804	47294		
			9:56:11	44.70	20.11	138.11	0.10	0.10	804	7898		
			9:56:12	44.68	20.11	138.42	0.40	0.40	804	2005		
			9:56:13	44.76	20.11	138.54	1.27	0.76	804	1059		
			9:56:14	44.78	20.11	138.42	0.86	0.39	804	2052	1706	
			9:56:15	44.94	20.11	138.35	0.87	0.40	804	2007		
			9:56:16	44.84	20.11	138.33	0.65	0.20	804	3982		
			9:56:17	44.83	20.11	138.48	1.46	0.93	804	864		
			9:56:18	44.78	20.11	138.48	0.52	0.09	804	9321		
			9:56:19	44.80	20.11	138.13	0.02	0.02	804	36054		
			9:56:20	44.76	20.10	138.02	0.02	0.02	804	46207		
			9:56:21	44.71	20.10	137.69	0.02	0.02	804	39412		
			9:56:22	44.64	20.10	137.91	0.02	0.02	804	46207		
			9:56:23	44.66	20.10	138.34	0.48	0.05	804	15682		
			9:56:24	44.67	20.11	138.69	1.32	0.81	804	997		
			9:56:25	44.75	20.11	138.78	1.91	1.34	804	600		
			9:56:26	44.74	20.11	139.03	2.11	1.51	804	531	815	
			9:56:27	44.71	20.11	139.11	1.53	1.00	804	806		
			9:56:28	44.73	20.11	138.85	1.21	0.70	804	1142		
			9:56:29	44.72	20.11	138.61	0.46	0.03	804	23493		
			9:56:30	44.73	20.11	138.48	0.67	0.22	804	3592		
			9:56:31	44.72	20.11	138.22	0.04	0.04	804	18829		
			9:56:32	44.74	20.11	138.37	0.52	0.09	804	8886		
			9:56:33	44.73	20.11	138.35	0.14	0.14	804	5920		
			9:56:34	44.73	20.11	138.27	0.46	0.04	804	22952		
			9:56:35	44.77	20.11	138.29	0.24	0.24	804	3391		
			9:56:36	44.79	20.11	138.35	0.59	0.15	804	5279		
			9:56:37	44.77	20.11	138.37	0.52	0.09	804	9340		
			9:56:38	44.82	20.11	138.29	0.49	0.06	804	13426		
			9:56:39	44.81	20.11	138.37	0.90	0.43	804	1889		
			9:56:40	44.78	20.11	138.56	1.35	0.83	804	970		
			9:56:41	44.83	20.11	138.49	0.33	0.33	804	2406		
			9:56:42	44.75	20.11	138.27	0.10	0.10	804	8138		
			9:56:43	44.81	20.11	138.29	0.39	0.39	804	2073		
			9:56:44	44.80	20.11	138.35	0.73	0.28	804	2862		
			9:56:45	44.74	20.11	138.58	0.70	0.25	804	3247		
			9:56:46	44.73	20.11	138.61	1.19	0.69	804	1162		

**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:56:47	44.68	20.11	138.77	1.74	1.19	804	678	685	Plume at 44 ft
			9:56:48	44.66	20.11	139.25	3.17	2.46	804	327		
			9:56:49	44.69	20.11	138.87	2.12	1.52	804	527		
			9:56:50	44.62	20.11	138.63	1.65	1.10	804	730		
			9:56:51	44.62	20.11	138.38	0.39	0.39	804	2044		
			9:56:52	44.70	20.11	137.91	0.03	0.03	804	27347		
			9:56:53	44.67	20.10	138.08	0.69	0.24	804	3352		
			9:56:54	44.66	20.10	138.24	0.72	0.27	804	2981		
			9:56:55	44.68	20.10	138.29	0.85	0.38	804	2101		
			9:56:56	44.73	20.11	138.45	0.62	0.18	804	4566		
			9:56:57	44.64	20.11	138.54	0.74	0.29	804	2813		
			9:56:58	44.69	20.11	138.58	1.04	0.55	804	1460		
			9:56:59	44.68	20.11	138.61	0.87	0.40	804	2018		
			9:57:00	44.64	20.11	138.56	0.74	0.28	804	2860		
			9:57:01	44.64	20.11	138.52	0.84	0.38	804	2130		
			9:57:02	44.64	20.10	138.52	0.62	0.18	804	4480		
			9:57:03	44.57	20.10	138.56	0.80	0.34	804	2365		
			9:57:04	44.60	20.10	138.29	0.63	0.19	804	4234		
			9:57:05	44.65	20.10	138.25	0.39	0.39	804	2040		
			9:57:06	44.64	20.10	138.27	0.24	0.24	804	3405		
			9:57:07	44.62	20.10	138.23	0.47	0.04	804	19171		
			9:57:08	44.67	20.10	138.31	0.51	0.08	804	10283		
			9:57:09	44.69	20.10	138.37	0.39	0.39	804	2065		
			9:57:10	44.63	20.10	138.48	0.57	0.13	804	6128		
			9:57:11	44.65	20.10	138.61	0.57	0.14	804	5913		
			9:57:12	44.66	20.10	138.52	0.93	0.46	804	1766		
			9:57:13	44.60	20.10	138.42	0.58	0.14	804	5703		
			9:57:14	44.66	20.10	138.34	0.17	0.17	804	4699		
			9:57:15	44.63	20.10	138.54	0.02	0.02	804	42094		
			9:57:16	44.54	20.11	138.80	0.13	0.13	804	6417		
			9:57:17	44.52	20.11	138.71	0.58	0.14	804	5649		
			9:57:18	44.48	20.10	138.62	0.46	0.04	804	20819		
			9:57:19	44.44	20.10	138.31	0.02	0.02	804	45424		
			9:57:20	44.45	20.10	138.23	0.02	0.02	804	43934		
			9:57:21	44.43	20.10	138.27	0.13	0.13	804	6267		
			9:57:22	44.44	20.10	138.08	0.02	0.02	804	43934		
			9:57:23	44.35	20.10	138.00	0.02	0.02	804	47018		
			9:57:24	44.27	20.10	137.98	0.02	0.02	804	45169		
			9:57:25	44.24	20.10	138.04	0.02	0.02	804	45682		

**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured	Calibration-	Measured	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							Dye Conc. (ppb)	Corrected Dye Conc. (ppb)	Initial Dye Conc. (ppb)			
			9:57:26	44.28	20.10	138.06	0.02	0.02	804	43934		
			9:57:27	44.28	20.10	137.75	0.02	0.02	804	46207		
			9:57:28	44.25	20.10	137.75	0.02	0.02	804	47294		
			9:57:29	44.28	20.10	137.72	0.02	0.02	804	42094		
			9:57:30	44.15	20.10	137.64	0.02	0.02	804	42995		
			9:57:31	44.19	20.10	137.70	0.02	0.02	804	46474		
			9:57:32	44.20	20.10	138.02	0.02	0.02	804	43934		
			9:57:33	44.29	20.10	137.96	0.02	0.02	804	42995		
			9:57:34	44.33	20.10	137.94	0.02	0.02	804	45424		
			9:57:35	44.36	20.10	137.85	0.02	0.02	804	43459		
			9:57:36	44.20	20.10	137.66	0.02	0.02	804	40812		
			9:57:37	44.28	20.10	137.57	0.02	0.02	804	46207		
			9:57:38	44.24	20.10	137.60	0.02	0.02	804	44916		
			9:57:39	44.27	20.10	137.67	0.02	0.02	804	42540		
			9:57:40	44.27	20.10	137.60	0.02	0.02	804	44420		
			9:57:41	44.29	20.10	137.88	0.02	0.02	804	45682		
			9:57:42	44.34	20.10	138.02	0.02	0.02	804	45424		
			9:57:43	44.35	20.10	138.04	0.02	0.02	804	46207		
			9:57:44	44.33	20.10	138.25	0.49	0.06	804	13055		
			9:57:45	44.37	20.10	138.15	0.02	0.02	804	38654		
			9:57:46	44.36	20.10	138.00	0.02	0.02	804	46744		
			9:57:47	44.42	20.10	138.06	0.02	0.02	804	43934		
			9:57:48	44.39	20.10	138.11	0.02	0.02	804	45169		
			9:57:49	44.41	20.10	138.11	0.02	0.02	804	43934		
			9:57:50	44.42	20.10	138.16	0.02	0.02	804	39412		
			9:57:51	44.45	20.10	138.13	0.02	0.02	804	32683		
			9:57:52	44.47	20.10	138.31	0.03	0.03	804	27162		
			9:57:53	44.51	20.10	138.27	0.02	0.02	804	34805		
			9:57:54	44.45	20.10	138.29	0.14	0.14	804	5938		
			9:57:55	44.50	20.11	138.44	0.67	0.22	804	3673		
			9:57:56	44.60	20.11	138.59	0.82	0.36	804	2263		
			9:57:57	44.63	20.11	138.54	0.59	0.15	804	5227		
			9:57:58	44.62	20.11	138.46	0.52	0.09	804	8966		
			9:57:59	44.60	20.10	138.42	0.44	0.02	804	47556		
			9:58:00	44.65	20.10	138.54	1.17	0.67	804	1194		
			9:58:01	44.71	20.11	138.69	1.35	0.83	804	971		
			9:58:02	44.69	20.11	138.80	1.25	0.74	804	1082	1039	Plume at 45 ft
			9:58:03	44.72	20.11	138.88	1.40	0.88	804	917		
			9:58:04	44.84	20.11	138.88	1.29	0.78	804	1029		

**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured	Calibration-	Measured	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							Dye Conc. (ppb)	Corrected Dye Conc. (ppb)	Initial Dye Conc. (ppb)			
			9:58:05	44.79	20.11	138.84	1.41	0.88	804	910		
			9:58:06	44.84	20.11	138.73	1.16	0.67	804	1207		
			9:58:07	44.93	20.11	138.69	0.76	0.30	804	2653		
			9:58:08	44.86	20.11	138.65	0.55	0.12	804	6761		
			9:58:09	44.82	20.11	138.58	0.82	0.35	804	2273		
			9:58:10	44.73	20.11	138.48	0.99	0.51	804	1589		
			9:58:11	44.75	20.11	138.49	0.53	0.10	804	8317		
			9:58:12	44.71	20.11	138.46	0.22	0.22	804	3688		
			9:58:13	44.73	20.11	138.48	0.31	0.31	804	2620		
			9:58:14	44.71	20.11	138.50	0.53	0.09	804	8531		
			9:58:15	44.71	20.11	138.54	0.50	0.07	804	10830		
			9:58:16	44.70	20.11	138.65	0.63	0.19	804	4330		
			9:58:17	44.69	20.11	138.67	0.78	0.32	804	2518		
			9:58:18	44.78	20.11	138.70	0.73	0.28	804	2919		
			9:58:19	44.81	20.11	138.71	0.82	0.36	804	2264		
			9:58:20	44.79	20.11	138.73	1.02	0.53	804	1505		
			9:58:21	44.77	20.11	138.65	0.80	0.34	804	2362		
			9:58:22	44.79	20.10	138.56	0.32	0.32	804	2531		
			9:58:23	44.82	20.11	138.82	1.46	0.93	804	864		
			9:58:24	44.84	20.11	138.90	1.73	1.17	804	686		
			9:58:25	44.86	20.11	138.78	0.88	0.41	804	1960		
			9:58:26	44.87	20.11	138.67	0.88	0.41	804	1952		
			9:58:27	44.89	20.10	138.65	0.81	0.35	804	2321		
			9:58:28	44.88	20.10	138.82	1.25	0.74	804	1087		
			9:58:29	44.89	20.11	139.03	1.90	1.32	804	607		
			9:58:30	44.97	20.11	139.23	2.28	1.67	804	482		
			9:58:31	45.05	20.11	139.28	2.04	1.45	804	555		
			9:58:32	44.97	20.11	139.13	2.24	1.63	804	494		
			9:58:33	45.01	20.11	139.23	1.91	1.33	804	602		
			9:58:34	44.98	20.11	139.15	1.88	1.31	804	615		
			9:58:35	44.98	20.11	138.87	1.77	1.21	804	664		
			9:58:36	44.97	20.11	138.94	1.47	0.94	804	854		
			9:58:37	45.00	20.11	139.06	1.79	1.23	804	654		
			9:58:38	45.00	20.11	139.09	2.05	1.46	804	551		
			9:58:39	44.95	20.11	139.17	2.24	1.63	804	492	540	Plume at 45 ft
			9:58:40	44.99	20.11	139.27	1.98	1.40	804	575		
			9:58:41	45.00	20.11	139.21	2.26	1.65	804	488		
			9:58:42	45.07	20.11	139.11	2.15	1.55	804	520		
			9:58:43	45.07	20.11	139.17	2.15	1.55	804	520		

**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:58:44	45.15	20.11	139.09	2.34	1.72	804	468		
			9:58:45	45.13	20.11	138.99	2.46	1.83	804	439		
			9:58:46	45.14	20.11	139.21	3.70	2.94	804	273		
			9:58:47	45.17	20.11	139.32	2.56	1.92	804	418		
			9:58:48	45.05	20.11	139.28	2.21	1.60	804	501		
			9:58:49	45.10	20.11	139.30	2.29	1.68	804	479		
			9:58:50	45.08	20.11	139.11	2.00	1.42	804	566		
			9:58:51	45.11	20.11	139.05	1.91	1.34	804	601		
			9:58:52	45.05	20.11	138.69	0.92	0.44	804	1815		
			9:58:53	45.05	20.10	138.58	0.89	0.42	804	1920		
			9:58:54	45.07	20.10	138.50	0.63	0.19	804	4238		
			9:58:55	45.06	20.10	138.63	1.04	0.55	804	1452		
			9:58:56	44.96	20.11	138.69	1.39	0.87	804	921		
			9:58:57	44.94	20.11	138.63	0.92	0.45	804	1792	1579	Plume traces at 45 ft
			9:58:58	44.97	20.10	138.54	0.95	0.48	804	1689		
			9:58:59	44.96	20.10	138.56	0.90	0.43	804	1887		
			9:59:00	44.87	20.10	138.54	0.94	0.46	804	1729		
			9:59:01	44.76	20.10	138.50	0.50	0.07	804	11957		
			9:59:02	44.78	20.10	138.39	0.82	0.36	804	2259		
			9:59:03	44.73	20.10	138.44	0.28	0.28	804	2882	3007	Plume traces at 45 ft
			9:59:04	44.60	20.10	138.48	0.30	0.30	804	2654		
			9:59:05	44.63	20.10	138.46	0.19	0.19	804	4232		
			9:59:06	44.65	20.10	138.48	0.50	0.07	804	12168		
			9:59:07	44.60	20.10	138.48	0.69	0.24	804	3282		
			9:59:08	44.60	20.10	138.48	0.49	0.06	804	13548		
			9:59:09	44.60	20.10	138.46	0.51	0.08	804	10355		
			9:59:10	44.59	20.10	138.37	0.06	0.06	804	14056		
			9:59:11	44.58	20.10	138.12	0.02	0.02	804	44916		
			9:59:12	44.52	20.10	138.00	0.02	0.02	804	43459		
			9:59:13	44.52	20.10	138.02	0.02	0.02	804	43934		
			9:59:14	44.53	20.10	138.04	0.13	0.13	804	6218		
			9:59:15	44.51	20.10	138.02	0.02	0.02	804	42995		
			9:59:16	44.45	20.10	138.11	0.03	0.03	804	25283		
			9:59:17	44.43	20.10	138.11	0.11	0.11	804	7410		
			9:59:18	44.46	20.10	138.04	0.02	0.02	804	40200		
			9:59:19	44.44	20.10	137.98	0.02	0.02	804	45943		
			9:59:20	44.38	20.10	137.79	0.02	0.02	804	46207		
			9:59:21	44.42	20.10	137.98	0.02	0.02	804	43459		
			9:59:22	44.41	20.10	138.15	0.02	0.02	804	43934		

**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			9:59:23	44.41	20.10	138.06	0.02	0.02	804	43934		
			9:59:24	44.42	20.10	137.87	0.02	0.02	804	44916		
			9:59:25	44.41	20.10	137.86	0.02	0.02	804	50250		
			9:59:26	44.37	20.10	137.75	0.02	0.02	804	44420		
			9:59:27	44.42	20.10	137.77	0.02	0.02	804	43934		
			9:59:28	44.36	20.10	137.91	0.02	0.02	804	46207		
			9:59:29	44.34	20.10	137.89	0.02	0.02	804	48434		
			9:59:30	44.34	20.10	137.87	0.02	0.02	804	46474		
			9:59:31	44.33	20.10	138.04	0.02	0.02	804	43459		
			9:59:32	44.27	20.10	138.13	0.02	0.02	804	41231		
			9:59:33	44.28	20.10	138.22	0.03	0.03	804	27534		
			9:59:34	44.30	20.10	138.29	0.10	0.10	804	8229		
			9:59:35	44.25	20.10	138.42	0.38	0.38	804	2117		
			9:59:36	44.25	20.10	138.33	0.21	0.21	804	3832		
			9:59:37	44.17	20.10	138.54	0.93	0.46	804	1752	2775	Plume traces at 45 ft
			9:59:38	44.23	20.10	138.52	0.69	0.24	804	3400		
			9:59:39	44.13	20.10	138.44	0.63	0.18	804	4364		
			9:59:40	44.14	20.10	138.52	0.24	0.24	804	3418		
			9:59:41	44.13	20.10	138.39	0.02	0.02	804	42995		
			9:59:42	44.12	20.10	138.35	0.20	0.20	804	4096		
			9:59:43	44.15	20.10	138.50	0.59	0.15	804	5264		
			9:59:44	44.10	20.10	138.52	0.58	0.14	804	5589		
			9:59:45	44.05	20.10	138.58	0.86	0.39	804	2052		
			9:59:46	44.06	20.10	138.65	1.32	0.81	804	995		
			9:59:47	43.99	20.10	138.58	1.02	0.53	804	1503		
			9:59:48	43.93	20.10	138.68	0.86	0.39	804	2038		
			9:59:49	43.92	20.10	138.86	1.16	0.66	804	1216		
			9:59:50	43.95	20.10	138.90	1.49	0.96	804	841		
			9:59:51	43.97	20.10	138.87	1.43	0.91	804	887		
			9:59:52	43.88	20.10	138.63	0.84	0.37	804	2151		
			9:59:53	43.87	20.10	138.65	0.68	0.23	804	3526		
			9:59:54	43.83	20.10	138.85	1.13	0.64	804	1257		
			9:59:55	43.81	20.10	139.16	2.33	1.71	804	471	820	Plume traces at 45 ft
			9:59:56	43.77	20.10	138.97	1.65	1.10	804	731		
			9:59:57	43.75	20.10	138.65	0.88	0.41	804	1965		
			9:59:58	43.80	20.10	138.44	0.74	0.28	804	2826		
			9:59:59	43.82	20.10	138.42	0.32	0.32	804	2476		
			10:00:00	43.78	20.10	138.31	0.09	0.09	804	8914		
			10:00:01	43.76	20.10	138.35	0.34	0.34	804	2332		

**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:00:02	43.83	20.10	138.67	1.42	0.90	804	894		
			10:00:03	43.80	20.10	138.57	0.40	0.40	804	2033		
			10:00:04	43.78	20.10	138.52	0.98	0.50	804	1600		
			10:00:05	43.82	20.10	138.58	1.11	0.62	804	1293		
			10:00:06	43.85	20.10	138.52	0.50	0.07	804	11831		
			10:00:07	43.94	20.10	138.44	0.58	0.15	804	5503		
			10:00:08	43.93	20.10	138.46	0.58	0.14	804	5663		
			10:00:09	43.97	20.10	138.46	0.49	0.06	804	14080		
			10:00:10	43.99	20.10	138.59	1.20	0.70	804	1146		
			10:00:11	43.98	20.10	138.63	0.88	0.41	804	1973		
			10:00:12	43.95	20.10	138.58	0.61	0.17	804	4869		
			10:00:13	43.99	20.10	138.31	0.02	0.02	804	45424		
			10:00:14	43.94	20.10	138.14	0.02	0.02	804	43459		
			10:00:15	43.93	20.10	138.19	0.13	0.13	804	5960		
			10:00:16	43.86	20.10	138.08	0.02	0.02	804	47857		
			10:00:17	43.84	20.10	138.18	0.02	0.02	804	44420		
			10:00:18	43.90	20.10	138.27	0.44	0.02	804	48852		
			10:00:19	43.88	20.10	138.46	0.67	0.22	804	3577		
			10:00:20	43.82	20.10	138.42	0.65	0.20	804	3996		
			10:00:21	43.82	20.10	138.54	0.57	0.14	804	5867		
			10:00:22	43.82	20.10	138.54	0.83	0.37	804	2182		
			10:00:23	43.80	20.10	138.48	0.52	0.09	804	8816		
			10:00:24	43.75	20.10	138.35	0.42	0.00	804	949861		
			10:00:25	43.73	20.10	138.37	0.33	0.33	804	2469		
			10:00:26	43.78	20.10	138.33	0.05	0.05	804	15227		
			10:00:27	43.77	20.10	138.39	0.13	0.13	804	5996		
			10:00:28	43.71	20.10	138.37	0.38	0.38	804	2097		
			10:00:29	43.72	20.10	138.39	0.15	0.15	804	5537		
			10:00:30	43.76	20.10	138.37	0.71	0.26	804	3095		
			10:00:31	43.71	20.10	138.42	0.49	0.07	804	12268		
			10:00:32	43.73	20.10	138.53	0.67	0.23	804	3568		
			10:00:33	43.64	20.10	138.52	0.69	0.24	804	3399		
			10:00:34	43.66	20.10	138.35	0.42	0.00	804	949861		
			10:00:35	43.69	20.10	138.44	0.49	0.06	804	12849		
			10:00:36	43.64	20.10	138.31	0.16	0.16	804	5000		
			10:00:37	43.56	20.10	138.20	0.02	0.02	804	40402		
			10:00:38	43.59	20.10	137.65	0.02	0.02	804	41231		
			10:00:39	43.55	20.10	138.06	0.19	0.19	804	4236		
			10:00:40	43.56	20.10	138.37	0.31	0.31	804	2631		

**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:00:41	43.51	20.10	138.42	0.28	0.28	804	2846		
			10:00:42	43.53	20.10	138.52	0.61	0.17	804	4647		
			10:00:43	43.49	20.10	138.56	0.69	0.24	804	3373		
			10:00:44	43.48	20.10	138.58	0.68	0.23	804	3509		
			10:00:45	43.49	20.10	138.56	0.44	0.02	804	41025		
			10:00:46	43.52	20.10	138.61	0.67	0.22	804	3620		
			10:00:47	43.58	20.10	138.61	0.77	0.31	804	2562		
			10:00:48	43.58	20.10	138.61	0.94	0.47	804	1728		
			10:00:49	43.63	20.10	138.50	0.37	0.37	804	2167		
			10:00:50	43.60	20.10	138.48	0.43	0.01	804	110042		
			10:00:51	43.60	20.10	138.50	0.42	0.42	804	1923		
			10:00:52	43.61	20.10	138.50	0.57	0.13	804	5980		
			10:00:53	43.59	20.10	138.58	1.21	0.70	804	1142		
			10:00:54	43.61	20.10	138.56	0.78	0.32	804	2479		
			10:00:55	43.55	20.10	138.53	0.23	0.23	804	3529		
			10:00:56	43.62	20.10	138.46	0.14	0.14	804	5607		
			10:00:57	43.68	20.10	138.35	0.02	0.02	804	44420		
			10:00:58	43.63	20.10	138.39	0.29	0.29	804	2806		
			10:00:59	43.71	20.10	138.39	0.21	0.21	804	3764		
			10:01:00	43.73	20.10	138.50	0.05	0.05	804	17070		
			10:01:01	43.76	20.10	138.58	0.86	0.40	804	2031		
			10:01:02	43.76	20.10	138.66	1.17	0.67	804	1191		
			10:01:03	43.86	20.10	139.11	2.02	1.43	804	561	842	Plume traces at 45 ft
			10:01:04	43.82	20.10	139.02	1.58	1.04	804	774		
			10:01:05	43.89	20.10	138.75	0.77	0.32	804	2544		
			10:01:06	43.93	20.10	138.71	1.30	0.79	804	1022		
			10:01:07	43.98	20.10	138.75	1.39	0.87	804	928		
			10:01:08	43.98	20.10	138.82	1.01	0.53	804	1520		
			10:01:09	43.99	20.10	138.73	1.43	0.90	804	890		
			10:01:10	43.98	20.10	138.78	1.50	0.97	804	828		
			10:01:11	44.06	20.10	139.02	1.46	0.93	804	864		
			10:01:12	44.05	20.10	139.36	2.44	1.81	804	445	880	Plume traces at 45 ft
			10:01:13	44.02	20.10	139.21	1.30	0.78	804	1025		
			10:01:14	44.08	20.10	139.23	1.82	1.25	804	643		
			10:01:15	44.12	20.10	139.19	2.33	1.71	804	469		
			10:01:16	44.11	20.10	139.06	2.06	1.47	804	547		
			10:01:17	44.15	20.10	138.92	1.19	0.69	804	1166		
			10:01:18	44.19	20.10	138.88	1.44	0.91	804	883		
			10:01:19	44.18	20.10	138.93	1.45	0.92	804	872		



**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:01:20	44.20	20.10	138.87	1.24	0.74	804	1092		
			10:01:21	44.20	20.10	138.65	0.75	0.30	804	2711		
			10:01:22	44.20	20.10	138.52	0.46	0.03	804	23070		
			10:01:23	44.29	20.10	138.48	0.07	0.07	804	10999		
			10:01:24	44.33	20.10	138.41	0.20	0.20	804	3924		
			10:01:25	44.24	20.10	138.48	0.15	0.15	804	5217		
			10:01:26	44.30	20.10	138.54	0.63	0.19	804	4316		
			10:01:27	44.28	20.10	138.58	0.55	0.12	804	6751		
			10:01:28	44.22	20.10	138.48	0.78	0.32	804	2524		
			10:01:29	44.23	20.10	138.33	0.02	0.02	804	46744		
			10:01:30	44.23	20.10	138.52	0.60	0.16	804	5128		
			10:01:31	44.30	20.10	138.69	0.90	0.43	804	1882		
			10:01:32	44.28	20.10	138.72	0.75	0.30	804	2716		
			10:01:33	44.32	20.10	138.56	0.25	0.25	804	3159		
			10:01:34	44.32	20.10	138.37	0.23	0.23	804	3529		
			10:01:35	44.28	20.10	138.44	0.18	0.18	804	4391		
			10:01:36	44.30	20.10	138.35	0.50	0.07	804	11223		
			10:01:37	44.32	20.10	138.33	0.36	0.36	804	2221		
			10:01:38	44.23	20.10	138.33	0.25	0.25	804	3243		
			10:01:39	44.25	20.10	138.35	0.05	0.05	804	16543		
			10:01:40	44.25	20.10	138.31	0.09	0.09	804	9437		
			10:01:41	44.23	20.10	138.46	0.25	0.25	804	3213		
			10:01:42	44.19	20.10	138.52	0.55	0.11	804	7195		
			10:01:43	44.27	20.10	138.46	0.19	0.19	804	4232		
			10:01:44	44.29	20.10	138.42	0.24	0.24	804	3397		
			10:01:45	44.29	20.10	138.42	0.14	0.14	804	5912		
			10:01:46	44.24	20.10	138.35	0.13	0.13	804	6252		
			10:01:47	44.26	20.10	138.29	0.30	0.30	804	2716		
			10:01:48	44.28	20.10	138.31	0.06	0.06	804	12504		
			10:01:49	44.25	20.10	138.29	0.02	0.02	804	46207		
			10:01:50	44.23	20.10	138.23	0.02	0.02	804	42094		
			10:01:51	44.23	20.10	138.16	0.02	0.02	804	44916		
			10:01:52	44.25	20.10	138.15	0.02	0.02	804	42540		
			10:01:53	44.19	20.10	138.22	0.02	0.02	804	51538		
			10:01:54	44.15	20.10	138.23	0.07	0.07	804	11388		
			10:01:55	44.18	20.10	138.15	0.02	0.02	804	44916		
			10:01:56	44.16	20.10	138.16	0.02	0.02	804	44916		
			10:01:57	44.10	20.10	138.16	0.02	0.02	804	47294		
			10:01:58	44.10	20.10	138.16	0.02	0.02	804	43934		

**TABLE D-23**

Profile PRO-17 on September 22, 2022 (0944-1002 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

197	Instantaneous Minimum Dilution in Profile
354	Minimum Average Dilution in Profile
634	Plume Average Dilution Detected
1605	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:01:59	44.15	20.10	138.11	0.02	0.02	804	44420		
			10:02:00	44.08	20.10	138.11	0.02	0.02	804	43934		
			10:02:01	44.08	20.10	138.22	0.02	0.02	804	45943		
			10:02:02	44.11	20.10	138.35	0.16	0.16	804	4981		
			10:02:03	44.14	20.10	138.42	0.34	0.34	804	2343		
			10:02:04	44.16	20.10	138.37	0.30	0.30	804	2716		
			10:02:05	44.16	20.10	138.35	0.24	0.24	804	3370		
			10:02:06	44.25	20.10	138.37	0.16	0.16	804	5025		
			10:02:07	44.32	20.10	138.37	0.13	0.13	804	6321		
			10:02:08	44.29	20.10	138.31	0.02	0.02	804	46744		
			10:02:09	44.27	20.10	138.29	0.08	0.08	804	9926		
			10:02:10	44.19	20.10	138.25	0.02	0.02	804	44420		
			10:02:11	44.23	20.10	138.23	0.02	0.02	804	40200		
			10:02:12	44.13	20.10	138.21	0.05	0.05	804	17555		
			10:02:13	44.07	20.10	138.22	0.05	0.05	804	15170		
			10:02:14	44.03	20.10	138.13	0.23	0.23	804	3467		
			10:02:15	44.04	20.10	138.18	0.12	0.12	804	6943		
			10:02:16	44.01	20.10	138.27	0.18	0.18	804	4571		
			10:02:17	43.97	20.10	138.27	0.21	0.21	804	3769		

**TABLE D-24**

Profile PRO-18 on September 22, 2022 (1054-1108 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

28	Instantaneous Minimum Dilution in Profile
37	Minimum Average Dilution in Profile
93	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-18 (North Acute Zone Boundary - 24 ft from Diffuser)	47 ft	0.48 m/sec 347 deg. (mag.) Ebb Tide	10:54:51	2.38	19.97	133.65	0.02	0.02	791	41852		
			10:54:52	2.34	19.97	134.20	0.04	0.04	791	21972		
			10:54:53	2.34	19.98	134.29	0.02	0.02	791	37667		
			10:54:54	2.32	19.97	134.25	0.02	0.02	791	40152		
			10:54:55	2.39	19.97	133.80	0.02	0.02	791	40984		
			10:54:56	2.37	19.80	133.25	0.02	0.02	791	38398		
			10:54:57	2.39	19.62	133.44	0.02	0.02	791	39949		
			10:54:58	2.39	19.60	133.41	0.02	0.02	791	39550		
			10:54:59	2.37	19.59	133.26	0.02	0.02	791	35471		
			10:55:00	2.36	19.51	133.05	0.02	0.02	791	41852		
			10:55:01	2.39	19.41	132.95	0.02	0.02	791	38398		
			10:55:02	2.37	19.40	132.97	0.02	0.02	791	39550		
			10:55:03	2.38	19.40	133.10	0.02	0.02	791	41414		
			10:55:04	2.37	19.43	133.24	0.02	0.02	791	38029		
			10:55:05	2.38	19.49	133.40	0.02	0.02	791	39550		
			10:55:06	2.30	19.55	133.51	0.02	0.02	791	36620		
			10:55:07	2.35	19.59	133.60	0.02	0.02	791	38775		
			10:55:08	2.35	19.61	133.75	0.02	0.02	791	39550		
			10:55:09	2.35	19.66	133.87	0.02	0.02	791	36963		
			10:55:10	2.31	19.71	133.91	0.02	0.02	791	38398		
			10:55:11	2.37	19.73	134.01	0.02	0.02	791	38029		
			10:55:12	2.40	19.76	134.06	0.02	0.02	791	38029		
			10:55:13	2.39	19.78	134.15	0.02	0.02	791	40357		
			10:55:14	2.34	19.79	134.25	0.02	0.02	791	36284		
			10:55:15	2.38	19.81	134.29	0.02	0.02	791	38029		
			10:55:16	2.38	19.82	134.33	0.02	0.02	791	39550		
			10:55:17	2.46	19.82	134.42	0.02	0.02	791	39949		
			10:55:18	2.42	19.85	134.50	0.02	0.02	791	40357		
			10:55:19	2.41	19.86	134.52	0.02	0.02	791	40152		
10:55:20	2.43	19.87	134.54	0.02	0.02	791	36452					
10:55:21	2.34	19.88	134.63	0.02	0.02	791	38029					
10:55:22	2.40	19.87	134.65	0.02	0.02	791	41852					
10:55:23	2.37	19.89	134.85	0.02	0.02	791	41414					
10:55:24	2.65	20.01	135.11	0.02	0.02	791	41414					
10:55:25	4.89	20.03	134.85	0.02	0.02	791	38029					
10:55:26	7.45	20.03	134.83	0.02	0.02	791	38398					
10:55:27	7.87	20.03	134.83	0.02	0.02	791	38029					
10:55:28	7.93	20.03	134.81	0.02	0.02	791	40564					
10:55:29	7.92	20.03	134.82	0.02	0.02	791	36284					

**TABLE D-24**

Profile PRO-18 on September 22, 2022 (1054-1108 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

28	Instantaneous Minimum Dilution in Profile
37	Minimum Average Dilution in Profile
93	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:55:30	7.88	20.03	134.85	0.02	0.02	791	36620		No plume detected at 8 ft
			10:55:31	7.93	20.03	134.90	0.02	0.02	791	44190		
			10:55:32	7.90	20.03	134.92	0.02	0.02	791	40357		
			10:55:33	7.95	20.03	134.96	0.02	0.02	791	42299		
			10:55:34	7.93	20.03	134.87	0.02	0.02	791	41414		
			10:55:35	7.91	20.03	134.85	0.02	0.02	791	38775		
			10:55:36	7.91	20.03	134.94	0.02	0.02	791	40152		
			10:55:37	7.93	20.03	134.91	0.02	0.02	791	42299		
			10:55:38	7.96	20.03	134.92	0.02	0.02	791	42299		
			10:55:39	8.04	20.03	134.90	0.02	0.02	791	43224		
			10:55:40	7.96	20.03	134.85	0.02	0.02	791	41414		
			10:55:41	7.90	20.03	134.96	0.02	0.02	791	37667		
			10:55:42	7.78	20.03	135.06	0.02	0.02	791	37311		
			10:55:43	7.84	20.03	135.00	0.02	0.02	791	39550		
			10:55:44	7.82	20.03	135.02	0.02	0.02	791	40984		
			10:55:45	7.80	20.03	135.01	0.02	0.02	791	38398		
			10:55:46	7.81	20.03	135.00	0.02	0.02	791	39550		
			10:55:47	7.86	20.03	135.06	0.02	0.02	791	40984		
			10:55:48	7.89	20.03	135.02	0.02	0.02	791	39949		
			10:55:49	8.00	20.03	135.11	0.02	0.02	791	37311		
			10:55:50	7.96	20.03	135.09	0.02	0.02	791	40564		
			10:55:51	7.97	20.03	134.98	0.02	0.02	791	39949		
			10:55:52	7.96	20.03	134.98	0.02	0.02	791	37667		
			10:55:53	7.99	20.03	134.95	0.02	0.02	791	42757		
			10:55:54	8.02	20.03	134.94	0.02	0.02	791	37667		
			10:55:55	8.05	20.03	134.96	0.02	0.02	791	41852		
			10:55:56	8.09	20.03	134.98	0.02	0.02	791	39550		
			10:55:57	8.04	20.03	134.98	0.02	0.02	791	42299		
			10:55:58	8.07	20.03	135.00	0.02	0.02	791	39158		
			10:55:59	8.09	20.03	134.96	0.02	0.02	791	39550		
			10:56:00	8.01	20.03	134.94	0.02	0.02	791	38398		
			10:56:01	8.09	20.03	134.95	0.02	0.02	791	40984		
			10:56:02	8.43	20.03	135.00	0.02	0.02	791	40984		
			10:56:03	10.01	20.03	134.96	0.02	0.02	791	39550		
			10:56:04	12.98	20.03	134.90	0.02	0.02	791	38398		
			10:56:05	13.68	20.03	134.94	0.02	0.02	791	39949		
			10:56:06	13.81	20.03	134.96	0.02	0.02	791	40984		
			10:56:07	13.80	20.03	134.94	0.02	0.02	791	42299		
			10:56:08	13.81	20.03	134.90	0.02	0.02	791	42074		

**TABLE D-24**

Profile PRO-18 on September 22, 2022 (1054-1108 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

28	Instantaneous Minimum Dilution in Profile
37	Minimum Average Dilution in Profile
93	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:56:09	13.73	20.03	134.80	0.02	0.02	791	44190		No plume detected at 13 ft
			10:56:10	13.75	20.03	134.83	0.02	0.02	791	39550		
			10:56:11	13.74	20.03	134.79	0.02	0.02	791	38775		
			10:56:12	13.82	20.03	134.87	0.02	0.02	791	40984		
			10:56:13	13.75	20.03	134.90	0.02	0.02	791	39550		
			10:56:14	13.85	20.03	134.85	0.02	0.02	791	40564		
			10:56:15	13.87	20.03	134.90	0.02	0.02	791	40564		
			10:56:16	13.86	20.03	134.94	0.02	0.02	791	40984		
			10:56:17	13.94	20.03	134.94	0.02	0.02	791	40984		
			10:56:18	13.80	20.03	134.94	0.02	0.02	791	39550		
			10:56:19	13.81	20.03	134.96	0.02	0.02	791	40984		
			10:56:20	13.82	20.03	134.94	0.02	0.02	791	47083		
			10:56:21	13.76	20.03	134.90	0.02	0.02	791	39158		
			10:56:22	13.76	20.03	134.81	0.02	0.02	791	42299		
			10:56:23	13.78	20.03	134.75	0.02	0.02	791	41414		
			10:56:24	13.72	20.03	134.91	0.02	0.02	791	40773		
			10:56:25	13.70	20.03	134.98	0.02	0.02	791	43702		
			10:56:26	13.62	20.03	135.13	0.02	0.02	791	39949		
			10:56:27	13.64	20.03	135.02	0.02	0.02	791	40984		
			10:56:28	13.58	20.03	134.87	0.02	0.02	791	39550		
			10:56:29	13.58	20.03	134.94	0.02	0.02	791	40984		
			10:56:30	13.68	20.03	135.09	0.02	0.02	791	36963		
			10:56:31	13.67	20.03	135.06	0.02	0.02	791	44190		
			10:56:32	13.68	20.03	134.82	0.02	0.02	791	40564		
			10:56:33	13.61	20.03	134.85	0.02	0.02	791	41852		
			10:56:34	13.74	20.03	134.79	0.02	0.02	791	40357		
			10:56:35	13.90	20.03	134.68	0.02	0.02	791	41852		
			10:56:36	13.94	20.03	134.83	0.02	0.02	791	38029		
			10:56:37	13.93	20.03	134.73	0.02	0.02	791	39158		
			10:56:38	13.90	20.03	134.92	0.02	0.02	791	40564		
			10:56:39	13.93	20.03	134.83	0.02	0.02	791	40984		
			10:56:40	13.86	20.03	134.82	0.02	0.02	791	43224		
			10:56:41	13.88	20.03	134.75	0.02	0.02	791	40152		
			10:56:42	13.85	20.03	134.73	0.02	0.02	791	42757		
			10:56:43	13.82	20.03	134.85	0.02	0.02	791	37667		
			10:56:44	13.83	20.03	134.92	0.02	0.02	791	38398		
			10:56:45	13.86	20.03	134.90	0.02	0.02	791	39949		
			10:56:46	13.86	20.03	135.09	0.02	0.02	791	40984		
			10:56:47	13.85	20.03	135.09	0.02	0.02	791	40564		

**TABLE D-24**

Profile PRO-18 on September 22, 2022 (1054-1108 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

28	Instantaneous Minimum Dilution in Profile
37	Minimum Average Dilution in Profile
93	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:56:48	13.82	20.03	134.89	0.02	0.02	791	40984		
			10:56:49	13.82	20.03	134.90	0.02	0.02	791	41414		
			10:56:50	13.75	20.03	134.90	0.02	0.02	791	40152		
			10:56:51	13.83	20.03	134.78	0.02	0.02	791	42757		
			10:56:52	13.77	20.03	134.63	0.02	0.02	791	40984		
			10:56:53	13.77	20.03	134.67	0.02	0.02	791	42757		
			10:56:54	13.89	20.03	134.66	0.02	0.02	791	41414		
			10:56:55	14.38	20.03	134.74	0.02	0.02	791	42299		
			10:56:56	14.82	20.03	134.64	0.02	0.02	791	42299		
			10:56:57	17.77	20.03	134.74	0.02	0.02	791	40564		
			10:56:58	18.97	20.03	134.77	0.02	0.02	791	40984		
			10:56:59	19.06	20.03	134.71	0.02	0.02	791	40984		
			10:57:00	19.08	20.03	134.70	0.02	0.02	791	44943		
			10:57:01	19.07	20.03	134.79	0.02	0.02	791	41852		
			10:57:02	19.12	20.03	134.71	0.02	0.02	791	41414		
			10:57:03	19.06	20.03	134.68	0.02	0.02	791	40773		
			10:57:04	19.07	20.03	134.80	0.02	0.02	791	38398		
			10:57:05	19.07	20.03	134.98	0.02	0.02	791	42299		
			10:57:06	19.13	20.03	135.11	0.02	0.02	791	39949		
			10:57:07	19.09	20.03	134.94	0.02	0.02	791	44190		
			10:57:08	18.92	20.03	134.85	0.02	0.02	791	44190		
			10:57:09	18.93	20.03	134.68	0.02	0.02	791	38029		
			10:57:10	18.88	20.03	134.75	0.02	0.02	791	44190		
			10:57:11	18.90	20.03	134.71	0.02	0.02	791	38029		
			10:57:12	18.94	20.03	134.61	0.02	0.02	791	41852		
			10:57:13	18.91	20.03	134.58	0.02	0.02	791	43224		
			10:57:14	19.02	20.03	134.63	0.02	0.02	791	45200		
			10:57:15	19.07	20.03	134.58	0.02	0.02	791	40152		
			10:57:16	19.02	20.03	134.58	0.02	0.02	791	39158		
			10:57:17	18.99	20.03	134.61	0.02	0.02	791	42757		
			10:57:18	18.99	20.03	134.61	0.02	0.02	791	39949		
			10:57:19	19.02	20.03	134.56	0.02	0.02	791	42299		
			10:57:20	19.02	20.03	134.52	0.02	0.02	791	42757		
			10:57:21	19.06	20.03	134.64	0.02	0.02	791	41414		
			10:57:22	19.14	20.03	134.75	0.02	0.02	791	41852		
			10:57:23	19.16	20.03	134.83	0.02	0.02	791	41852		
			10:57:24	19.10	20.03	135.11	0.02	0.02	791	41852		
			10:57:25	19.02	20.03	135.35	0.02	0.02	791	39949		
			10:57:26	19.02	20.03	135.23	0.02	0.02	791	42757		

No plume detected at 19 ft

**TABLE D-24**

Profile PRO-18 on September 22, 2022 (1054-1108 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

28	Instantaneous Minimum Dilution in Profile
37	Minimum Average Dilution in Profile
93	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:57:27	19.04	20.03	135.15	0.02	0.02	791	42757		
			10:57:28	19.01	20.03	135.03	0.02	0.02	791	44689		
			10:57:29	18.97	20.03	135.00	0.02	0.02	791	40773		
			10:57:30	19.01	20.03	134.85	0.02	0.02	791	45200		
			10:57:31	18.97	20.03	134.77	0.02	0.02	791	41414		
			10:57:32	18.95	20.03	135.20	0.02	0.02	791	40984		
			10:57:33	18.95	20.03	135.52	0.02	0.02	791	43702		
			10:57:34	18.93	20.03	135.46	0.02	0.02	791	48232		
			10:57:35	18.90	20.03	135.35	0.02	0.02	791	39550		
			10:57:36	18.90	20.03	135.35	0.02	0.02	791	46529		
			10:57:37	18.90	20.03	135.46	0.02	0.02	791	43224		
			10:57:38	18.88	20.03	135.54	0.02	0.02	791	38775		
			10:57:39	18.92	20.03	135.19	0.02	0.02	791	41852		
			10:57:40	18.89	20.03	135.19	0.02	0.02	791	44943		
			10:57:41	18.96	20.03	135.25	0.02	0.02	791	38775		
			10:57:42	18.91	20.03	135.25	0.02	0.02	791	41852		
			10:57:43	18.91	20.03	135.03	0.02	0.02	791	43702		
			10:57:44	18.91	20.03	135.26	0.02	0.02	791	40152		
			10:57:45	18.99	20.03	135.40	0.02	0.02	791	44689		
			10:57:46	19.04	20.03	135.29	0.02	0.02	791	42299		
			10:57:47	18.96	20.03	135.21	0.02	0.02	791	38398		
			10:57:48	19.02	20.03	135.25	0.02	0.02	791	39158		
			10:57:49	18.99	20.03	135.21	0.02	0.02	791	46529		
			10:57:50	18.96	20.03	135.15	0.02	0.02	791	43702		
			10:57:51	18.97	20.03	135.11	0.02	0.02	791	41852		
			10:57:52	18.99	20.03	135.04	0.02	0.02	791	40984		
			10:57:53	19.03	20.03	135.06	0.02	0.02	791	44190		
			10:57:54	19.02	20.03	134.98	0.02	0.02	791	42299		
			10:57:55	19.05	20.03	134.94	0.02	0.02	791	40984		
			10:57:56	19.08	20.03	135.00	0.02	0.02	791	40564		
			10:57:57	19.16	20.03	135.13	0.02	0.02	791	41198		
			10:57:58	19.10	20.03	135.21	0.02	0.02	791	44190		
			10:57:59	19.05	20.03	135.21	0.02	0.02	791	46529		
			10:58:00	19.37	20.03	135.09	0.02	0.02	791	40357		
			10:58:01	19.73	20.03	135.00	0.02	0.02	791	41414		
			10:58:02	22.37	20.03	134.90	0.02	0.02	791	39949		
			10:58:03	23.91	20.03	134.92	0.02	0.02	791	45200		
			10:58:04	24.38	20.03	134.85	0.02	0.02	791	39749		
			10:58:05	24.43	20.03	134.85	0.02	0.02	791	44190		

**TABLE D-24**

Profile PRO-18 on September 22, 2022 (1054-1108 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

28	Instantaneous Minimum Dilution in Profile
37	Minimum Average Dilution in Profile
93	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:58:06	24.45	20.03	134.81	0.02	0.02	791	40152		No plume detected at 24 ft
			10:58:07	24.46	20.03	134.80	0.02	0.02	791	44190		
			10:58:08	24.36	20.03	134.73	0.02	0.02	791	39949		
			10:58:09	24.39	20.03	134.73	0.02	0.02	791	39550		
			10:58:10	24.35	20.03	134.87	0.02	0.02	791	42299		
			10:58:11	24.29	20.03	135.04	0.02	0.02	791	42299		
			10:58:12	24.32	20.03	135.00	0.02	0.02	791	44943		
			10:58:13	24.27	20.03	134.90	0.02	0.02	791	45723		
			10:58:14	24.28	20.03	134.81	0.02	0.02	791	38775		
			10:58:15	24.21	20.03	134.78	0.02	0.02	791	38029		
			10:58:16	24.29	20.03	134.81	0.02	0.02	791	41414		
			10:58:17	24.24	20.03	134.81	0.02	0.02	791	39550		
			10:58:18	24.17	20.03	134.94	0.02	0.02	791	42757		
			10:58:19	24.10	20.03	134.75	0.02	0.02	791	42299		
			10:58:20	24.10	20.03	134.68	0.02	0.02	791	44689		
			10:58:21	24.12	20.03	134.70	0.02	0.02	791	40152		
			10:58:22	24.12	20.03	134.71	0.02	0.02	791	45200		
			10:58:23	24.16	20.03	134.66	0.02	0.02	791	38398		
			10:58:24	24.28	20.03	134.92	0.02	0.02	791	40773		
			10:58:25	24.34	20.03	135.41	0.02	0.02	791	41414		
			10:58:26	24.35	20.03	135.63	0.02	0.02	791	39749		
			10:58:27	24.31	20.03	135.67	0.02	0.02	791	42757		
			10:58:28	24.32	20.03	135.67	0.02	0.02	791	41852		
			10:58:29	24.27	20.03	135.63	0.02	0.02	791	39550		
			10:58:30	24.23	20.03	135.52	0.02	0.02	791	40984		
			10:58:31	24.19	20.03	135.44	0.02	0.02	791	44689		
			10:58:32	24.19	20.03	135.44	0.02	0.02	791	40773		
			10:58:33	24.18	20.03	135.52	0.02	0.02	791	43224		
			10:58:34	24.15	20.03	135.78	0.02	0.02	791	39949		
			10:58:35	24.14	20.03	135.80	0.02	0.02	791	39550		
			10:58:36	24.09	20.03	135.71	0.02	0.02	791	40564		
			10:58:37	24.00	20.03	135.67	0.02	0.02	791	43224		
			10:58:38	23.97	20.03	135.67	0.02	0.02	791	40984		
			10:58:39	23.97	20.03	135.72	0.02	0.02	791	40773		
			10:58:40	24.01	20.03	135.73	0.02	0.02	791	41414		
			10:58:41	23.99	20.03	135.69	0.02	0.02	791	39749		
			10:58:42	24.06	20.03	135.61	0.02	0.02	791	43224		
			10:58:43	24.06	20.03	135.59	0.02	0.02	791	42299		
			10:58:44	24.07	20.03	135.69	0.02	0.02	791	43224		



**TABLE D-24**

Profile PRO-18 on September 22, 2022 (1054-1108 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

28	Instantaneous Minimum Dilution in Profile
37	Minimum Average Dilution in Profile
93	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:58:45	24.12	20.03	135.69	0.02	0.02	791	41414		
			10:58:46	24.05	20.03	135.65	0.02	0.02	791	44689		
			10:58:47	24.01	20.03	135.64	0.02	0.02	791	42757		
			10:58:48	23.90	20.03	135.59	0.02	0.02	791	40564		
			10:58:49	23.90	20.03	135.61	0.02	0.02	791	39749		
			10:58:50	23.82	20.03	135.61	0.02	0.02	791	40773		
			10:58:51	23.89	20.03	135.59	0.02	0.02	791	43224		
			10:58:52	23.83	20.03	135.57	0.02	0.02	791	39550		
			10:58:53	23.99	20.03	135.50	0.02	0.02	791	42299		
			10:58:54	23.98	20.03	135.50	0.02	0.02	791	46529		
			10:58:55	24.04	20.03	135.35	0.02	0.02	791	41852		
			10:58:56	24.01	20.03	135.45	0.02	0.02	791	45200		
			10:58:57	24.08	20.03	135.54	0.02	0.02	791	41852		
			10:58:58	24.06	20.03	135.54	0.02	0.02	791	41852		
			10:58:59	24.01	20.03	135.65	0.02	0.02	791	45460		
			10:59:00	23.89	20.03	135.78	0.02	0.02	791	42757		
			10:59:01	24.03	20.03	135.76	0.02	0.02	791	40984		
			10:59:02	24.00	20.03	135.83	0.02	0.02	791	38775		
			10:59:03	23.94	20.03	135.86	0.02	0.02	791	38029		
			10:59:04	24.07	20.03	135.65	0.02	0.02	791	39550		
			10:59:05	24.96	20.03	135.37	0.02	0.02	791	42757		
			10:59:06	27.74	20.03	135.25	0.02	0.02	791	42757		
			10:59:07	28.93	20.03	135.37	0.02	0.02	791	39949		
			10:59:08	29.26	20.03	135.36	0.02	0.02	791	45988		
			10:59:09	29.21	20.03	135.28	0.02	0.02	791	43224		
			10:59:10	29.21	20.03	135.25	0.02	0.02	791	44943		
			10:59:11	29.20	20.03	135.25	0.02	0.02	791	44689		
			10:59:12	29.19	20.03	135.23	0.02	0.02	791	37667		
			10:59:13	29.11	20.03	135.31	0.02	0.02	791	41414		
			10:59:14	29.14	20.03	135.33	0.02	0.02	791	41414		
			10:59:15	29.16	20.03	135.23	0.02	0.02	791	45460		
			10:59:16	29.03	20.03	135.30	0.02	0.02	791	41414		
			10:59:17	29.07	20.03	135.54	0.02	0.02	791	40564		
			10:59:18	28.93	20.03	135.54	0.02	0.02	791	41852		
			10:59:19	28.92	20.03	135.37	0.02	0.02	791	39158		
			10:59:20	28.87	20.03	135.25	0.02	0.02	791	43224		
			10:59:21	28.90	20.03	135.25	0.02	0.02	791	42757		
			10:59:22	28.88	20.03	135.17	0.02	0.02	791	41414		
			10:59:23	28.91	20.03	135.17	0.02	0.02	791	40984		

No plume detected at 29 ft

**TABLE D-24**

Profile PRO-18 on September 22, 2022 (1054-1108 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

28	Instantaneous Minimum Dilution in Profile
37	Minimum Average Dilution in Profile
93	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			10:59:24	28.95	20.03	135.25	0.02	0.02	791	40152		
			10:59:25	28.88	20.03	135.36	0.02	0.02	791	40564		
			10:59:26	28.95	20.03	135.38	0.02	0.02	791	37667		
			10:59:27	29.04	20.03	135.37	0.02	0.02	791	44190		
			10:59:28	28.96	20.03	135.23	0.02	0.02	791	42757		
			10:59:29	28.91	20.03	135.19	0.02	0.02	791	42299		
			10:59:30	28.94	20.03	135.23	0.02	0.02	791	40984		
			10:59:31	28.94	20.03	135.23	0.02	0.02	791	42299		
			10:59:32	28.93	20.03	135.21	0.02	0.02	791	40564		
			10:59:33	28.95	20.03	135.23	0.02	0.02	791	42299		
			10:59:34	29.03	20.03	135.30	0.02	0.02	791	42299		
			10:59:35	29.02	20.03	135.25	0.02	0.02	791	41852		
			10:59:36	29.18	20.03	135.17	0.02	0.02	791	40984		
			10:59:37	29.23	20.03	135.13	0.02	0.02	791	41852		
			10:59:38	29.16	20.03	135.15	0.02	0.02	791	39158		
			10:59:39	29.23	20.03	135.15	0.02	0.02	791	38775		
			10:59:40	29.21	20.03	135.23	0.02	0.02	791	40984		
			10:59:41	29.23	20.03	135.17	0.02	0.02	791	43702		
			10:59:42	29.24	20.03	135.11	0.02	0.02	791	40152		
			10:59:43	29.29	20.03	135.09	0.02	0.02	791	44689		
			10:59:44	29.22	20.03	135.23	0.02	0.02	791	41414		
			10:59:45	29.30	20.03	135.30	0.02	0.02	791	40564		
			10:59:46	29.26	20.03	135.28	0.02	0.02	791	39550		
			10:59:47	29.12	20.03	135.25	0.02	0.02	791	40564		
			10:59:48	29.12	20.03	135.17	0.02	0.02	791	41852		
			10:59:49	29.12	20.03	135.21	0.02	0.02	791	38775		
			10:59:50	29.19	20.03	135.32	0.02	0.02	791	41852		
			10:59:51	29.19	20.03	135.25	0.02	0.02	791	40773		
			10:59:52	29.25	20.03	135.21	0.02	0.02	791	43702		
			10:59:53	29.23	20.03	135.11	0.02	0.02	791	41198		
			10:59:54	29.18	20.03	135.09	0.02	0.02	791	39158		
			10:59:55	29.10	20.03	135.06	0.02	0.02	791	41414		
			10:59:56	28.90	20.03	135.04	0.02	0.02	791	38775		
			10:59:57	28.72	20.03	135.07	0.02	0.02	791	39550		
			10:59:58	28.68	20.03	135.04	0.02	0.02	791	41852		
			10:59:59	29.50	20.03	135.02	0.02	0.02	791	40984		
			11:00:00	32.47	20.03	135.04	0.02	0.02	791	43224		
			11:00:01	33.52	20.03	135.09	0.02	0.02	791	42299		
			11:00:02	33.67	20.03	135.09	0.02	0.02	791	43224		

**TABLE D-24**

Profile PRO-18 on September 22, 2022 (1054-1108 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

28	Instantaneous Minimum Dilution in Profile
37	Minimum Average Dilution in Profile
93	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:00:03	33.67	20.03	135.04	0.02	0.02	791	41414		No plume detected at 33-35 ft
			11:00:04	33.75	20.03	135.06	0.02	0.02	791	41414		
			11:00:05	33.77	20.03	135.07	0.02	0.02	791	44689		
			11:00:06	34.10	20.03	135.02	0.02	0.02	791	40773		
			11:00:07	34.28	20.03	135.00	0.02	0.02	791	41852		
			11:00:08	34.42	20.03	135.02	0.02	0.02	791	40984		
			11:00:09	34.50	20.03	135.09	0.02	0.02	791	44689		
			11:00:10	34.57	20.03	135.06	0.02	0.02	791	42299		
			11:00:11	34.54	20.03	135.00	0.02	0.02	791	43702		
			11:00:12	34.44	20.03	135.09	0.02	0.02	791	40357		
			11:00:13	34.28	20.03	135.05	0.02	0.02	791	44190		
			11:00:14	34.11	20.03	134.98	0.02	0.02	791	40564		
			11:00:15	33.97	20.03	135.02	0.02	0.02	791	38398		
			11:00:16	33.83	20.03	134.98	0.02	0.02	791	40152		
			11:00:17	33.64	20.03	135.06	0.02	0.02	791	41414		
			11:00:18	33.57	20.03	135.02	0.02	0.02	791	40152		
			11:00:19	33.42	20.03	135.11	0.02	0.02	791	38775		
			11:00:20	33.41	20.03	135.13	0.02	0.02	791	42757		
			11:00:21	33.32	20.03	135.13	0.02	0.02	791	41414		
			11:00:22	33.35	20.03	135.15	0.02	0.02	791	40984		
			11:00:23	33.32	20.03	135.11	0.02	0.02	791	42757		
			11:00:24	33.34	20.03	135.13	0.02	0.02	791	44689		
			11:00:25	33.35	20.03	135.09	0.02	0.02	791	40984		
			11:00:26	33.37	20.03	135.06	0.02	0.02	791	40564		
			11:00:27	33.37	20.03	135.11	0.02	0.02	791	42757		
			11:00:28	33.41	20.03	135.06	0.02	0.02	791	42299		
			11:00:29	33.41	20.03	135.07	0.02	0.02	791	43224		
			11:00:30	33.41	20.03	135.06	0.02	0.02	791	42757		
			11:00:31	33.43	20.03	135.06	0.02	0.02	791	41852		
			11:00:32	33.39	20.03	135.06	0.02	0.02	791	44689		
			11:00:33	33.38	20.03	135.02	0.02	0.02	791	45988		
			11:00:34	33.35	20.03	134.98	0.02	0.02	791	39158		
			11:00:35	33.37	20.03	135.02	0.02	0.02	791	47651		
			11:00:36	33.34	20.03	134.98	0.02	0.02	791	44943		
			11:00:37	33.35	20.03	134.95	0.02	0.02	791	43224		
			11:00:38	33.44	20.03	135.00	0.02	0.02	791	43224		
			11:00:39	33.36	20.03	135.06	0.02	0.02	791	43224		
			11:00:40	33.40	20.03	135.06	0.02	0.02	791	39550		
			11:00:41	33.90	20.03	135.09	0.02	0.02	791	41414		

**TABLE D-24**

Profile PRO-18 on September 22, 2022 (1054-1108 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

28	Instantaneous Minimum Dilution in Profile
37	Minimum Average Dilution in Profile
93	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:00:42	36.87	20.03	135.04	0.02	0.02	791	45200		No plume detected at 39 ft
			11:00:43	38.61	20.03	135.09	0.02	0.02	791	39550		
			11:00:44	38.77	20.03	135.05	0.02	0.02	791	40152		
			11:00:45	38.81	20.03	135.02	0.02	0.02	791	42757		
			11:00:46	38.86	20.03	134.96	0.02	0.02	791	39158		
			11:00:47	38.81	20.03	134.98	0.02	0.02	791	43702		
			11:00:48	38.95	20.03	134.98	0.02	0.02	791	38029		
			11:00:49	39.01	20.03	134.92	0.02	0.02	791	42299		
			11:00:50	39.18	20.03	135.00	0.02	0.02	791	42757		
			11:00:51	39.40	20.03	134.98	0.02	0.02	791	43224		
			11:00:52	39.49	20.03	134.80	0.02	0.02	791	41852		
			11:00:53	39.57	20.03	134.83	0.02	0.02	791	41852		
			11:00:54	39.48	20.03	134.79	0.02	0.02	791	40357		
			11:00:55	39.45	20.03	134.77	0.02	0.02	791	39550		
			11:00:56	39.45	20.03	134.85	0.02	0.02	791	39550		
			11:00:57	39.32	20.03	134.87	0.02	0.02	791	42299		
			11:00:58	39.33	20.03	134.87	0.02	0.02	791	42757		
			11:00:59	39.26	20.03	134.92	0.02	0.02	791	38398		
			11:01:00	39.09	20.03	134.85	0.02	0.02	791	42299		
			11:01:01	38.90	20.03	134.79	0.02	0.02	791	39158		
			11:01:02	38.58	20.03	134.81	0.02	0.02	791	40984		
			11:01:03	38.40	20.03	134.81	0.02	0.02	791	43224		
			11:01:04	38.25	20.03	134.77	0.02	0.02	791	43224		
			11:01:05	38.20	20.03	134.83	0.02	0.02	791	42757		
			11:01:06	38.19	20.03	134.79	0.02	0.02	791	41414		
			11:01:07	38.30	20.03	134.79	0.02	0.02	791	40152		
			11:01:08	38.45	20.03	134.89	0.02	0.02	791	40564		
			11:01:09	38.59	20.03	134.92	0.02	0.02	791	41414		
			11:01:10	38.73	20.03	134.83	0.02	0.02	791	39550		
			11:01:11	38.86	20.03	134.85	0.02	0.02	791	45723		
			11:01:12	39.00	20.03	134.87	0.02	0.02	791	41414		
			11:01:13	39.04	20.03	134.87	0.02	0.02	791	40152		
			11:01:14	38.89	20.03	134.85	0.02	0.02	791	39158		
			11:01:15	38.87	20.03	134.75	0.02	0.02	791	42757		
			11:01:16	38.86	20.03	134.79	0.02	0.02	791	43702		
			11:01:17	38.78	20.03	134.85	0.02	0.02	791	42299		
			11:01:18	38.65	20.03	134.77	0.02	0.02	791	39158		
			11:01:19	38.67	20.03	134.73	0.02	0.02	791	41852		
			11:01:20	38.66	20.03	134.75	0.02	0.02	791	42299		

**TABLE D-24**

Profile PRO-18 on September 22, 2022 (1054-1108 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

28	Instantaneous Minimum Dilution in Profile
37	Minimum Average Dilution in Profile
93	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:01:21	38.67	20.03	134.85	0.02	0.02	791	40564		
			11:01:22	38.65	20.03	134.87	0.02	0.02	791	38775		
			11:01:23	38.66	20.03	134.87	0.02	0.02	791	39158		
			11:01:24	38.67	20.03	134.87	0.02	0.02	791	41414		
			11:01:25	38.66	20.03	134.81	0.02	0.02	791	39550		
			11:01:26	38.69	20.03	134.81	0.02	0.02	791	44190		
			11:01:27	38.80	20.03	134.83	0.02	0.02	791	39949		
			11:01:28	38.65	20.03	134.79	0.02	0.02	791	40564		
			11:01:29	38.66	20.03	134.87	0.02	0.02	791	39949		
			11:01:30	38.56	20.03	134.81	0.02	0.02	791	39158		
			11:01:31	38.59	20.03	134.77	0.02	0.02	791	42757		
			11:01:32	38.55	20.03	134.78	0.02	0.02	791	40984		
			11:01:33	39.45	20.03	134.79	0.02	0.02	791	42757		
			11:01:34	41.67	20.03	136.08	0.02	0.02	791	39158		
			11:01:35	42.00	20.07	148.06	2.10	1.50	791	526		
			11:01:36	42.03	20.08	139.09	0.02	0.02	791	43224		
			11:01:37	42.06	20.04	135.26	0.02	0.02	791	42757		
			11:01:38	42.21	20.04	136.31	0.06	0.06	791	12883		
			11:01:39	42.12	20.04	140.62	3.30	2.58	791	307		
			11:01:40	42.23	20.06	141.01	20.42	17.94	791	44		
			11:01:41	42.21	20.06	140.80	11.40	9.85	791	80	60	Diffuser port plume at 42 ft
			11:01:42	42.24	20.06	140.38	16.15	14.11	791	56		
			11:01:43	42.16	20.05	137.77	9.00	7.69	791	103		
			11:01:44	42.20	20.04	136.14	0.36	0.36	791	2220		
			11:01:45	42.11	20.04	136.52	1.34	0.82	791	962		
			11:01:46	42.13	20.04	139.18	5.80	4.83	791	164		
			11:01:47	42.06	20.06	139.26	8.27	7.04	791	112		
			11:01:48	42.05	20.05	136.38	0.02	0.02	791	39550		
			11:01:49	42.10	20.04	136.40	0.02	0.02	791	40984		
			11:01:50	42.16	20.04	138.58	5.63	4.68	791	169		
			11:01:51	42.26	20.05	139.75	7.99	6.79	791	117	147	Diffuser port plume at 42 ft
			11:01:52	42.24	20.06	139.50	6.15	5.14	791	154		
			11:01:53	42.24	20.05	137.28	1.08	0.59	791	1335		
			11:01:54	42.23	20.04	136.20	0.21	0.21	791	3855		
			11:01:55	42.25	20.04	136.79	0.21	0.21	791	3783		
			11:01:56	42.18	20.04	135.71	0.02	0.02	791	38029		
			11:01:57	42.21	20.04	135.65	0.02	0.02	791	41414		
			11:01:58	42.21	20.04	136.02	0.07	0.07	791	11581		
			11:01:59	42.19	20.04	136.11	0.02	0.02	791	40152		

**TABLE D-24**

Profile PRO-18 on September 22, 2022 (1054-1108 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

28	Instantaneous Minimum Dilution in Profile
37	Minimum Average Dilution in Profile
93	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:02:00	42.17	20.04	137.48	3.59	2.85	791	278		
			11:02:01	42.18	20.04	137.10	3.33	2.61	791	304		
			11:02:02	42.19	20.04	136.21	0.74	0.29	791	2738		
			11:02:03	42.12	20.04	136.67	0.29	0.29	791	2719		
			11:02:04	42.14	20.04	137.95	3.05	2.36	791	336		
			11:02:05	42.07	20.04	136.14	0.02	0.02	791	38775		
			11:02:06	42.17	20.04	135.37	0.02	0.02	791	43224		
			11:02:07	42.13	20.03	135.88	0.08	0.08	791	9875		
			11:02:08	42.06	20.04	137.01	2.54	1.90	791	417		
			11:02:09	42.06	20.04	137.75	8.01	6.81	791	116		
			11:02:10	41.96	20.04	136.82	1.83	1.26	791	627		
			11:02:11	42.03	20.04	137.86	1.75	1.19	791	665		
			11:02:12	42.03	20.04	137.21	0.43	0.01	791	132707		
			11:02:13	42.04	20.04	135.63	0.02	0.02	791	42299		
			11:02:14	41.96	20.03	135.28	0.02	0.02	791	40984		
			11:02:15	41.94	20.03	135.98	2.61	1.96	791	403		
			11:02:16	41.96	20.04	136.40	2.49	1.86	791	426		
			11:02:17	42.03	20.04	136.72	0.32	0.32	791	2447		
			11:02:18	42.04	20.04	136.02	0.02	0.02	791	42757		
			11:02:19	42.11	20.04	136.24	0.58	0.14	791	5657		
			11:02:20	42.13	20.04	137.69	0.59	0.15	791	5231		
			11:02:21	42.15	20.04	136.77	0.19	0.19	791	4257		
			11:02:22	42.18	20.04	136.65	2.76	2.10	791	378		
			11:02:23	42.08	20.04	135.76	0.35	0.35	791	2236		
			11:02:24	42.11	20.04	136.38	1.61	1.07	791	740		
			11:02:25	42.01	20.04	137.16	2.68	2.03	791	390		
			11:02:26	41.94	20.06	143.68	14.95	13.04	791	61	69	Diffuser port plume at 42 ft
			11:02:27	41.98	20.07	142.23	11.87	10.28	791	77		
			11:02:28	41.91	20.06	140.51	6.23	5.21	791	152		
			11:02:29	42.03	20.07	144.19	22.69	19.98	791	40	37	Diffuser port plume at 42 ft
			11:02:30	42.09	20.09	147.05	25.61	22.60	791	35		
			11:02:31	42.23	20.08	140.20	2.20	1.59	791	496		
			11:02:32	42.26	20.05	139.79	6.58	5.52	791	143		
			11:02:33	42.43	20.05	137.83	2.31	1.69	791	467		
			11:02:34	42.35	20.04	136.75	0.64	0.20	791	4045		
			11:02:35	42.34	20.04	138.75	5.90	4.92	791	161		
			11:02:36	42.37	20.05	139.60	11.67	10.09	791	78		
			11:02:37	42.37	20.06	142.28	19.85	17.43	791	45	50	Diffuser port plume at 42 ft
			11:02:38	42.37	20.08	147.59	31.82	28.17	791	28		

**TABLE D-24**

Profile PRO-18 on September 22, 2022 (1054-1108 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

28	Instantaneous Minimum Dilution in Profile
37	Minimum Average Dilution in Profile
93	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:02:39	42.38	20.08	143.19	19.45	17.08	791	46		Diffuser port plume at 42 ft
			11:02:40	42.35	20.06	140.40	8.28	7.05	791	112		
			11:02:41	42.36	20.06	141.87	18.54	16.25	791	49		
			11:02:42	42.36	20.07	142.40	18.08	15.84	791	50	57	
			11:02:43	42.37	20.06	140.21	12.47	10.81	791	73		
			11:02:44	42.48	20.05	138.36	6.67	5.60	791	141		
			11:02:45	42.44	20.05	139.95	4.37	3.55	791	223		
			11:02:46	42.46	20.05	138.32	5.33	4.40	791	180		
			11:02:47	42.50	20.05	139.09	4.88	4.00	791	198		
			11:02:48	42.44	20.07	145.96	16.02	14.00	791	57		
			11:02:49	42.38	20.08	143.74	15.60	13.62	791	58		
			11:02:50	42.29	20.08	145.02	14.68	12.80	791	62		
			11:02:51	42.24	20.08	143.02	10.88	9.38	791	84		
			11:02:52	42.21	20.06	142.48	13.61	11.83	791	67		
			11:02:53	42.25	20.07	143.77	17.54	15.36	791	52	61	Diffuser port plume at 42 ft
			11:02:54	42.25	20.07	141.77	17.16	15.01	791	53		
			11:02:55	42.30	20.06	142.41	14.74	12.85	791	62		
			11:02:56	42.33	20.07	143.58	17.72	15.52	791	51		
			11:02:57	42.35	20.07	142.26	13.49	11.72	791	67		
			11:02:58	42.31	20.06	140.03	7.83	6.65	791	119		
			11:02:59	42.40	20.05	139.30	9.30	7.97	791	99		
			11:03:00	42.43	20.05	138.95	3.23	2.52	791	314		
			11:03:01	42.47	20.04	136.46	0.16	0.16	791	4850		
			11:03:02	42.46	20.04	136.93	0.86	0.39	791	2010		
			11:03:03	42.39	20.04	136.18	0.02	0.02	791	43224		
			11:03:04	42.43	20.04	137.04	1.43	0.90	791	878		
			11:03:05	42.49	20.04	137.57	3.98	3.19	791	248		
			11:03:06	42.45	20.04	138.51	6.50	5.46	791	145		
			11:03:07	42.45	20.04	137.00	1.22	0.71	791	1108		
			11:03:08	42.36	20.03	135.78	0.02	0.02	791	42757		
			11:03:09	42.37	20.03	135.64	0.02	0.02	791	41852		
			11:03:10	42.30	20.03	135.61	0.02	0.02	791	40564		
			11:03:11	42.32	20.03	139.20	8.36	7.12	791	111		
			11:03:12	42.38	20.06	140.79	14.82	12.91	791	61		
			11:03:13	42.45	20.06	140.69	11.38	9.83	791	80		
			11:03:14	42.42	20.05	139.09	6.86	5.77	791	137		
			11:03:15	42.42	20.05	139.42	0.51	0.08	791	10343		
			11:03:16	42.34	20.06	144.24	5.95	4.96	791	159		
			11:03:17	42.41	20.07	143.70	17.83	15.62	791	51		

**TABLE D-24**

Profile PRO-18 on September 22, 2022 (1054-1108 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

28	Instantaneous Minimum Dilution in Profile
37	Minimum Average Dilution in Profile
93	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:03:18	42.19	20.05	137.61	5.95	4.96	791	160		Diffuser port plume at 42 ft
			11:03:19	42.31	20.04	136.40	3.81	3.04	791	260		
			11:03:20	42.30	20.04	138.32	4.77	3.90	791	203		
			11:03:21	42.27	20.05	139.23	3.35	2.63	791	301		
			11:03:22	42.28	20.05	139.07	1.86	1.29	791	612		
			11:03:23	42.30	20.05	142.40	24.49	21.59	791	37		
			11:03:24	42.28	20.08	147.41	29.27	25.88	791	31	45	
			11:03:25	42.29	20.08	142.78	15.74	13.74	791	58		
			11:03:26	42.27	20.07	144.19	16.18	14.14	791	56		
			11:03:27	42.25	20.07	140.71	7.03	5.93	791	133		
			11:03:28	42.24	20.05	137.69	0.02	0.02	791	42757		
			11:03:29	42.30	20.05	140.38	2.79	2.13	791	372		
			11:03:30	42.30	20.05	140.50	9.02	7.71	791	103		
			11:03:31	42.28	20.05	137.18	0.79	0.33	791	2420		
			11:03:32	42.19	20.03	136.43	0.02	0.02	791	40152		
			11:03:33	42.20	20.06	144.86	11.39	9.84	791	80		
			11:03:34	42.18	20.07	140.85	12.41	10.76	791	74		
			11:03:35	42.16	20.04	136.48	0.69	0.24	791	3298		
			11:03:36	42.23	20.04	136.74	0.06	0.06	791	14150		
			11:03:37	42.19	20.04	136.04	0.02	0.02	791	41414		
			11:03:38	42.22	20.03	135.40	0.02	0.02	791	44689		
			11:03:39	42.20	20.03	135.57	0.02	0.02	791	41414		
			11:03:40	42.20	20.03	135.83	0.02	0.02	791	41198		
			11:03:41	42.18	20.04	138.18	3.93	3.15	791	251		
			11:03:42	42.14	20.04	135.97	0.30	0.30	791	2630		
			11:03:43	42.14	20.03	135.25	0.02	0.02	791	40984		
			11:03:44	42.06	20.04	137.99	2.26	1.65	791	479		
			11:03:45	42.00	20.04	138.10	4.32	3.50	791	226		
			11:03:46	41.98	20.04	136.72	0.02	0.02	791	45988		
			11:03:47	41.95	20.03	135.41	0.02	0.02	791	39949		
			11:03:48	41.95	20.03	136.43	0.48	0.05	791	15268		
			11:03:49	41.94	20.04	138.38	3.61	2.86	791	276		
			11:03:50	41.97	20.05	139.86	6.31	5.29	791	150		
			11:03:51	41.93	20.06	142.14	14.91	13.00	791	61		
			11:03:52	42.02	20.06	140.16	9.98	8.58	791	92	71	
			11:03:53	42.03	20.06	141.51	15.23	13.29	791	60		
			11:03:54	42.03	20.06	143.41	8.31	7.08	791	112		
			11:03:55	42.01	20.07	144.04	18.36	16.09	791	49		
			11:03:56	42.02	20.06	137.70	3.11	2.41	791	328		



**TABLE D-24**

Profile PRO-18 on September 22, 2022 (1054-1108 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

28	Instantaneous Minimum Dilution in Profile
37	Minimum Average Dilution in Profile
93	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured	Calibration-	Measured	Instant. Minimum	Minimum Plume Avg. Dilution	Measurement Observations
							Dye Conc. (ppb)	Corrected Dye Conc. (ppb)	Initial Dye Conc. (ppb)			
			11:03:57	41.99	20.04	135.48	0.02	0.02	791	40357		
			11:03:58	41.98	20.03	135.25	0.02	0.02	791	43702		
			11:03:59	41.97	20.03	135.19	0.02	0.02	791	38398		
			11:04:00	42.00	20.03	135.16	0.02	0.02	791	41414		
			11:04:01	41.95	20.03	135.15	0.02	0.02	791	40152		
			11:04:02	41.91	20.03	135.19	0.02	0.02	791	39550		
			11:04:03	41.94	20.03	135.15	0.02	0.02	791	41852		
			11:04:04	41.94	20.03	135.21	0.02	0.02	791	43702		
			11:04:05	41.94	20.03	135.23	0.02	0.02	791	43224		
			11:04:06	41.95	20.03	135.53	0.02	0.02	791	38398		
			11:04:07	41.93	20.04	138.22	0.66	0.21	791	3722		
			11:04:08	42.00	20.05	140.57	9.86	8.47	791	93		
			11:04:09	41.94	20.05	136.57	0.90	0.43	791	1832		
			11:04:10	41.93	20.03	135.21	0.02	0.02	791	45723		
			11:04:11	41.84	20.03	135.09	0.02	0.02	791	48232		
			11:04:12	41.85	20.03	135.06	0.02	0.02	791	44689		
			11:04:13	41.81	20.03	135.13	0.02	0.02	791	39949		
			11:04:14	41.78	20.03	135.06	0.02	0.02	791	40773		
			11:04:15	41.76	20.03	135.09	0.02	0.02	791	39550		
			11:04:16	41.75	20.03	135.11	0.02	0.02	791	44190		
			11:04:17	41.75	20.03	135.11	0.02	0.02	791	42757		
			11:04:18	41.74	20.03	135.13	0.02	0.02	791	42299		
			11:04:19	41.72	20.03	138.99	0.65	0.20	791	3866		
			11:04:20	41.67	20.06	143.07	18.81	16.50	791	48		
			11:04:21	41.62	20.06	139.46	6.84	5.76	791	137		
			11:04:22	41.54	20.05	137.12	0.44	0.01	791	55298		
			11:04:23	41.51	20.04	135.37	0.02	0.02	791	42757		
			11:04:24	41.47	20.03	135.17	0.02	0.02	791	43224		
			11:04:25	41.36	20.03	135.09	0.02	0.02	791	43224		
			11:04:26	41.32	20.03	134.98	0.02	0.02	791	39949		
			11:04:27	41.30	20.03	135.04	0.02	0.02	791	43702		
			11:04:28	41.23	20.03	135.06	0.02	0.02	791	40152		
			11:04:29	41.22	20.03	135.09	0.02	0.02	791	38775		
			11:04:30	41.21	20.03	135.09	0.02	0.02	791	42074		
			11:04:31	41.24	20.03	135.13	0.02	0.02	791	40564		
			11:04:32	41.26	20.03	135.11	0.02	0.02	791	41852		
			11:04:33	41.21	20.03	135.13	0.02	0.02	791	42757		
			11:04:34	41.26	20.03	135.13	0.02	0.02	791	44689		
			11:04:35	41.29	20.03	135.13	0.02	0.02	791	43702		

**TABLE D-24**

Profile PRO-18 on September 22, 2022 (1054-1108 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

28	Instantaneous Minimum Dilution in Profile
37	Minimum Average Dilution in Profile
93	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			11:04:36	41.30	20.03	135.13	0.02	0.02	791	41414		
			11:04:37	41.41	20.03	135.06	0.02	0.02	791	41852		
			11:04:38	41.40	20.03	135.06	0.02	0.02	791	42299		
			11:04:39	41.44	20.03	135.13	0.02	0.02	791	43224		
			11:04:40	41.60	20.03	135.13	0.02	0.02	791	38775		
			11:04:41	41.59	20.03	135.15	0.02	0.02	791	44689		
			11:04:42	41.64	20.03	135.09	0.02	0.02	791	41414		
			11:04:43	41.58	20.03	135.13	0.02	0.02	791	40984		
			11:04:44	41.68	20.03	135.19	0.02	0.02	791	45460		
			11:04:45	41.76	20.03	135.11	0.02	0.02	791	40564		
			11:04:46	41.90	20.03	135.17	0.02	0.02	791	39949		
			11:04:47	41.85	20.03	135.19	0.02	0.02	791	40564		
			11:04:48	41.98	20.03	135.15	0.02	0.02	791	41852		
			11:04:49	41.90	20.03	135.13	0.02	0.02	791	40357		
			11:04:50	41.91	20.03	136.00	0.02	0.02	791	43224		
			11:04:51	41.92	20.04	139.95	2.94	2.26	791	350		
			11:04:52	41.92	20.06	140.86	10.03	8.62	791	92		
			11:04:53	41.91	20.05	138.76	12.74	11.05	791	72	208	Diffuser port plume at 42 ft
			11:04:54	41.88	20.04	135.90	2.33	1.71	791	461		
			11:04:55	41.91	20.03	135.18	0.02	0.02	791	44190		
			11:04:56	41.81	20.03	135.13	0.02	0.02	791	39749		
			11:04:57	41.79	20.03	135.09	0.02	0.02	791	41414		
			11:04:58	41.76	20.03	135.13	0.02	0.02	791	43224		
			11:04:59	41.79	20.03	135.15	0.02	0.02	791	40773		
			11:05:00	41.72	20.03	135.15	0.02	0.02	791	41414		
			11:05:01	41.67	20.03	135.23	0.02	0.02	791	43702		
			11:05:02	41.70	20.03	135.30	0.02	0.02	791	45460		
			11:05:03	41.61	20.03	135.17	0.02	0.02	791	42757		
			11:05:04	41.53	20.03	135.13	0.02	0.02	791	40152		
			11:05:05	41.51	20.03	135.11	0.02	0.02	791	41852		
			11:05:06	41.48	20.03	135.35	0.02	0.02	791	44190		
			11:05:07	41.43	20.03	135.42	0.02	0.02	791	40984		
			11:05:08	41.41	20.03	135.41	0.02	0.02	791	40773		
			11:05:09	41.46	20.03	137.53	0.02	0.02	791	41414		
			11:05:10	41.40	20.04	136.90	0.02	0.02	791	46257		
			11:05:11	41.42	20.03	135.54	0.49	0.06	791	12410		
			11:05:12	41.42	20.03	135.71	1.26	0.75	791	1057		
			11:05:13	41.47	20.03	137.00	3.74	2.98	791	266		
			11:05:14	41.44	20.05	140.50	8.49	7.23	791	109	202	Diffuser port plume at 42 ft

**TABLE D-24**

Profile PRO-18 on September 22, 2022 (1054-1108 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

28	Instantaneous Minimum Dilution in Profile
37	Minimum Average Dilution in Profile
93	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:05:15	41.49	20.05	138.26	4.22	3.41	791	232		Diffuser port plume at 42 ft
			11:05:16	41.51	20.05	139.86	1.84	1.27	791	623		
			11:05:17	41.58	20.06	141.08	4.94	4.05	791	195		
			11:05:18	41.57	20.05	140.11	6.84	5.76	791	137		
			11:05:19	41.54	20.05	139.97	9.42	8.08	791	98		
			11:05:20	41.53	20.04	136.73	0.76	0.30	791	2612		
			11:05:21	41.51	20.04	137.55	9.58	8.22	791	96		
			11:05:22	41.51	20.04	136.63	3.07	2.38	791	333	353	
			11:05:23	41.48	20.03	135.94	1.82	1.26	791	630		
			11:05:24	41.51	20.04	137.48	1.86	1.29	791	611		
			11:05:25	41.56	20.04	135.94	0.02	0.02	791	41852		
			11:05:26	41.53	20.03	135.46	0.02	0.02	791	44689		
			11:05:27	41.55	20.03	135.33	0.02	0.02	791	43702		
			11:05:28	41.56	20.03	135.35	0.02	0.02	791	40152		
			11:05:29	41.51	20.03	135.71	0.02	0.02	791	44190		
			11:05:30	41.62	20.03	135.59	0.02	0.02	791	44190		
			11:05:31	41.63	20.03	135.42	0.02	0.02	791	42299		
			11:05:32	41.65	20.03	135.46	0.02	0.02	791	44689		
			11:05:33	41.69	20.03	135.42	0.02	0.02	791	42757		
			11:05:34	41.67	20.03	135.40	0.02	0.02	791	40357		
			11:05:35	41.69	20.03	135.25	0.02	0.02	791	39949		
			11:05:36	41.76	20.03	135.21	0.02	0.02	791	44689		
			11:05:37	41.79	20.03	135.25	0.02	0.02	791	40984		
			11:05:38	41.90	20.03	135.30	0.02	0.02	791	43224		
			11:05:39	42.12	20.03	135.36	0.02	0.02	791	41414		
			11:05:40	43.51	20.03	135.61	0.02	0.02	791	44943		
			11:05:41	44.34	20.03	135.47	0.02	0.02	791	40564		
			11:05:42	44.50	20.03	136.63	0.43	0.00	791	241979		
			11:05:43	44.53	20.03	135.93	0.02	0.02	791	44689		
			11:05:44	44.56	20.03	135.38	0.02	0.02	791	40984		
			11:05:45	44.44	20.03	135.21	0.02	0.02	791	41852		
			11:05:46	44.44	20.03	135.88	0.32	0.32	791	2458		
			11:05:47	44.39	20.04	139.70	6.74	5.66	791	140		
			11:05:48	44.32	20.04	137.36	4.63	3.78	791	209		
			11:05:49	44.26	20.03	136.84	0.64	0.20	791	4043		
			11:05:50	44.19	20.04	139.46	8.75	7.48	791	106		
			11:05:51	44.03	20.06	142.11	15.11	13.18	791	60	97	
			11:05:52	43.96	20.05	139.04	7.47	6.33	791	125	Diffuser port plume at 44 ft	
			11:05:53	43.85	20.04	138.27	0.49	0.06	791	12204		

**TABLE D-24**

Profile PRO-18 on September 22, 2022 (1054-1108 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

28	Instantaneous Minimum Dilution in Profile
37	Minimum Average Dilution in Profile
93	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:05:54	43.91	20.04	137.24	1.74	1.19	791	667		
			11:05:55	43.89	20.03	136.00	0.02	0.02	791	42299		
			11:05:56	43.87	20.03	135.73	0.02	0.02	791	42299		
			11:05:57	43.76	20.03	135.62	0.02	0.02	791	44438		
			11:05:58	43.88	20.03	135.61	0.02	0.02	791	40773		
			11:05:59	43.73	20.03	135.80	0.02	0.02	791	42299		
			11:06:00	43.77	20.03	135.80	0.02	0.02	791	42299		
			11:06:01	43.77	20.03	135.57	0.02	0.02	791	41198		
			11:06:02	43.75	20.03	135.48	0.02	0.02	791	40152		
			11:06:03	43.84	20.03	135.59	0.02	0.02	791	38775		
			11:06:04	43.81	20.03	137.32	0.08	0.08	791	9553		
			11:06:05	43.79	20.05	140.24	0.14	0.14	791	5791		
			11:06:06	43.77	20.04	136.40	0.02	0.02	791	40984		
			11:06:07	43.78	20.03	135.93	0.02	0.02	791	45460		
			11:06:08	43.81	20.03	135.90	0.02	0.02	791	43702		
			11:06:09	43.79	20.03	135.88	0.02	0.02	791	40984		
			11:06:10	43.83	20.03	135.61	0.02	0.02	791	45988		
			11:06:11	43.87	20.03	135.69	0.02	0.02	791	41414		
			11:06:12	43.94	20.03	135.95	0.02	0.02	791	43702		
			11:06:13	43.92	20.03	135.86	0.02	0.02	791	41414		
			11:06:14	43.99	20.03	135.65	0.02	0.02	791	39949		
			11:06:15	43.99	20.03	135.35	0.02	0.02	791	39949		
			11:06:16	44.01	20.03	135.78	0.02	0.02	791	40984		
			11:06:17	44.00	20.05	142.78	12.42	10.77	791	73		
			11:06:18	44.01	20.06	142.66	19.43	17.06	791	46		
			11:06:19	44.11	20.06	141.49	22.53	19.83	791	40	58	Diffuser port plume at 44 ft
			11:06:20	44.09	20.06	143.71	21.76	19.15	791	41		
			11:06:21	44.18	20.06	140.53	14.08	12.25	791	65		
			11:06:22	44.21	20.05	139.95	11.01	9.50	791	83		
			11:06:23	44.18	20.05	139.38	6.60	5.55	791	143		
			11:06:24	44.25	20.04	137.02	0.78	0.33	791	2430		
			11:06:25	44.20	20.03	136.05	0.02	0.02	791	44190		
			11:06:26	44.26	20.03	137.30	6.06	5.06	791	156		
			11:06:27	44.31	20.04	138.00	6.25	5.22	791	151	131	Diffuser port plume at 44 ft
			11:06:28	44.27	20.04	138.63	10.76	9.27	791	85		
			11:06:29	44.33	20.05	138.95	5.48	4.54	791	174		
			11:06:30	44.31	20.04	136.27	0.70	0.25	791	3190		
			11:06:31	44.41	20.03	135.65	0.02	0.02	791	40984		
			11:06:32	44.30	20.03	135.59	0.57	0.13	791	5971		

**TABLE D-24**

Profile PRO-18 on September 22, 2022 (1054-1108 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

28	Instantaneous Minimum Dilution in Profile
37	Minimum Average Dilution in Profile
93	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:06:33	44.41	20.03	135.73	2.86	2.19	791	361		Diffuser port plume at 44 ft
			11:06:34	44.33	20.03	135.73	6.63	5.57	791	142		
			11:06:35	44.36	20.03	136.03	2.07	1.48	791	534		
			11:06:36	44.41	20.03	136.67	3.50	2.77	791	286		
			11:06:37	44.33	20.04	138.79	13.27	11.52	791	69		
			11:06:38	44.54	20.05	138.87	12.45	10.79	791	73	94	
			11:06:39	44.51	20.04	137.01	6.71	5.64	791	140		
			11:06:40	44.56	20.04	136.08	8.74	7.46	791	106		
			11:06:41	44.59	20.03	135.59	2.55	1.91	791	414		
			11:06:42	44.52	20.03	135.38	0.02	0.02	791	42299		
			11:06:43	44.59	20.03	135.35	0.02	0.02	791	42757		
			11:06:44	44.60	20.03	135.33	0.02	0.02	791	45200		
			11:06:45	44.50	20.03	135.36	0.02	0.02	791	44689		
			11:06:46	44.64	20.03	135.40	0.02	0.02	791	41852		
			11:06:47	44.61	20.04	138.12	3.26	2.54	791	311		
			11:06:48	44.64	20.04	137.99	6.38	5.34	791	148		
			11:06:49	44.60	20.05	141.34	12.55	10.88	791	73		
			11:06:50	44.68	20.06	141.87	13.36	11.61	791	68		
			11:06:51	44.66	20.06	141.15	14.43	12.57	791	63	70	
			11:06:52	44.56	20.06	141.29	10.79	9.30	791	85		
			11:06:53	44.60	20.06	140.91	14.07	12.25	791	65		
			11:06:54	44.56	20.05	137.06	13.36	11.61	791	68		
			11:06:55	44.58	20.04	136.67	7.78	6.60	791	120		
			11:06:56	44.57	20.04	136.98	0.45	0.03	791	30672		
			11:06:57	44.55	20.03	135.62	0.02	0.02	791	42757		
			11:06:58	44.61	20.03	135.42	0.02	0.02	791	42299		
			11:06:59	44.69	20.03	135.38	0.02	0.02	791	41852		
			11:07:00	44.68	20.03	135.71	1.07	0.58	791	1355		
			11:07:01	44.78	20.03	137.56	2.86	2.19	791	361		
			11:07:02	44.84	20.05	139.46	4.42	3.58	791	221		
			11:07:03	44.79	20.05	139.01	10.50	9.05	791	87		
			11:07:04	44.84	20.04	137.94	11.62	10.04	791	79		
			11:07:05	44.90	20.05	142.02	16.82	14.72	791	54		
			11:07:06	44.90	20.07	143.74	16.31	14.25	791	56	66	
			11:07:07	44.91	20.06	141.13	11.14	9.61	791	82		
			11:07:08	44.93	20.06	141.35	10.20	8.77	791	90		
			11:07:09	45.02	20.07	144.53	18.03	15.80	791	50		
			11:07:10	44.94	20.08	145.56	21.01	18.48	791	43		
			11:07:11	45.08	20.08	145.71	18.63	16.33	791	48		

**TABLE D-24**

Profile PRO-18 on September 22, 2022 (1054-1108 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

28	Instantaneous Minimum Dilution in Profile
37	Minimum Average Dilution in Profile
93	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:07:12	44.95	20.07	143.77	12.99	11.28	791	70		Diffuser port plume at 44 ft
			11:07:13	45.06	20.07	142.17	13.01	11.30	791	70		
			11:07:14	45.06	20.05	137.83	7.26	6.13	791	129		
			11:07:15	45.06	20.04	137.91	9.11	7.80	791	101		
			11:07:16	45.00	20.04	138.22	15.25	13.30	791	59		
			11:07:17	45.01	20.04	138.61	12.12	10.50	791	75		
			11:07:18	44.96	20.05	139.27	15.28	13.34	791	59		
			11:07:19	45.01	20.05	139.68	9.81	8.42	791	94		
			11:07:20	44.93	20.06	142.88	10.95	9.44	791	84	73	
			11:07:21	44.92	20.06	142.88	13.66	11.87	791	67		
			11:07:22	44.84	20.06	140.63	14.23	12.39	791	64		
			11:07:23	44.90	20.05	139.30	10.48	9.03	791	88		
			11:07:24	44.91	20.05	140.01	12.73	11.04	791	72		
			11:07:25	44.84	20.05	139.01	12.86	11.16	791	71		
			11:07:26	44.87	20.05	139.21	8.96	7.66	791	103		
			11:07:27	44.78	20.05	140.91	10.92	9.42	791	84		
			11:07:28	44.82	20.06	142.18	13.50	11.74	791	67		
			11:07:29	44.79	20.06	139.66	4.95	4.06	791	195		
			11:07:30	44.71	20.05	140.12	1.51	0.98	791	808		
			11:07:31	44.70	20.05	140.62	4.33	3.50	791	226		
			11:07:32	44.73	20.06	141.07	4.21	3.40	791	233		
			11:07:33	44.60	20.06	140.85	10.36	8.91	791	89		
			11:07:34	44.73	20.05	140.06	6.79	5.71	791	138		
			11:07:35	44.69	20.04	137.39	4.05	3.25	791	243		
			11:07:36	44.76	20.04	137.91	8.79	7.51	791	105		
			11:07:37	44.69	20.05	141.90	7.30	6.17	791	128		
			11:07:38	44.76	20.06	141.96	14.13	12.30	791	64		
			11:07:39	44.68	20.06	143.39	11.62	10.05	791	79		
			11:07:40	44.85	20.07	144.28	16.49	14.42	791	55		
			11:07:41	44.75	20.07	143.64	20.41	17.94	791	44	71	
			11:07:42	44.83	20.07	143.53	15.76	13.76	791	57		
			11:07:43	44.86	20.06	141.99	11.19	9.67	791	82		
			11:07:44	44.74	20.06	141.33	9.74	8.36	791	95		
			11:07:45	44.90	20.06	140.21	10.29	8.85	791	89		
			11:07:46	44.87	20.05	141.96	9.17	7.85	791	101		
			11:07:47	44.94	20.07	145.73	25.28	22.30	791	35		
			11:07:48	44.93	20.08	145.06	22.85	20.13	791	39		
			11:07:49	45.00	20.06	139.76	9.29	7.96	791	99		
			11:07:50	45.04	20.05	141.49	10.07	8.66	791	91		

**TABLE D-24**

Profile PRO-18 on September 22, 2022 (1054-1108 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

28	Instantaneous Minimum Dilution in Profile
37	Minimum Average Dilution in Profile
93	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:07:51	44.99	20.06	144.25	20.74	18.23	791	43	55	Diffuser port plume at 44 ft
			11:07:52	45.04	20.08	145.63	20.45	17.97	791	44		
			11:07:53	44.98	20.08	144.58	22.70	19.98	791	40		
			11:07:54	45.07	20.08	145.92	22.84	20.11	791	39		
			11:07:55	45.09	20.08	145.01	23.83	21.00	791	38		
			11:07:56	45.01	20.07	142.73	18.43	16.16	791	49		
			11:07:57	45.13	20.07	142.32	16.00	13.98	791	57		
			11:07:58	45.00	20.06	140.32	10.87	9.38	791	84		
			11:07:59	45.07	20.05	138.91	6.16	5.15	791	154		
			11:08:00	45.15	20.04	136.96	3.63	2.88	791	275		
			11:08:01	45.10	20.04	139.64	6.55	5.50	791	144		
			11:08:02	45.19	20.06	143.07	16.42	14.35	791	55		
			11:08:03	45.09	20.07	143.40	17.94	15.72	791	50		
			11:08:04	45.11	20.07	143.07	15.80	13.80	791	57	57	Diffuser port plume at 44 ft
			11:08:05	45.19	20.07	144.24	12.54	10.88	791	73		
			11:08:06	45.13	20.07	144.34	14.73	12.84	791	62		
			11:08:07	45.17	20.07	142.18	20.07	17.63	791	45		
			11:08:08	45.21	20.05	139.17	7.31	6.18	791	128		
			11:08:09	45.21	20.06	145.42	14.28	12.43	791	64		
			11:08:10	45.19	20.08	146.26	22.47	19.78	791	40		
			11:08:11	45.19	20.08	144.43	19.98	17.55	791	45		
			11:08:12	45.15	20.07	142.27	14.00	12.18	791	65	51	
			11:08:13	45.09	20.06	143.16	14.57	12.69	791	62		
			11:08:14	45.09	20.07	144.84	21.00	18.46	791	43		
			11:08:15	45.05	20.08	145.18	25.01	22.06	791	36		
			11:08:16	45.07	20.07	141.61	17.84	15.63	791	51		
			11:08:17	45.05	20.05	140.74	8.29	7.06	791	112		
			11:08:18	45.07	20.06	141.64	9.65	8.28	791	96		
			11:08:19	45.01	20.05	137.37	4.89	4.01	791	197		
			11:08:20	45.08	20.04	138.46	7.85	6.66	791	119		
			11:08:21	45.03	20.04	137.36	8.33	7.10	791	111		
			11:08:22	44.97	20.05	142.16	10.20	8.77	791	90		
			11:08:23	45.06	20.06	141.46	16.28	14.23	791	56		
			11:08:24	44.99	20.06	142.04	7.17	6.06	791	131		
			11:08:25	45.01	20.07	146.12	13.18	11.45	791	69		
			11:08:26	44.97	20.08	147.51	22.31	19.64	791	40		
			11:08:27	44.98	20.08	144.62	25.66	22.65	791	35	45	Diffuser port plume at 44 ft
			11:08:28	44.97	20.07	144.58	25.95	22.91	791	35		
			11:08:29	44.99	20.07	141.00	24.81	21.88	791	36		

**TABLE D-24**

Profile PRO-18 on September 22, 2022 (1054-1108 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

28	Instantaneous Minimum Dilution in Profile
37	Minimum Average Dilution in Profile
93	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:08:30	44.90	20.05	140.90	15.97	13.95	791	57		
			11:08:31	44.96	20.05	139.03	6.26	5.24	791	151		
			11:08:32	44.85	20.04	137.05	6.08	5.07	791	156		
			11:08:33	44.89	20.04	137.03	3.99	3.20	791	247		
			11:08:34	44.90	20.03	136.20	0.02	0.02	791	44689		
			11:08:35	44.89	20.03	135.47	0.02	0.02	791	45988		
			11:08:36	44.89	20.03	135.40	0.02	0.02	791	44689		
			11:08:37	44.93	20.03	135.60	0.02	0.02	791	40773		
			11:08:38	44.89	20.03	137.07	0.90	0.43	791	1825		
			11:08:39	44.91	20.03	135.92	1.60	1.06	791	745		
			11:08:40	45.01	20.03	135.54	0.43	0.01	791	98579		
			11:08:41	44.97	20.03	135.52	0.02	0.02	791	40984		
			11:08:42	44.90	20.03	135.63	0.79	0.33	791	2373		
			11:08:43	44.95	20.03	135.50	0.34	0.34	791	2314		
			11:08:44	44.81	20.03	135.44	0.78	0.32	791	2449		
			11:08:45	44.86	20.03	136.44	3.93	3.15	791	251		
			11:08:46	44.75	20.03	135.76	0.38	0.38	791	2055		
			11:08:47	44.87	20.03	135.63	0.02	0.02	791	43702		



**TABLE D-25**

Profile PRO-19 on September 22, 2022 (1125-1135 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>243</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>532</b>	<b>Minimum Average Dilution in Profile</b>
<b>786</b>	<b>Plume Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-19 (North Mixing Zone Boundary - 242 ft from Diffuser at West Edge)	52 ft	0.53 m/sec 353 deg. (mag.) Ebb Tide	11:25:34	1.73	20.00	139.57	0.02	0.02	785	33263		No plume detected near surface
			11:25:35	2.07	19.98	139.04	0.05	0.05	785	17444		
			11:25:36	2.35	19.97	138.75	0.02	0.02	785	45115		
			11:25:37	2.34	19.96	139.24	0.02	0.02	785	41099		
			11:25:38	2.42	19.98	139.28	0.02	0.02	785	39848		
			11:25:39	2.42	19.99	139.26	0.02	0.02	785	40051		
			11:25:40	2.28	19.99	139.33	0.02	0.02	785	42896		
			11:25:41	2.42	19.99	139.16	0.02	0.02	785	45640		
			11:25:42	2.38	19.92	138.68	0.02	0.02	785	43855		
			11:25:43	2.31	19.91	139.57	0.02	0.02	785	39447		
			11:25:44	2.37	19.97	139.37	0.02	0.02	785	40256		
			11:25:45	2.38	19.98	139.36	0.02	0.02	785	43370		
			11:25:46	2.29	19.99	139.97	0.02	0.02	785	45376		
			11:25:47	2.39	19.99	139.22	0.02	0.02	785	38480		
			11:25:48	2.40	19.95	139.42	0.02	0.02	785	41534		
			11:25:49	2.27	19.97	140.01	0.02	0.02	785	40464		
			11:25:50	2.38	19.97	138.99	0.02	0.02	785	44350		
			11:25:51	2.27	19.72	138.61	0.02	0.02	785	41534		
			11:25:52	2.38	19.62	138.82	0.02	0.02	785	41099		
			11:25:53	2.29	19.61	138.30	0.02	0.02	785	44350		
			11:25:54	2.24	19.48	137.66	0.02	0.02	785	43855		
			11:25:55	2.40	19.38	137.70	0.02	0.02	785	37740		
			11:25:56	2.26	19.38	138.08	0.02	0.02	785	43370		
			11:25:57	2.31	19.40	138.44	0.02	0.02	785	42896		
11:25:58	2.37	19.47	138.91	0.02	0.02	785	40674					
11:25:59	2.30	19.54	139.23	0.02	0.02	785	42896					
11:26:00	2.36	19.60	139.51	0.02	0.02	785	40051					
11:26:01	2.40	19.67	139.78	0.02	0.02	785	40674					
11:26:02	2.41	19.70	140.00	0.02	0.02	785	42432					
11:26:03	2.44	19.74	140.16	0.02	0.02	785	39646					
11:26:04	2.38	19.77	140.38	0.02	0.02	785	41099					
11:26:05	2.48	19.82	140.41	0.02	0.02	785	41979					
11:26:06	2.37	19.82	140.51	0.02	0.02	785	40256					
11:26:07	2.29	19.83	140.51	0.02	0.02	785	40051					
11:26:08	2.29	19.86	140.60	0.02	0.02	785	40674					
11:26:09	2.23	19.86	140.64	0.02	0.02	785	41534					
11:26:10	2.28	19.87	140.69	0.02	0.02	785	39646					
11:26:11	2.40	19.88	140.72	0.02	0.02	785	43855					
11:26:12	2.78	19.90	140.68	0.02	0.02	785	39848					

**TABLE D-25**

Profile PRO-19 on September 22, 2022 (1125-1135 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

243	Instantaneous Minimum Dilution in Profile
532	Minimum Average Dilution in Profile
786	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:26:13	5.44	19.93	141.29	0.02	0.02	785	41979		No plume detected at 7-8 ft
			11:26:14	7.41	19.98	141.09	0.02	0.02	785	41099		
			11:26:15	7.79	19.91	140.74	0.02	0.02	785	41534		
			11:26:16	7.77	19.90	141.05	0.02	0.02	785	43370		
			11:26:17	7.94	20.00	140.96	0.02	0.02	785	41099		
			11:26:18	7.81	20.01	140.86	0.02	0.02	785	43855		
			11:26:19	7.89	20.01	141.15	0.02	0.02	785	44101		
			11:26:20	7.95	20.01	141.39	0.02	0.02	785	44350		
			11:26:21	7.81	20.01	141.48	0.02	0.02	785	41534		
			11:26:22	7.98	20.01	141.60	0.02	0.02	785	44350		
			11:26:23	7.83	20.01	141.73	0.02	0.02	785	45906		
			11:26:24	7.94	20.01	141.75	0.02	0.02	785	40674		
			11:26:25	7.83	20.01	141.69	0.02	0.02	785	40674		
			11:26:26	7.88	20.01	141.67	0.02	0.02	785	39250		
			11:26:27	7.86	20.01	141.58	0.02	0.02	785	42896		
			11:26:28	7.85	20.01	141.52	0.02	0.02	785	38107		
			11:26:29	7.77	20.01	141.39	0.02	0.02	785	39848		
			11:26:30	7.89	20.01	141.41	0.02	0.02	785	43370		
			11:26:31	7.84	20.01	141.41	0.02	0.02	785	38861		
			11:26:32	7.91	20.01	141.46	0.02	0.02	785	41979		
			11:26:33	7.90	20.01	141.44	0.02	0.02	785	41534		
			11:26:34	7.85	20.01	141.46	0.02	0.02	785	39250		
			11:26:35	7.93	20.01	141.44	0.02	0.02	785	46176		
			11:26:36	7.90	20.01	141.39	0.02	0.02	785	38861		
			11:26:37	7.93	20.01	141.41	0.02	0.02	785	41979		
			11:26:38	7.95	20.01	141.41	0.02	0.02	785	40256		
			11:26:39	7.93	20.01	141.39	0.02	0.02	785	43855		
			11:26:40	8.00	20.01	141.39	0.02	0.02	785	42432		
			11:26:41	7.95	20.01	141.35	0.02	0.02	785	40464		
			11:26:42	7.96	20.01	141.33	0.02	0.02	785	39646		
			11:26:43	7.92	20.01	141.39	0.02	0.02	785	42432		
			11:26:44	7.87	20.01	141.39	0.02	0.02	785	41534		
			11:26:45	7.88	20.01	141.47	0.02	0.02	785	41099		
			11:26:46	7.83	20.01	141.41	0.02	0.02	785	41979		
			11:26:47	7.93	20.01	141.39	0.02	0.02	785	44350		
			11:26:48	7.86	20.01	141.39	0.02	0.02	785	39848		
			11:26:49	7.90	20.01	141.44	0.02	0.02	785	35682		
			11:26:50	7.92	20.01	141.24	0.02	0.02	785	43370		
			11:26:51	7.89	20.01	141.09	0.02	0.02	785	40256		

**TABLE D-25**

Profile PRO-19 on September 22, 2022 (1125-1135 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

243	Instantaneous Minimum Dilution in Profile
532	Minimum Average Dilution in Profile
786	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:26:52	7.96	20.01	140.99	0.02	0.02	785	42432		
			11:26:53	7.87	20.01	141.33	0.02	0.02	785	39250		
			11:26:54	7.91	20.01	141.39	0.02	0.02	785	38861		
			11:26:55	7.95	20.01	141.50	0.02	0.02	785	41979		
			11:26:56	8.04	20.01	141.52	0.02	0.02	785	42432		
			11:26:57	8.55	20.01	141.44	0.02	0.02	785	39250		
			11:26:58	8.79	20.01	141.31	0.02	0.02	785	39848		
			11:26:59	8.96	20.01	141.54	0.02	0.02	785	39848		
			11:27:00	8.99	20.01	141.63	0.02	0.02	785	44602		
			11:27:01	9.64	20.01	141.75	0.02	0.02	785	42896		
			11:27:02	12.11	20.01	141.75	0.02	0.02	785	41979		
			11:27:03	12.79	20.01	141.82	0.02	0.02	785	38107		
			11:27:04	12.88	20.02	141.82	0.02	0.02	785	41979		
			11:27:05	12.98	20.02	141.82	0.02	0.02	785	42896		
			11:27:06	12.94	20.02	141.80	0.02	0.02	785	39848		
			11:27:07	12.98	20.01	141.77	0.02	0.02	785	40674		
			11:27:08	12.94	20.01	141.71	0.02	0.02	785	41979		
			11:27:09	13.00	20.01	141.60	0.02	0.02	785	44602		
			11:27:10	13.05	20.01	141.46	0.02	0.02	785	43370		
			11:27:11	12.99	20.01	141.69	0.02	0.02	785	37381		
			11:27:12	13.01	20.01	141.67	0.02	0.02	785	41979		
			11:27:13	13.01	20.01	141.65	0.02	0.02	785	40674		
			11:27:14	12.94	20.01	141.55	0.02	0.02	785	42432		
			11:27:15	12.86	20.01	141.56	0.02	0.02	785	41099		
			11:27:16	13.11	20.01	141.50	0.02	0.02	785	41979		
			11:27:17	12.89	20.01	141.46	0.02	0.02	785	41979		
			11:27:18	13.00	20.01	141.46	0.02	0.02	785	41099		
			11:27:19	12.90	20.01	141.41	0.02	0.02	785	42432		
			11:27:20	12.89	20.01	141.48	0.02	0.02	785	41534		
			11:27:21	12.98	20.01	141.59	0.02	0.02	785	41979		
			11:27:22	12.75	20.01	141.69	0.02	0.02	785	37381		
			11:27:23	12.94	20.01	141.48	0.02	0.02	785	41534		
			11:27:24	12.87	20.01	141.58	0.02	0.02	785	42432		
			11:27:25	12.87	20.01	141.41	0.02	0.02	785	43370		
			11:27:26	12.79	20.01	140.74	0.02	0.02	785	41979		
			11:27:27	12.87	20.01	140.64	0.02	0.02	785	44350		
			11:27:28	12.84	20.01	140.36	0.02	0.02	785	42432		
			11:27:29	12.81	20.01	139.99	0.02	0.02	785	44602		
			11:27:30	12.91	20.01	139.88	0.02	0.02	785	39646		

No plume detected at 12-13 ft

**TABLE D-25**

Profile PRO-19 on September 22, 2022 (1125-1135 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

243	Instantaneous Minimum Dilution in Profile
532	Minimum Average Dilution in Profile
786	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:27:31	12.93	20.01	139.90	0.02	0.02	785	42432		
			11:27:32	12.85	20.01	139.90	0.02	0.02	785	43855		
			11:27:33	12.90	20.01	139.99	0.02	0.02	785	40464		
			11:27:34	12.93	20.01	140.36	0.02	0.02	785	39250		
			11:27:35	12.99	20.02	140.14	0.02	0.02	785	40674		
			11:27:36	13.06	20.01	139.95	0.02	0.02	785	41099		
			11:27:37	13.09	20.01	140.38	0.02	0.02	785	40674		
			11:27:38	13.14	20.01	140.85	0.02	0.02	785	43855		
			11:27:39	12.94	20.01	140.51	0.02	0.02	785	43370		
			11:27:40	13.07	20.01	140.35	0.02	0.02	785	44857		
			11:27:41	13.29	20.01	140.29	0.02	0.02	785	41979		
			11:27:42	15.94	20.01	140.50	0.02	0.02	785	39447		
			11:27:43	17.84	20.01	140.64	0.02	0.02	785	43855		
			11:27:44	18.37	20.01	140.74	0.02	0.02	785	44350		
			11:27:45	18.31	20.01	141.23	0.02	0.02	785	44602		
			11:27:46	18.24	20.01	141.46	0.02	0.02	785	43370		
			11:27:47	18.43	20.01	141.46	0.02	0.02	785	47289		
			11:27:48	18.41	20.01	141.39	0.02	0.02	785	39646		
			11:27:49	18.27	20.01	141.48	0.02	0.02	785	38861		
			11:27:50	18.28	20.01	141.51	0.02	0.02	785	40051		
			11:27:51	18.34	20.01	141.54	0.02	0.02	785	45115		
			11:27:52	18.13	20.01	141.37	0.02	0.02	785	39646		
			11:27:53	18.16	20.01	141.39	0.02	0.02	785	41099		
			11:27:54	18.18	20.01	141.44	0.02	0.02	785	41534		
			11:27:55	18.16	20.01	141.69	0.02	0.02	785	38480		
			11:27:56	18.19	20.02	141.65	0.02	0.02	785	44857		
			11:27:57	18.08	20.02	141.77	0.02	0.02	785	40674		
			11:27:58	18.22	20.02	141.82	0.02	0.02	785	45640		
			11:27:59	18.25	20.01	141.80	0.02	0.02	785	39250		
			11:28:00	18.04	20.01	141.89	0.02	0.02	785	43370		
			11:28:01	18.31	20.01	141.87	0.02	0.02	785	41534		
			11:28:02	18.10	20.01	141.92	0.02	0.02	785	40256		
			11:28:03	18.16	20.01	141.76	0.02	0.02	785	40256		
			11:28:04	18.14	20.01	141.61	0.02	0.02	785	42432		
			11:28:05	17.98	20.01	141.31	0.02	0.02	785	39646		
			11:28:06	18.06	20.01	141.19	0.02	0.02	785	43370		
			11:28:07	18.11	20.01	140.82	0.02	0.02	785	41979		
			11:28:08	17.92	20.01	140.66	0.02	0.02	785	39646		
			11:28:09	18.04	20.01	140.95	0.02	0.02	785	42896		

No plume detected at 18 ft

**TABLE D-25**

Profile PRO-19 on September 22, 2022 (1125-1135 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

243	Instantaneous Minimum Dilution in Profile
532	Minimum Average Dilution in Profile
786	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:28:10	18.08	20.01	141.14	0.02	0.02	785	39250		
			11:28:11	18.05	20.01	141.05	0.02	0.02	785	39646		
			11:28:12	18.04	20.01	140.70	0.02	0.02	785	38861		
			11:28:13	18.09	20.01	140.70	0.02	0.02	785	39646		
			11:28:14	18.15	20.01	140.87	0.02	0.02	785	42896		
			11:28:15	17.98	20.01	140.96	0.02	0.02	785	42896		
			11:28:16	18.04	20.01	141.06	0.02	0.02	785	39848		
			11:28:17	18.25	20.01	141.12	0.02	0.02	785	39646		
			11:28:18	18.12	20.01	140.96	0.02	0.02	785	42896		
			11:28:19	18.13	20.01	140.96	0.02	0.02	785	41979		
			11:28:20	18.29	20.01	140.87	0.02	0.02	785	38861		
			11:28:21	18.20	20.01	140.64	0.02	0.02	785	43370		
			11:28:22	18.32	20.01	140.39	0.02	0.02	785	40464		
			11:28:23	18.12	20.01	140.31	0.02	0.02	785	42432		
			11:28:24	18.24	20.01	140.34	0.02	0.02	785	41534		
			11:28:25	18.28	20.01	140.36	0.02	0.02	785	38480		
			11:28:26	18.17	20.01	139.52	0.02	0.02	785	43855		
			11:28:27	18.15	20.01	139.13	0.02	0.02	785	40674		
			11:28:28	18.26	20.01	138.93	0.02	0.02	785	39848		
			11:28:29	18.19	20.01	138.90	0.02	0.02	785	39250		
			11:28:30	18.12	20.01	139.13	0.02	0.02	785	43855		
			11:28:31	18.18	20.01	139.67	0.02	0.02	785	41099		
			11:28:32	18.24	20.01	140.05	0.02	0.02	785	40674		
			11:28:33	18.29	20.01	141.25	0.02	0.02	785	40464		
			11:28:34	18.18	20.01	141.41	0.02	0.02	785	41979		
			11:28:35	18.21	20.01	141.37	0.02	0.02	785	44857		
			11:28:36	18.33	20.01	141.21	0.02	0.02	785	38107		
			11:28:37	18.22	20.01	140.70	0.02	0.02	785	43855		
			11:28:38	18.03	20.01	140.53	0.02	0.02	785	43855		
			11:28:39	18.13	20.01	140.47	0.02	0.02	785	38480		
			11:28:40	18.13	20.01	140.88	0.02	0.02	785	39447		
			11:28:41	18.06	20.01	141.06	0.02	0.02	785	46726		
			11:28:42	18.01	20.01	141.12	0.02	0.02	785	38480		
			11:28:43	18.05	20.01	140.99	0.02	0.02	785	40051		
			11:28:44	18.19	20.01	140.81	0.02	0.02	785	40674		
			11:28:45	18.13	20.01	140.51	0.02	0.02	785	38861		
			11:28:46	18.21	20.01	140.59	0.02	0.02	785	44350		
			11:28:47	18.36	20.01	141.27	0.02	0.02	785	41979		
			11:28:48	18.29	20.01	141.41	0.02	0.02	785	41979		

**TABLE D-25**

Profile PRO-19 on September 22, 2022 (1125-1135 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

243	Instantaneous Minimum Dilution in Profile
532	Minimum Average Dilution in Profile
786	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:28:49	18.20	20.01	141.27	0.02	0.02	785	45640		No plume detected at 23 ft
			11:28:50	18.25	20.01	141.06	0.02	0.02	785	41534		
			11:28:51	19.85	20.01	140.96	0.02	0.02	785	43370		
			11:28:52	22.47	20.01	140.81	0.02	0.02	785	40051		
			11:28:53	23.31	20.01	140.79	0.02	0.02	785	41099		
			11:28:54	23.62	20.01	140.76	0.02	0.02	785	41099		
			11:28:55	23.67	20.01	140.74	0.02	0.02	785	42896		
			11:28:56	23.32	20.01	140.53	0.02	0.02	785	41099		
			11:28:57	23.30	20.01	140.27	0.02	0.02	785	42432		
			11:28:58	23.47	20.02	139.78	0.02	0.02	785	38480		
			11:28:59	23.23	20.02	139.60	0.02	0.02	785	41099		
			11:29:00	23.17	20.02	140.40	0.02	0.02	785	43370		
			11:29:01	23.30	20.01	140.18	0.02	0.02	785	38107		
			11:29:02	23.36	20.01	140.23	0.02	0.02	785	41979		
			11:29:03	23.06	20.01	139.88	0.02	0.02	785	44857		
			11:29:04	23.10	20.01	140.28	0.02	0.02	785	43855		
			11:29:05	23.18	20.01	140.18	0.02	0.02	785	40674		
			11:29:06	23.08	20.01	139.80	0.02	0.02	785	41099		
			11:29:07	22.93	20.01	139.32	0.02	0.02	785	40674		
			11:29:08	23.06	20.02	138.99	0.02	0.02	785	40674		
			11:29:09	23.15	20.02	139.28	0.02	0.02	785	42432		
			11:29:10	23.13	20.02	139.49	0.02	0.02	785	39250		
			11:29:11	23.03	20.01	139.23	0.02	0.02	785	42432		
			11:29:12	23.27	20.02	139.11	0.02	0.02	785	44602		
			11:29:13	23.14	20.02	139.19	0.02	0.02	785	38861		
			11:29:14	23.12	20.02	139.21	0.02	0.02	785	41534		
			11:29:15	23.39	20.02	139.04	0.02	0.02	785	43855		
			11:29:16	23.29	20.02	139.18	0.02	0.02	785	43855		
			11:29:17	23.36	20.01	139.47	0.02	0.02	785	41099		
			11:29:18	23.51	20.01	139.97	0.02	0.02	785	37740		
			11:29:19	23.34	20.02	139.30	0.02	0.02	785	37028		
			11:29:20	23.49	20.02	139.23	0.02	0.02	785	38107		
			11:29:21	23.57	20.02	139.28	0.02	0.02	785	43370		
			11:29:22	23.50	20.02	139.89	0.02	0.02	785	45115		
			11:29:23	23.46	20.01	139.78	0.02	0.02	785	38480		
			11:29:24	23.55	20.01	139.50	0.02	0.02	785	44350		
			11:29:25	23.54	20.01	139.57	0.02	0.02	785	39250		
			11:29:26	23.42	20.01	139.78	0.02	0.02	785	42896		
			11:29:27	23.45	20.01	139.72	0.02	0.02	785	39848		

**TABLE D-25**

Profile PRO-19 on September 22, 2022 (1125-1135 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

243	Instantaneous Minimum Dilution in Profile
532	Minimum Average Dilution in Profile
786	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:29:28	23.65	20.01	139.44	0.02	0.02	785	38480		
			11:29:29	23.41	20.01	139.53	0.02	0.02	785	40051		
			11:29:30	23.51	20.01	139.28	0.02	0.02	785	41979		
			11:29:31	23.69	20.01	138.70	0.02	0.02	785	41979		
			11:29:32	23.64	20.02	137.81	0.02	0.02	785	45640		
			11:29:33	23.54	20.02	137.41	0.02	0.02	785	43855		
			11:29:34	23.65	20.02	137.63	0.02	0.02	785	42896		
			11:29:35	23.82	20.02	137.72	0.02	0.02	785	44857		
			11:29:36	23.55	20.02	138.34	0.02	0.02	785	42896		
			11:29:37	23.64	20.02	138.78	0.02	0.02	785	44350		
			11:29:38	23.75	20.02	138.42	0.02	0.02	785	37740		
			11:29:39	23.71	20.02	138.73	0.02	0.02	785	40256		
			11:29:40	23.68	20.01	139.02	0.02	0.02	785	41534		
			11:29:41	23.77	20.01	139.26	0.02	0.02	785	41099		
			11:29:42	23.87	20.01	139.36	0.02	0.02	785	46176		
			11:29:43	23.91	20.01	139.62	0.02	0.02	785	41979		
			11:29:44	24.14	20.01	139.65	0.02	0.02	785	40256		
			11:29:45	27.22	20.02	137.43	0.02	0.02	785	44350		
			11:29:46	29.02	20.02	137.36	0.02	0.02	785	42432		
			11:29:47	29.11	20.02	137.66	0.02	0.02	785	41316		
			11:29:48	29.16	20.02	137.54	0.02	0.02	785	39250		No plume detected at 29 ft
			11:29:49	29.37	20.02	137.31	0.02	0.02	785	42896		
			11:29:50	29.22	20.02	137.33	0.02	0.02	785	40051		
			11:29:51	29.08	20.02	137.35	0.02	0.02	785	40464		
			11:29:52	29.10	20.02	137.39	0.02	0.02	785	40674		
			11:29:53	29.32	20.02	137.76	0.02	0.02	785	41099		
			11:29:54	29.08	20.02	137.91	0.02	0.02	785	43370		
			11:29:55	28.95	20.02	138.14	0.02	0.02	785	41979		
			11:29:56	29.24	20.02	138.63	0.02	0.02	785	41099		
			11:29:57	29.14	20.02	138.33	0.02	0.02	785	44350		
			11:29:58	28.97	20.02	139.04	0.02	0.02	785	40464		
			11:29:59	29.09	20.01	139.69	0.02	0.02	785	38861		
			11:30:00	29.18	20.01	140.07	0.02	0.02	785	45115		
			11:30:01	28.95	20.01	139.85	0.02	0.02	785	45115		
			11:30:02	29.00	20.01	139.84	0.02	0.02	785	42432		
			11:30:03	29.10	20.01	140.12	0.02	0.02	785	45376		
			11:30:04	28.99	20.01	140.20	0.02	0.02	785	42432		
			11:30:05	29.14	20.01	139.67	0.02	0.02	785	41979		
			11:30:06	29.13	20.01	139.64	0.02	0.02	785	39848		

**TABLE D-25**

Profile PRO-19 on September 22, 2022 (1125-1135 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>243</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>532</b>	<b>Minimum Average Dilution in Profile</b>
<b>786</b>	<b>Plume Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:30:07	29.30	20.01	139.56	0.02	0.02	785	41979		
			11:30:08	29.15	20.01	138.48	0.02	0.02	785	44350		
			11:30:09	29.19	20.02	138.20	0.02	0.02	785	44602		
			11:30:10	29.41	20.02	138.82	0.02	0.02	785	40464		
			11:30:11	29.14	20.02	139.02	0.02	0.02	785	40674		
			11:30:12	29.30	20.02	138.28	0.02	0.02	785	46726		
			11:30:13	29.32	20.02	137.72	0.02	0.02	785	44602		
			11:30:14	29.22	20.02	137.60	0.02	0.02	785	37381		
			11:30:15	29.24	20.02	137.31	0.02	0.02	785	46176		
			11:30:16	29.33	20.02	137.31	0.02	0.02	785	40256		
			11:30:17	29.62	20.02	137.48	0.02	0.02	785	43855		
			11:30:18	30.35	20.02	137.49	0.02	0.02	785	45376		
			11:30:19	33.15	20.02	137.66	0.02	0.02	785	45115		
			11:30:20	34.45	20.02	137.89	0.02	0.02	785	39447		
			11:30:21	34.51	20.02	138.10	0.02	0.02	785	39646		
			11:30:22	34.40	20.02	138.58	0.24	0.24	785	3285		
			11:30:23	34.68	20.02	138.66	1.44	0.91	785	863		
			11:30:24	34.45	20.02	137.83	0.02	0.02	785	40674		
			11:30:25	34.30	20.02	138.77	1.29	0.78	785	1008		
			11:30:26	34.52	20.03	139.45	1.46	0.94	785	839	826	Plume traces detected at 34 ft
			11:30:27	34.42	20.03	139.53	1.81	1.25	785	630		
			11:30:28	34.20	20.03	139.26	0.46	0.03	785	25777		
			11:30:29	34.30	20.03	139.11	0.11	0.11	785	6953		
			11:30:30	34.23	20.03	139.59	1.53	0.99	785	789		
			11:30:31	34.00	20.03	140.15	4.03	3.23	785	243	532	Plume traces detected at 34 ft
			11:30:32	34.04	20.03	139.33	1.97	1.39	785	565		
			11:30:33	33.99	20.02	138.99	0.12	0.12	785	6669		
			11:30:34	33.93	20.02	139.58	0.82	0.36	785	2187		
			11:30:35	33.80	20.03	139.49	0.55	0.11	785	6942		
			11:30:36	33.99	20.03	139.11	0.05	0.05	785	17367		
			11:30:37	34.04	20.02	138.83	0.02	0.02	785	42432		
			11:30:38	33.81	20.02	138.47	0.02	0.02	785	46176		
			11:30:39	34.00	20.02	138.83	0.02	0.02	785	43855		
			11:30:40	34.10	20.02	139.30	0.20	0.20	785	3915		
			11:30:41	33.86	20.02	138.89	0.04	0.04	785	17522		
			11:30:42	33.96	20.02	138.85	0.02	0.02	785	43855		
			11:30:43	34.10	20.03	139.62	1.34	0.82	785	956		
			11:30:44	34.15	20.03	139.65	1.26	0.76	785	1039	1001	Plume traces detected at 34 ft
			11:30:45	33.97	20.03	139.29	1.29	0.78	785	1009		



**TABLE D-25**

Profile PRO-19 on September 22, 2022 (1125-1135 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

243	Instantaneous Minimum Dilution in Profile
532	Minimum Average Dilution in Profile
786	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured	Calibration-	Measured	Instant. Minimum	Minimum Plume Avg. Dilution	Measurement Observations
							Dye Conc. (ppb)	Corrected Dye Conc. (ppb)	Initial Dye Conc. (ppb)			
			11:30:46	34.03	20.03	139.01	0.16	0.16	785	4888		
			11:30:47	34.25	20.02	138.85	0.20	0.20	785	3854		
			11:30:48	34.03	20.02	138.67	0.07	0.07	785	11716		
			11:30:49	33.92	20.02	138.46	0.02	0.02	785	45115		
			11:30:50	34.08	20.02	138.69	0.02	0.02	785	41979		
			11:30:51	34.16	20.02	138.52	0.02	0.02	785	39646		
			11:30:52	33.86	20.02	138.39	0.02	0.02	785	42432		
			11:30:53	34.05	20.02	138.56	0.02	0.02	785	39447		
			11:30:54	34.13	20.02	138.81	0.02	0.02	785	39447		
			11:30:55	33.89	20.02	139.32	0.02	0.02	785	42896		
			11:30:56	33.93	20.02	139.64	0.02	0.02	785	43611		
			11:30:57	33.91	20.01	139.99	0.02	0.02	785	42432		
			11:30:58	34.07	20.01	140.18	0.02	0.02	785	42432		
			11:30:59	33.95	20.01	140.20	0.02	0.02	785	41755		
			11:31:00	34.10	20.01	140.02	0.02	0.02	785	41979		
			11:31:01	34.44	20.01	139.69	0.02	0.02	785	41099		
			11:31:02	34.38	20.01	138.85	0.02	0.02	785	41099		
			11:31:03	34.39	20.02	138.89	0.32	0.32	785	2463		
			11:31:04	34.50	20.02	139.47	0.02	0.02	785	41534		
			11:31:05	34.70	20.02	139.11	0.02	0.02	785	42432		
			11:31:06	34.45	20.02	139.13	0.02	0.02	785	40256		
			11:31:07	34.51	20.02	139.24	0.02	0.02	785	42432		
			11:31:08	34.56	20.02	138.94	0.02	0.02	785	45906		
			11:31:09	34.63	20.02	138.56	0.02	0.02	785	43370		
			11:31:10	34.41	20.02	139.21	0.02	0.02	785	38107		
			11:31:11	34.46	20.01	139.40	0.02	0.02	785	40256		
			11:31:12	34.65	20.02	139.07	0.02	0.02	785	39250		
			11:31:13	34.47	20.02	138.71	0.02	0.02	785	43855		
			11:31:14	34.29	20.02	139.61	0.02	0.02	785	43370		
			11:31:15	34.36	20.01	140.38	0.02	0.02	785	44602		
			11:31:16	34.42	20.01	140.01	0.02	0.02	785	41099		
			11:31:17	34.44	20.01	139.34	0.02	0.02	785	42432		
			11:31:18	34.11	20.01	140.09	0.02	0.02	785	43370		
			11:31:19	34.38	20.01	139.40	0.02	0.02	785	40256		
			11:31:20	34.32	20.01	138.95	0.02	0.02	785	40256		
			11:31:21	34.19	20.01	138.71	0.02	0.02	785	42432		
			11:31:22	34.26	20.01	138.62	0.02	0.02	785	42432		
			11:31:23	34.30	20.02	138.37	0.02	0.02	785	43370		
			11:31:24	34.31	20.02	138.48	0.02	0.02	785	41534		

**TABLE D-25**

Profile PRO-19 on September 22, 2022 (1125-1135 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

243	Instantaneous Minimum Dilution in Profile
532	Minimum Average Dilution in Profile
786	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:31:25	34.20	20.02	139.13	0.02	0.02	785	41099		
			11:31:26	34.23	20.02	139.09	0.02	0.02	785	39646		
			11:31:27	34.31	20.02	139.17	0.02	0.02	785	41979		
			11:31:28	34.22	20.02	140.24	0.02	0.02	785	41099		
			11:31:29	34.25	20.01	140.67	0.02	0.02	785	44350		
			11:31:30	34.25	20.01	140.87	0.02	0.02	785	40674		
			11:31:31	34.25	20.01	140.87	0.02	0.02	785	42896		
			11:31:32	34.34	20.01	140.85	0.02	0.02	785	40256		
			11:31:33	34.20	20.01	140.81	0.02	0.02	785	40051		
			11:31:34	34.21	20.01	140.77	0.02	0.02	785	41534		
			11:31:35	34.34	20.01	140.70	0.02	0.02	785	40051		
			11:31:36	34.28	20.01	140.68	0.02	0.02	785	45376		
			11:31:37	34.23	20.01	140.51	0.02	0.02	785	40674		
			11:31:38	34.31	20.01	140.47	0.02	0.02	785	44602		
			11:31:39	34.34	20.01	140.20	0.02	0.02	785	42432		
			11:31:40	34.23	20.01	140.01	0.02	0.02	785	45376		
			11:31:41	34.32	20.01	140.28	0.02	0.02	785	45906		
			11:31:42	34.32	20.01	140.55	0.02	0.02	785	43370		
			11:31:43	34.19	20.01	140.62	0.02	0.02	785	39848		
			11:31:44	34.38	20.01	140.53	0.02	0.02	785	45640		
			11:31:45	33.99	20.01	140.49	0.02	0.02	785	39646		
			11:31:46	34.18	20.01	140.47	0.02	0.02	785	44350		
			11:31:47	34.18	20.01	140.51	0.16	0.16	785	4900		
			11:31:48	34.08	20.01	140.55	0.03	0.03	785	26884		
			11:31:49	33.83	20.01	140.57	0.02	0.02	785	41534		
			11:31:50	34.05	20.01	140.47	0.02	0.02	785	41979		
			11:31:51	34.05	20.01	140.47	0.02	0.02	785	44101		
			11:31:52	33.72	20.01	140.29	0.02	0.02	785	39848		
			11:31:53	33.89	20.01	140.33	0.02	0.02	785	41534		
			11:31:54	34.16	20.01	140.38	0.02	0.02	785	41099		
			11:31:55	33.85	20.01	140.79	0.02	0.02	785	42432		
			11:31:56	33.70	20.01	141.20	0.02	0.02	785	43370		
			11:31:57	34.05	20.01	140.71	0.02	0.02	785	41099		
			11:31:58	34.02	20.01	140.53	0.02	0.02	785	42432		
			11:31:59	33.68	20.01	140.66	0.02	0.02	785	44602		
			11:32:00	33.88	20.01	140.98	0.02	0.02	785	41979		
			11:32:01	34.05	20.01	141.44	0.02	0.02	785	43370		
			11:32:02	33.82	20.01	141.46	0.02	0.02	785	40674		
			11:32:03	33.77	20.01	141.50	0.02	0.02	785	38861		

**TABLE D-25**

Profile PRO-19 on September 22, 2022 (1125-1135 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

243	Instantaneous Minimum Dilution in Profile
532	Minimum Average Dilution in Profile
786	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:32:04	33.93	20.01	141.48	0.02	0.02	785	40674		
			11:32:05	33.90	20.01	141.16	0.02	0.02	785	43855		
			11:32:06	33.91	20.01	140.95	0.02	0.02	785	41534		
			11:32:07	33.88	20.01	140.60	0.02	0.02	785	41979		
			11:32:08	33.86	20.01	140.43	0.02	0.02	785	45376		
			11:32:09	34.05	20.01	140.43	0.02	0.02	785	44602		
			11:32:10	33.93	20.01	140.36	0.02	0.02	785	43855		
			11:32:11	33.72	20.01	140.55	0.02	0.02	785	44350		
			11:32:12	33.93	20.01	140.36	0.02	0.02	785	39447		
			11:32:13	34.02	20.01	140.89	0.02	0.02	785	45115		
			11:32:14	33.64	20.01	141.29	0.02	0.02	785	41534		
			11:32:15	33.65	20.01	141.05	0.02	0.02	785	40674		
			11:32:16	33.93	20.01	140.62	0.02	0.02	785	43370		
			11:32:17	33.68	20.01	140.34	0.02	0.02	785	41755		
			11:32:18	33.53	20.01	140.45	0.02	0.02	785	45640		
			11:32:19	33.98	20.01	140.72	0.02	0.02	785	43370		
			11:32:20	33.84	20.01	140.72	0.02	0.02	785	42896		
			11:32:21	33.58	20.01	140.70	0.02	0.02	785	44350		
			11:32:22	33.76	20.01	140.79	0.02	0.02	785	40256		
			11:32:23	33.92	20.01	140.35	0.02	0.02	785	39646		
			11:32:24	33.85	20.01	140.20	0.02	0.02	785	42896		
			11:32:25	33.60	20.01	140.20	0.02	0.02	785	42432		
			11:32:26	33.82	20.01	140.20	0.02	0.02	785	40674		
			11:32:27	33.91	20.01	140.27	0.02	0.02	785	41534		
			11:32:28	33.75	20.01	140.22	0.02	0.02	785	43855		
			11:32:29	33.82	20.01	140.33	0.02	0.02	785	42896		
			11:32:30	33.91	20.01	140.47	0.02	0.02	785	51307		
			11:32:31	34.00	20.01	140.49	0.02	0.02	785	42432		
			11:32:32	33.80	20.01	140.42	0.02	0.02	785	43370		
			11:32:33	33.92	20.01	140.52	0.02	0.02	785	46176		
			11:32:34	33.98	20.01	140.94	0.02	0.02	785	46176		
			11:32:35	33.90	20.01	141.08	0.02	0.02	785	40674		
			11:32:36	33.84	20.01	141.01	0.02	0.02	785	41534		
			11:32:37	34.00	20.01	141.01	0.02	0.02	785	41534		
			11:32:38	33.99	20.01	140.98	0.02	0.02	785	42896		
			11:32:39	33.99	20.01	140.81	0.02	0.02	785	45640		
			11:32:40	33.99	20.01	141.22	0.02	0.02	785	40464		
			11:32:41	34.09	20.01	141.33	0.02	0.02	785	42432		
			11:32:42	34.12	20.01	141.18	0.02	0.02	785	40051		

**TABLE D-25**

Profile PRO-19 on September 22, 2022 (1125-1135 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

243	Instantaneous Minimum Dilution in Profile
532	Minimum Average Dilution in Profile
786	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:32:43	34.30	20.01	141.20	0.02	0.02	785	43370		
			11:32:44	34.44	20.01	140.98	0.02	0.02	785	41534		
			11:32:45	34.55	20.01	141.05	0.02	0.02	785	42432		
			11:32:46	34.94	20.01	141.03	0.02	0.02	785	39646		
			11:32:47	35.31	20.01	140.89	0.02	0.02	785	41099		
			11:32:48	35.38	20.01	140.38	0.02	0.02	785	42896		
			11:32:49	35.23	20.01	140.24	0.02	0.02	785	41099		
			11:32:50	35.34	20.01	140.30	0.02	0.02	785	43855		
			11:32:51	37.91	20.01	140.29	0.02	0.02	785	42896		
			11:32:52	39.49	20.01	140.41	0.02	0.02	785	44101		
			11:32:53	39.60	20.01	140.14	0.02	0.02	785	41099		
			11:32:54	39.79	20.01	140.22	0.02	0.02	785	46176		
			11:32:55	39.58	20.01	140.31	0.02	0.02	785	39646		
			11:32:56	39.87	20.01	140.58	0.02	0.02	785	45906		
			11:32:57	39.84	20.01	141.01	0.02	0.02	785	39646		
			11:32:58	39.88	20.01	141.01	0.02	0.02	785	46176		
			11:32:59	39.75	20.01	140.97	0.02	0.02	785	40674		
			11:33:00	39.83	20.01	141.12	0.02	0.02	785	43611		
			11:33:01	40.02	20.01	141.08	0.02	0.02	785	43370		
			11:33:02	39.82	20.01	141.03	0.02	0.02	785	43370		
			11:33:03	39.72	20.01	140.94	0.02	0.02	785	40674		
			11:33:04	39.95	20.01	140.77	0.02	0.02	785	45640		
			11:33:05	39.75	20.01	140.95	0.02	0.02	785	40674		
			11:33:06	39.63	20.01	140.81	0.02	0.02	785	44350		
			11:33:07	39.67	20.01	140.66	0.02	0.02	785	40674		
			11:33:08	39.75	20.01	140.68	0.02	0.02	785	44350		
			11:33:09	39.58	20.01	141.05	0.02	0.02	785	43370		
			11:33:10	39.69	20.01	141.20	0.02	0.02	785	43370		
			11:33:11	39.61	20.01	141.16	0.02	0.02	785	44350		
			11:33:12	39.69	20.01	140.83	0.02	0.02	785	41099		
			11:33:13	39.62	20.01	140.64	0.02	0.02	785	42896		
			11:33:14	39.60	20.01	140.81	0.02	0.02	785	39250		
			11:33:15	39.58	20.01	141.03	0.02	0.02	785	42896		
			11:33:16	39.72	20.01	141.16	0.02	0.02	785	44350		
			11:33:17	39.59	20.01	141.18	0.02	0.02	785	45115		
			11:33:18	39.56	20.01	141.18	0.02	0.02	785	38480		
			11:33:19	39.74	20.01	141.16	0.02	0.02	785	42432		
			11:33:20	39.62	20.01	141.00	0.02	0.02	785	41979		
			11:33:21	39.51	20.01	140.74	0.02	0.02	785	44350		

No plume detected at 39-40 ft

**TABLE D-25**

Profile PRO-19 on September 22, 2022 (1125-1135 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

243	Instantaneous Minimum Dilution in Profile
532	Minimum Average Dilution in Profile
786	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:33:22	39.53	20.01	140.57	0.02	0.02	785	41534		
			11:33:23	39.57	20.01	140.74	0.02	0.02	785	41534		
			11:33:24	39.58	20.01	140.96	0.02	0.02	785	43855		
			11:33:25	39.40	20.01	141.06	0.02	0.02	785	44602		
			11:33:26	39.46	20.01	141.07	0.02	0.02	785	37740		
			11:33:27	39.53	20.01	141.06	0.02	0.02	785	44857		
			11:33:28	39.39	20.01	140.68	0.02	0.02	785	43855		
			11:33:29	39.40	20.01	140.62	0.02	0.02	785	46176		
			11:33:30	39.50	20.01	140.81	0.02	0.02	785	41534		
			11:33:31	39.51	20.01	141.10	0.02	0.02	785	37740		
			11:33:32	39.48	20.01	140.79	0.02	0.02	785	45376		
			11:33:33	39.43	20.01	140.81	0.02	0.02	785	41534		
			11:33:34	39.55	20.01	140.93	0.02	0.02	785	43855		
			11:33:35	39.58	20.01	140.91	0.02	0.02	785	40674		
			11:33:36	39.48	20.01	140.87	0.02	0.02	785	43370		
			11:33:37	39.37	20.01	140.93	0.02	0.02	785	39848		
			11:33:38	39.59	20.01	140.93	0.02	0.02	785	41099		
			11:33:39	39.51	20.01	140.92	0.02	0.02	785	44101		
			11:33:40	39.26	20.01	140.93	0.02	0.02	785	45906		
			11:33:41	39.40	20.01	140.83	0.02	0.02	785	46726		
			11:33:42	39.46	20.01	140.66	0.02	0.02	785	39447		
			11:33:43	39.24	20.01	140.38	0.02	0.02	785	43855		
			11:33:44	39.28	20.01	140.37	0.02	0.02	785	47289		
			11:33:45	39.39	20.01	140.36	0.02	0.02	785	45640		
			11:33:46	39.32	20.01	140.26	0.02	0.02	785	42896		
			11:33:47	39.25	20.01	140.22	0.02	0.02	785	42896		
			11:33:48	39.33	20.01	140.07	0.02	0.02	785	39848		
			11:33:49	39.26	20.01	139.72	0.02	0.02	785	41534		
			11:33:50	39.37	20.01	139.59	0.02	0.02	785	39250		
			11:33:51	39.19	20.01	139.53	0.02	0.02	785	45906		
			11:33:52	39.19	20.01	139.59	0.02	0.02	785	42432		
			11:33:53	39.45	20.01	139.68	0.02	0.02	785	41979		
			11:33:54	39.28	20.01	139.69	0.02	0.02	785	40674		
			11:33:55	39.44	20.01	139.90	0.02	0.02	785	43855		
			11:33:56	39.48	20.01	139.90	0.02	0.02	785	40464		
			11:33:57	39.39	20.01	139.84	0.02	0.02	785	42432		
			11:33:58	39.44	20.01	139.65	0.02	0.02	785	44857		
			11:33:59	39.40	20.01	139.74	0.02	0.02	785	43370		
			11:34:00	39.46	20.01	139.76	0.02	0.02	785	40464		

**TABLE D-25**

Profile PRO-19 on September 22, 2022 (1125-1135 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

243	Instantaneous Minimum Dilution in Profile
532	Minimum Average Dilution in Profile
786	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:34:01	39.43	20.01	139.70	0.02	0.02	785	41979		
			11:34:02	39.59	20.01	139.59	0.02	0.02	785	46176		
			11:34:03	40.18	20.01	139.69	0.02	0.02	785	43370		
			11:34:04	43.00	20.01	139.66	0.02	0.02	785	43370		
			11:34:05	44.43	20.01	139.84	0.02	0.02	785	38861		
			11:34:06	44.32	20.01	139.93	0.02	0.02	785	41979		
			11:34:07	44.33	20.01	139.82	0.01	0.01	785	54895		
			11:34:08	44.41	20.01	139.68	0.02	0.02	785	40256		
			11:34:09	44.37	20.01	139.70	0.02	0.02	785	42896		
			11:34:10	44.37	20.01	139.74	0.02	0.02	785	43855		
			11:34:11	44.25	20.01	140.03	0.02	0.02	785	38861		
			11:34:12	44.42	20.01	139.86	0.02	0.02	785	39848		
			11:34:13	44.37	20.01	139.88	0.02	0.02	785	41534		
			11:34:14	44.19	20.01	139.99	0.02	0.02	785	43855		
			11:34:15	44.28	20.01	139.99	0.02	0.02	785	44350		
			11:34:16	44.23	20.01	139.94	0.02	0.02	785	42432		
			11:34:17	44.15	20.01	139.93	0.02	0.02	785	43855		
			11:34:18	44.14	20.01	139.88	0.02	0.02	785	39250		
			11:34:19	44.18	20.01	139.95	0.02	0.02	785	43855		
			11:34:20	44.28	20.01	139.97	0.02	0.02	785	46726		
			11:34:21	44.22	20.01	140.01	0.02	0.02	785	41099		
			11:34:22	44.12	20.01	139.93	0.02	0.02	785	41534		
			11:34:23	44.36	20.01	139.96	0.02	0.02	785	42432		
			11:34:24	44.37	20.01	140.20	0.02	0.02	785	43370		
			11:34:25	44.23	20.01	140.16	0.02	0.02	785	41534		
			11:34:26	44.27	20.01	140.07	0.02	0.02	785	41979		
			11:34:27	44.45	20.01	140.14	0.02	0.02	785	41979		
			11:34:28	44.29	20.01	140.26	0.02	0.02	785	43370		
			11:34:29	44.25	20.01	140.22	0.02	0.02	785	45640		
			11:34:30	44.21	20.01	140.39	0.02	0.02	785	43855		
			11:34:31	44.33	20.01	140.64	0.02	0.02	785	44350		
			11:34:32	44.21	20.01	140.62	0.02	0.02	785	44602		
			11:34:33	44.07	20.01	140.85	0.02	0.02	785	42896		
			11:34:34	44.32	20.01	140.79	0.02	0.02	785	43370		
			11:34:35	44.33	20.01	140.89	0.02	0.02	785	43855		
			11:34:36	44.14	20.01	140.96	0.02	0.02	785	43370		
			11:34:37	44.22	20.01	140.86	0.02	0.02	785	46726		
			11:34:38	44.45	20.01	140.89	0.02	0.02	785	41979		
			11:34:39	44.33	20.01	140.51	0.02	0.02	785	42896		

**TABLE D-25**

Profile PRO-19 on September 22, 2022 (1125-1135 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

243	Instantaneous Minimum Dilution in Profile
532	Minimum Average Dilution in Profile
786	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:34:40	44.25	20.01	140.31	0.02	0.02	785	40256		
			11:34:41	44.41	20.01	140.29	0.02	0.02	785	44857		
			11:34:42	44.53	20.01	140.24	0.02	0.02	785	41979		
			11:34:43	44.31	20.01	140.16	0.02	0.02	785	36682		
			11:34:44	44.41	20.01	140.16	0.02	0.02	785	45115		
			11:34:45	44.42	20.01	140.17	0.02	0.02	785	42896		
			11:34:46	44.46	20.01	140.31	0.02	0.02	785	45115		
			11:34:47	44.33	20.01	140.36	0.02	0.02	785	41979		
			11:34:48	44.41	20.01	140.36	0.02	0.02	785	46176		
			11:34:49	44.64	20.01	140.33	0.02	0.02	785	42896		
			11:34:50	44.63	20.01	140.32	0.02	0.02	785	43370		
			11:34:51	44.66	20.01	140.33	0.02	0.02	785	41534		
			11:34:52	44.95	20.01	140.40	0.02	0.02	785	41099		
			11:34:53	46.94	20.01	140.16	0.02	0.02	785	39250		
			11:34:54	49.53	20.01	140.16	0.02	0.02	785	45115		
			11:34:55	50.19	20.01	140.16	0.02	0.02	785	43855		
			11:34:56	50.47	20.01	140.18	0.02	0.02	785	39447		
			11:34:57	50.45	20.01	140.14	0.02	0.02	785	43370		
			11:34:58	50.49	20.01	140.14	0.02	0.02	785	43370		
			11:34:59	50.52	20.01	140.19	0.02	0.02	785	44602		
			11:35:00	50.54	20.01	140.14	0.02	0.02	785	41099		
			11:35:01	50.72	20.01	140.09	0.02	0.02	785	44350		
			11:35:02	50.61	20.01	140.12	0.02	0.02	785	43855		
			11:35:03	50.57	20.01	140.09	0.02	0.02	785	43370		
			11:35:04	50.60	20.01	140.07	0.02	0.02	785	45640		
			11:35:05	50.62	20.01	140.05	0.02	0.02	785	42896		
			11:35:06	50.53	20.01	140.06	0.02	0.02	785	38861		
			11:35:07	50.64	20.01	140.09	0.02	0.02	785	40674		
			11:35:08	50.61	20.01	140.05	0.02	0.02	785	41979		
			11:35:09	50.66	20.01	140.03	0.02	0.02	785	45115		
			11:35:10	50.61	20.01	140.05	0.02	0.02	785	43855		
			11:35:11	50.69	20.01	140.05	0.02	0.02	785	41979		
			11:35:12	50.71	20.01	140.03	0.02	0.02	785	40464		
			11:35:13	50.69	20.01	140.05	0.02	0.02	785	39646		
			11:35:14	50.69	20.01	140.04	0.02	0.02	785	41099		
			11:35:15	50.71	20.01	140.12	0.02	0.02	785	45906		
			11:35:16	50.23	20.01	140.03	0.02	0.02	785	42896		
			11:35:17	48.97	20.01	140.07	0.02	0.02	785	44350		
			11:35:18	48.87	20.01	140.07	0.02	0.02	785	40674		

**TABLE D-25**

Profile PRO-19 on September 22, 2022 (1125-1135 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

243	Instantaneous Minimum Dilution in Profile
532	Minimum Average Dilution in Profile
786	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:35:19	48.91	20.01	140.12	0.02	0.02	785	42896		
			11:35:20	48.91	20.01	140.20	0.02	0.02	785	41099		
			11:35:21	48.84	20.01	140.25	0.02	0.02	785	44857		
			11:35:22	48.97	20.01	140.24	0.02	0.02	785	42896		
			11:35:23	49.00	20.01	140.24	0.02	0.02	785	42432		
			11:35:24	48.83	20.01	140.12	0.02	0.02	785	44101		
			11:35:25	49.02	20.01	140.01	0.02	0.02	785	41979		
			11:35:26	49.07	20.01	139.95	0.02	0.02	785	44857		
			11:35:27	49.03	20.01	140.01	0.02	0.02	785	41534		
			11:35:28	49.05	20.01	140.00	0.02	0.02	785	41979		
			11:35:29	49.05	20.01	140.01	0.02	0.02	785	41979		
			11:35:30	49.09	20.01	140.03	0.02	0.02	785	41979		
			11:35:31	49.01	20.01	139.97	0.02	0.02	785	41979		
			11:35:32	49.05	20.01	139.95	0.02	0.02	785	41099		
			11:35:33	49.03	20.01	139.93	0.02	0.02	785	47866		
			11:35:34	48.98	20.01	139.93	0.02	0.02	785	40256		
			11:35:35	48.93	20.01	140.14	0.02	0.02	785	42896		
			11:35:36	49.02	20.01	140.14	0.02	0.02	785	43855		
			11:35:37	49.06	20.01	140.09	0.02	0.02	785	42896		
			11:35:38	48.80	20.01	140.12	0.02	0.02	785	41979		
			11:35:39	48.92	20.01	140.16	0.02	0.02	785	42432		
			11:35:40	48.99	20.01	140.18	0.02	0.02	785	42896		
			11:35:41	48.89	20.01	140.07	0.02	0.02	785	43855		
			11:35:42	48.86	20.01	140.09	0.02	0.02	785	43370		
			11:35:43	48.96	20.01	140.25	0.02	0.02	785	46176		
			11:35:44	48.95	20.01	140.39	0.02	0.02	785	41099		
			11:35:45	48.82	20.01	140.62	0.02	0.02	785	40256		
			11:35:46	48.76	20.01	140.87	0.02	0.02	785	44350		
			11:35:47	48.87	20.01	140.60	0.02	0.02	785	44350		
			11:35:48	48.84	20.01	140.57	0.02	0.02	785	43370		
			11:35:49	48.63	20.01	140.55	0.02	0.02	785	41979		
			11:35:50	48.70	20.01	140.55	0.02	0.02	785	40674		
			11:35:51	48.80	20.01	140.53	0.02	0.02	785	37740		
			11:35:52	48.60	20.01	140.47	0.02	0.02	785	45115		
			11:35:53	48.48	20.01	140.47	0.02	0.02	785	46176		
			11:35:54	48.65	20.01	140.45	0.02	0.02	785	41755		



**TABLE D-26**

Profile PRO-20 on September 22, 2022 (1140-1153 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

249	Instantaneous Minimum Dilution in Profile
353	Minimum Average Dilution in Profile
596	Plume Average Dilution Detected
1740	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-20 (North Mixing Zone Boundary - 242 ft from Diffuser near West Edge)	50 ft	0.53 m/sec 353 deg. (mag.) Ebb Tide	11:40:22	2.36	20.00	135.98	0.02	0.02	800	44199	No plume detected near surface	
			11:40:23	2.46	19.97	135.71	0.02	0.02	800	46243		
			11:40:24	2.49	19.98	135.80	0.02	0.02	800	44693		
			11:40:25	2.46	19.99	135.82	0.05	0.05	800	17058		
			11:40:26	2.38	20.00	135.71	0.02	0.02	800	45714		
			11:40:27	2.41	20.00	135.78	0.02	0.02	800	45977		
			11:40:28	2.44	19.99	135.39	0.02	0.02	800	41026		
			11:40:29	2.33	19.96	135.90	0.02	0.02	800	43716		
			11:40:30	2.36	19.97	135.42	0.02	0.02	800	42781		
			11:40:31	2.27	19.96	136.04	0.02	0.02	800	42781		
			11:40:32	2.34	19.99	135.69	0.02	0.02	800	40404		
			11:40:33	2.32	20.00	136.30	0.02	0.02	800	43243		
			11:40:34	2.39	20.00	136.06	0.02	0.02	800	46784		
			11:40:35	2.39	20.01	136.36	0.02	0.02	800	41885		
			11:40:36	2.42	20.01	136.16	0.02	0.02	800	47059		
			11:40:37	2.44	19.99	135.57	0.02	0.02	800	47619		
			11:40:38	2.45	19.85	135.59	0.02	0.02	800	44944		
			11:40:39	2.40	19.77	135.49	0.02	0.02	800	47619		
			11:40:40	2.45	19.75	135.44	0.02	0.02	800	43243		
			11:40:41	2.41	19.68	135.63	0.02	0.02	800	40201		
			11:40:42	2.35	19.64	135.97	0.02	0.02	800	45198		
			11:40:43	2.40	19.62	136.07	0.02	0.02	800	45455		
			11:40:44	2.38	19.62	136.08	0.02	0.02	800	45455		
			11:40:45	2.35	19.69	136.10	0.02	0.02	800	45198		
			11:40:46	2.31	19.73	136.05	0.02	0.02	800	40609		
			11:40:47	2.27	19.78	135.99	2.22	1.61	800	497		
			11:40:48	2.36	19.81	135.95	0.02	0.02	800	42328		
			11:40:49	2.34	19.82	135.88	0.02	0.02	800	40404		
			11:40:50	2.53	19.85	135.80	0.02	0.02	800	40404		
			11:40:51	3.12	19.87	135.82	0.02	0.02	800	41451		
11:40:52	5.55	19.91	136.92	0.02	0.02	800	49383					
11:40:53	7.28	19.97	136.73	0.02	0.02	800	44693					
11:40:54	7.49	19.89	135.99	0.02	0.02	800	44199					
11:40:55	7.58	19.88	135.84	0.02	0.02	800	42328					
11:40:56	7.61	19.89	135.86	0.02	0.02	800	44693					
11:40:57	7.59	19.91	135.93	0.02	0.02	800	45198					
11:40:58	7.66	19.92	136.06	0.02	0.02	800	47059					
11:40:59	7.69	19.93	136.38	0.02	0.02	800	41885					
11:41:00	7.67	19.93	136.62	0.02	0.02	800	42781					

**TABLE D-26**

Profile PRO-20 on September 22, 2022 (1140-1153 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

249	Instantaneous Minimum Dilution in Profile
353	Minimum Average Dilution in Profile
596	Plume Average Dilution Detected
1740	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:41:01	7.59	19.94	136.80	0.02	0.02	800	41237		
			11:41:02	7.61	19.95	137.05	0.02	0.02	800	41237		
			11:41:03	7.63	19.96	137.31	0.02	0.02	800	44693		
			11:41:04	7.60	19.96	137.50	0.02	0.02	800	45455		
			11:41:05	7.62	19.98	137.41	0.02	0.02	800	42328		
			11:41:06	7.78	20.01	137.81	0.02	0.02	800	45455		
			11:41:07	7.63	20.01	137.66	0.02	0.02	800	42781		
			11:41:08	7.65	20.01	137.85	0.02	0.02	800	44199		
			11:41:09	7.72	20.01	137.67	0.02	0.02	800	44693		
			11:41:10	7.66	20.02	137.19	0.02	0.02	800	45198		
			11:41:11	7.63	20.02	137.12	0.02	0.02	800	43716		
			11:41:12	7.67	20.02	137.22	0.02	0.02	800	44693		
			11:41:13	7.73	20.02	137.00	0.02	0.02	800	44693		
			11:41:14	7.76	20.02	136.97	0.02	0.02	800	42328		
			11:41:15	7.70	20.02	137.05	0.02	0.02	800	43243		
			11:41:16	7.76	20.02	137.03	0.02	0.02	800	41451		
			11:41:17	7.78	20.02	136.95	0.02	0.02	800	42781		
			11:41:18	7.78	20.02	137.03	0.02	0.02	800	43243		
			11:41:19	7.77	20.02	137.16	0.02	0.02	800	38835		
			11:41:20	7.75	20.02	137.05	0.02	0.02	800	43243		
			11:41:21	7.72	20.02	137.07	0.02	0.02	800	41451		
			11:41:22	7.68	20.02	137.03	0.02	0.02	800	41451		
			11:41:23	7.61	20.02	137.07	0.02	0.02	800	43243		
			11:41:24	7.71	20.02	137.05	0.02	0.02	800	40404		
			11:41:25	7.76	20.02	136.98	0.02	0.02	800	42781		
			11:41:26	7.60	20.02	137.16	0.02	0.02	800	44199		
			11:41:27	7.75	20.02	137.16	0.02	0.02	800	42328		
			11:41:28	7.85	20.02	137.10	0.02	0.02	800	40609		
			11:41:29	7.74	20.02	137.16	0.02	0.02	800	40000		
			11:41:30	7.78	20.02	136.93	0.02	0.02	800	45455		
			11:41:31	8.02	20.02	136.78	0.02	0.02	800	44693		
			11:41:32	8.11	20.02	136.62	0.02	0.02	800	39604		
			11:41:33	9.09	20.02	136.72	0.02	0.02	800	45198		
			11:41:34	11.90	20.02	136.74	0.02	0.02	800	41451		
			11:41:35	12.71	20.02	136.72	0.02	0.02	800	43716		
			11:41:36	12.98	20.02	136.76	0.02	0.02	800	43243		
			11:41:37	12.93	20.02	136.78	0.02	0.02	800	44944		
			11:41:38	13.05	20.02	136.70	0.02	0.02	800	41451		No plume detected at 12-13 ft
			11:41:39	13.03	20.02	136.66	0.02	0.02	800	41885		

**TABLE D-26**

Profile PRO-20 on September 22, 2022 (1140-1153 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

249	Instantaneous Minimum Dilution in Profile
353	Minimum Average Dilution in Profile
596	Plume Average Dilution Detected
1740	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:41:40	12.96	20.02	136.74	0.02	0.02	800	43716		
			11:41:41	13.01	20.02	136.66	0.02	0.02	800	42328		
			11:41:42	13.00	20.02	136.60	0.02	0.02	800	41885		
			11:41:43	12.99	20.02	136.55	0.02	0.02	800	41451		
			11:41:44	12.96	20.02	136.51	0.02	0.02	800	40609		
			11:41:45	12.89	20.02	136.55	0.02	0.02	800	41885		
			11:41:46	13.00	20.02	136.55	0.02	0.02	800	43243		
			11:41:47	13.02	20.02	136.62	0.02	0.02	800	48193		
			11:41:48	12.99	20.02	136.80	0.02	0.02	800	41026		
			11:41:49	13.04	20.02	136.95	0.02	0.02	800	42781		
			11:41:50	13.20	20.02	136.86	0.02	0.02	800	40816		
			11:41:51	13.02	20.02	137.14	0.02	0.02	800	39216		
			11:41:52	13.04	20.02	137.33	0.02	0.02	800	41451		
			11:41:53	13.07	20.02	137.94	0.02	0.02	800	45455		
			11:41:54	12.96	20.02	138.50	0.02	0.02	800	42328		
			11:41:55	12.93	20.02	138.01	0.09	0.09	800	8547		
			11:41:56	13.01	20.02	137.21	0.02	0.02	800	45198		
			11:41:57	13.02	20.02	138.08	0.02	0.02	800	45977		
			11:41:58	13.02	20.02	138.16	0.02	0.02	800	40816		
			11:41:59	13.58	20.02	137.70	0.02	0.02	800	41885		
			11:42:00	16.00	20.02	137.82	0.08	0.08	800	10485		
			11:42:01	17.48	20.02	137.91	0.02	0.02	800	48193		
			11:42:02	17.94	20.02	138.40	0.02	0.02	800	43716		
			11:42:03	18.17	20.02	138.56	0.03	0.03	800	26578		
			11:42:04	18.22	20.02	138.42	0.08	0.08	800	9445		
			11:42:05	18.22	20.02	138.71	0.02	0.02	800	44199		
			11:42:06	18.26	20.02	138.18	0.02	0.02	800	42328		
			11:42:07	18.21	20.02	137.85	0.02	0.02	800	47619		
			11:42:08	18.06	20.02	137.72	0.02	0.02	800	48780		
			11:42:09	18.03	20.02	137.69	0.02	0.02	800	42781		
			11:42:10	17.91	20.02	137.96	0.02	0.02	800	44199		
			11:42:11	17.84	20.02	138.46	0.02	0.02	800	42328		
			11:42:12	17.71	20.02	138.48	0.02	0.02	800	45714		
			11:42:13	17.74	20.02	138.20	0.02	0.02	800	42781		
			11:42:14	17.75	20.02	138.39	0.02	0.02	800	43716		
			11:42:15	17.71	20.02	138.18	0.02	0.02	800	45198		
			11:42:16	17.79	20.02	139.24	0.02	0.02	800	45977		
			11:42:17	17.84	20.02	138.63	1.69	1.14	800	702		
			11:42:18	17.92	20.02	138.37	0.02	0.02	800	42781		

No plume detected at 17-18 ft

**TABLE D-26**

Profile PRO-20 on September 22, 2022 (1140-1153 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

249	Instantaneous Minimum Dilution in Profile
353	Minimum Average Dilution in Profile
596	Plume Average Dilution Detected
1740	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:42:19	17.97	20.02	137.77	0.02	0.02	800	44693		
			11:42:20	18.08	20.02	137.08	0.02	0.02	800	45455		
			11:42:21	18.16	20.02	137.82	0.02	0.02	800	42781		
			11:42:22	18.18	20.02	138.22	0.02	0.02	800	41885		
			11:42:23	18.15	20.02	138.39	0.02	0.02	800	42105		
			11:42:24	18.18	20.02	137.95	0.02	0.02	800	43716		
			11:42:25	18.15	20.02	136.97	0.02	0.02	800	45714		
			11:42:26	17.99	20.02	137.03	0.02	0.02	800	45198		
			11:42:27	18.04	20.02	136.88	0.02	0.02	800	42328		
			11:42:28	18.03	20.02	137.12	0.02	0.02	800	42328		
			11:42:29	17.95	20.02	137.31	0.02	0.02	800	42781		
			11:42:30	17.84	20.02	137.53	0.02	0.02	800	44199		
			11:42:31	17.99	20.01	139.81	0.02	0.02	800	45455		
			11:42:32	17.92	20.01	141.16	0.02	0.02	800	42781		
			11:42:33	17.88	20.01	140.37	0.02	0.02	800	41885		
			11:42:34	17.79	20.01	140.02	0.02	0.02	800	47059		
			11:42:35	17.88	20.01	140.30	0.02	0.02	800	42781		
			11:42:36	17.81	20.01	139.70	0.02	0.02	800	42328		
			11:42:37	17.71	20.01	140.69	0.02	0.02	800	45977		
			11:42:38	17.87	20.01	139.78	0.02	0.02	800	47059		
			11:42:39	18.64	20.01	138.63	0.02	0.02	800	44199		
			11:42:40	21.63	20.02	137.39	0.02	0.02	800	48193		
			11:42:41	22.85	20.02	137.47	0.02	0.02	800	44693		
			11:42:42	23.25	20.02	138.28	0.02	0.02	800	40201		
			11:42:43	23.31	20.02	138.77	0.02	0.02	800	45455		
			11:42:44	23.25	20.02	138.32	0.02	0.02	800	47059		
			11:42:45	23.25	20.02	137.41	0.02	0.02	800	45977		
			11:42:46	23.40	20.02	137.14	0.02	0.02	800	40201		
			11:42:47	23.34	20.02	138.64	0.02	0.02	800	43243		
			11:42:48	23.17	20.01	139.58	0.02	0.02	800	41885		
			11:42:49	23.32	20.01	139.38	0.02	0.02	800	47619		
			11:42:50	23.37	20.01	137.55	0.02	0.02	800	41885		
			11:42:51	23.19	20.02	136.43	0.02	0.02	800	44444		
			11:42:52	23.22	20.02	136.34	0.02	0.02	800	42781		
			11:42:53	23.31	20.02	136.69	0.02	0.02	800	42781		
			11:42:54	23.31	20.02	138.66	0.02	0.02	800	47059		
			11:42:55	23.23	20.01	139.06	0.02	0.02	800	41885		
			11:42:56	23.34	20.01	139.23	0.02	0.02	800	42781		
			11:42:57	23.38	20.01	138.98	0.02	0.02	800	42781		

No plume detected at 23 ft

**TABLE D-26**

Profile PRO-20 on September 22, 2022 (1140-1153 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

249	Instantaneous Minimum Dilution in Profile
353	Minimum Average Dilution in Profile
596	Plume Average Dilution Detected
1740	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			11:42:58	23.46	20.02	138.80	0.02	0.02	800	45977		
			11:42:59	23.29	20.02	138.56	0.02	0.02	800	48193		
			11:43:00	23.37	20.02	138.58	0.02	0.02	800	40816		
			11:43:01	23.51	20.01	138.77	0.02	0.02	800	44199		
			11:43:02	23.33	20.01	138.42	0.02	0.02	800	46784		
			11:43:03	23.34	20.02	138.30	0.02	0.02	800	47619		
			11:43:04	23.43	20.02	138.01	0.02	0.02	800	44199		
			11:43:05	23.47	20.01	138.91	0.02	0.02	800	46784		
			11:43:06	23.41	20.01	140.60	0.02	0.02	800	38835		
			11:43:07	23.45	20.01	141.01	0.02	0.02	800	42781		
			11:43:08	23.53	20.01	140.97	0.02	0.02	800	41237		
			11:43:09	23.46	20.01	141.10	0.02	0.02	800	43243		
			11:43:10	23.40	20.01	141.20	0.02	0.02	800	43716		
			11:43:11	23.45	20.01	141.27	0.02	0.02	800	45198		
			11:43:12	23.53	20.01	141.05	0.02	0.02	800	42781		
			11:43:13	24.63	20.01	141.35	0.02	0.02	800	44199		
			11:43:14	27.62	20.01	141.64	0.02	0.02	800	41885		
			11:43:15	28.61	20.01	141.80	0.02	0.02	800	42781		
			11:43:16	28.83	20.01	141.65	0.02	0.02	800	41451		
			11:43:17	28.74	20.01	141.58	0.02	0.02	800	44693		
			11:43:18	28.74	20.01	141.33	0.02	0.02	800	48780		
			11:43:19	28.79	20.01	140.46	0.02	0.02	800	42328		
			11:43:20	28.74	20.01	139.76	0.02	0.02	800	42328		No plume detected at 28-29 ft
			11:43:21	28.61	20.01	139.26	0.02	0.02	800	44693		
			11:43:22	28.62	20.01	139.44	0.02	0.02	800	45455		
			11:43:23	28.72	20.01	139.90	0.02	0.02	800	50000		
			11:43:24	28.56	20.01	140.07	0.02	0.02	800	45198		
			11:43:25	28.41	20.01	140.94	0.02	0.02	800	40201		
			11:43:26	28.47	20.01	140.85	0.02	0.02	800	48780		
			11:43:27	28.32	20.01	140.62	0.02	0.02	800	44693		
			11:43:28	28.31	20.01	140.05	0.02	0.02	800	42328		
			11:43:29	28.32	20.01	139.48	0.02	0.02	800	41451		
			11:43:30	28.22	20.01	139.30	0.02	0.02	800	45455		
			11:43:31	28.23	20.01	139.36	0.02	0.02	800	42781		
			11:43:32	28.17	20.01	139.59	0.02	0.02	800	40000		
			11:43:33	28.22	20.01	140.28	0.02	0.02	800	44693		
			11:43:34	28.32	20.01	141.33	0.02	0.02	800	45977		
			11:43:35	28.27	20.01	141.48	0.02	0.02	800	46512		
			11:43:36	28.26	20.01	141.56	0.02	0.02	800	44199		

**TABLE D-26**

Profile PRO-20 on September 22, 2022 (1140-1153 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

249	Instantaneous Minimum Dilution in Profile
353	Minimum Average Dilution in Profile
596	Plume Average Dilution Detected
1740	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:43:37	28.36	20.01	141.18	0.02	0.02	800	42328		
			11:43:38	28.29	20.01	140.77	0.02	0.02	800	46512		
			11:43:39	28.23	20.01	140.63	0.02	0.02	800	45198		
			11:43:40	28.33	20.01	140.49	0.02	0.02	800	41451		
			11:43:41	28.39	20.01	140.42	0.02	0.02	800	41451		
			11:43:42	28.42	20.01	140.33	0.02	0.02	800	49383		
			11:43:43	28.87	20.01	140.38	0.02	0.02	800	42328		
			11:43:44	31.32	20.01	140.14	0.02	0.02	800	45198		
			11:43:45	32.99	20.01	139.82	0.02	0.02	800	43243		
			11:43:46	33.12	20.01	139.82	0.02	0.02	800	41237		
			11:43:47	33.33	20.01	139.71	0.02	0.02	800	42328		
			11:43:48	33.24	20.02	139.53	0.02	0.02	800	45198		
			11:43:49	33.31	20.02	139.62	0.35	0.35	800	2317	2721	Plume traces detected at 33 ft
			11:43:50	33.25	20.02	139.62	0.26	0.26	800	3125		
			11:43:51	33.38	20.02	139.47	0.08	0.08	800	10283		
			11:43:52	33.32	20.02	139.51	0.40	0.40	800	1992	4264	Plume traces detected at 33 ft
			11:43:53	33.42	20.02	139.53	0.12	0.12	800	6536		
			11:43:54	33.35	20.02	139.47	0.02	0.02	800	46784		
			11:43:55	33.41	20.02	139.34	0.06	0.06	800	13400		
			11:43:56	33.47	20.02	139.28	0.09	0.09	800	8457	7353	Plume traces detected at 33 ft
			11:43:57	33.49	20.02	139.42	0.13	0.13	800	6250		
			11:43:58	33.41	20.02	139.53	0.02	0.02	800	41451		
			11:43:59	33.45	20.01	139.49	0.02	0.02	800	44693		
			11:44:00	33.47	20.01	139.40	0.02	0.02	800	43243		
			11:44:01	33.45	20.02	139.73	0.02	0.02	800	42781		
			11:44:02	33.36	20.02	139.72	0.02	0.02	800	41451		
			11:44:03	33.53	20.02	139.55	0.02	0.02	800	41885		
			11:44:04	33.54	20.02	139.51	0.02	0.02	800	47619		
			11:44:05	33.31	20.01	139.40	0.02	0.02	800	45977		
			11:44:06	33.42	20.02	139.72	0.02	0.02	800	41451		
			11:44:07	33.45	20.02	139.84	0.02	0.02	800	43243		
			11:44:08	33.35	20.02	139.98	0.02	0.02	800	44199		
			11:44:09	33.33	20.02	139.95	0.02	0.02	800	44693		
			11:44:10	33.41	20.02	139.95	0.02	0.02	800	38835		
			11:44:11	33.36	20.02	139.80	0.02	0.02	800	45198		
			11:44:12	33.21	20.02	139.68	0.02	0.02	800	42781		
			11:44:13	33.17	20.02	139.78	0.02	0.02	800	42781		
			11:44:14	33.21	20.02	140.01	0.02	0.02	800	44199		
			11:44:15	33.22	20.02	140.12	0.02	0.02	800	48193		

**TABLE D-26**

Profile PRO-20 on September 22, 2022 (1140-1153 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

249	Instantaneous Minimum Dilution in Profile
353	Minimum Average Dilution in Profile
596	Plume Average Dilution Detected
1740	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:44:16	33.14	20.02	140.21	0.11	0.11	800	7387		
			11:44:17	33.29	20.02	140.29	1.16	0.66	800	1209		
			11:44:18	33.30	20.02	140.38	1.48	0.95	800	846	2028	Plume traces detected at 33 ft
			11:44:19	33.26	20.02	140.18	0.81	0.35	800	2294		
			11:44:20	33.43	20.02	139.83	0.69	0.24	800	3362		
			11:44:21	33.42	20.02	139.59	0.93	0.46	800	1751		
			11:44:22	33.39	20.02	139.83	0.75	0.30	800	2707		
			11:44:23	33.38	20.02	140.29	0.64	0.20	800	4038		
			11:44:24	33.38	20.02	140.64	0.92	0.45	800	1789		
			11:44:25	33.34	20.02	140.64	1.18	0.68	800	1178	1343	Plume traces detected at 33 ft
			11:44:26	33.29	20.02	140.55	1.26	0.75	800	1062		
			11:44:27	33.26	20.02	140.36	0.61	0.17	800	4824		
			11:44:28	33.30	20.02	140.16	0.54	0.10	800	7832		
			11:44:29	33.41	20.02	140.20	1.25	0.75	800	1072		
			11:44:30	33.32	20.02	140.38	1.05	0.56	800	1421	1249	Plume traces detected at 33 ft
			11:44:31	33.47	20.02	140.40	1.13	0.64	800	1253		
			11:44:32	33.52	20.02	140.33	0.45	0.02	800	34370		
			11:44:33	33.41	20.02	140.41	0.20	0.20	800	4002		
			11:44:34	33.55	20.02	141.11	0.02	0.02	800	47619		
			11:44:35	33.52	20.02	141.50	0.02	0.02	800	47619		
			11:44:36	33.46	20.01	141.56	0.02	0.02	800	47619		
			11:44:37	33.46	20.01	141.47	0.02	0.02	800	42328		
			11:44:38	33.44	20.01	141.54	0.02	0.02	800	50000		
			11:44:39	33.49	20.01	141.78	0.02	0.02	800	46784		
			11:44:40	33.33	20.01	141.65	0.02	0.02	800	41885		
			11:44:41	33.28	20.01	141.78	0.03	0.03	800	25000		
			11:44:42	33.23	20.01	141.62	0.05	0.05	800	16771		
			11:44:43	32.99	20.02	141.58	0.02	0.02	800	40816		
			11:44:44	32.89	20.02	141.66	0.46	0.03	800	25445		
			11:44:45	33.08	20.02	141.20	0.35	0.35	800	2279		
			11:44:46	33.00	20.02	140.98	0.56	0.12	800	6413		
			11:44:47	32.93	20.02	141.01	0.90	0.43	800	1858		
			11:44:48	33.24	20.02	141.01	0.97	0.49	800	1626		
			11:44:49	33.45	20.02	140.91	0.73	0.28	800	2874	2192	Plume traces detected at 33 ft
			11:44:50	33.39	20.02	140.79	0.85	0.39	800	2075		
			11:44:51	33.57	20.02	140.77	0.51	0.08	800	9740		
			11:44:52	33.81	20.02	140.98	0.91	0.44	800	1830	1700	Plume traces detected at 33 ft
			11:44:53	33.53	20.02	141.14	0.99	0.51	800	1571		
			11:44:54	33.53	20.02	141.27	0.52	0.09	800	8877		

**TABLE D-26**

Profile PRO-20 on September 22, 2022 (1140-1153 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

249	Instantaneous Minimum Dilution in Profile
353	Minimum Average Dilution in Profile
596	Plume Average Dilution Detected
1740	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:44:55	33.46	20.02	141.33	0.07	0.07	800	11429		
			11:44:56	33.46	20.02	141.58	0.02	0.02	800	45198		
			11:44:57	33.18	20.01	141.67	0.02	0.02	800	42328		
			11:44:58	33.12	20.01	141.70	0.02	0.02	800	40000		
			11:44:59	33.22	20.01	141.71	0.02	0.02	800	43716		
			11:45:00	33.18	20.01	141.41	0.02	0.02	800	44944		
			11:45:01	33.05	20.02	141.18	0.02	0.02	800	46243		
			11:45:02	33.21	20.02	141.06	0.36	0.36	800	2222		
			11:45:03	33.24	20.02	140.87	0.48	0.05	800	15770		
			11:45:04	33.16	20.02	140.83	0.19	0.19	800	4296		
			11:45:05	33.17	20.02	140.93	0.49	0.06	800	13751		
			11:45:06	33.30	20.02	141.53	0.02	0.02	800	42781		
			11:45:07	33.33	20.01	141.65	0.02	0.02	800	42781		
			11:45:08	33.27	20.01	141.48	0.02	0.02	800	44199		
			11:45:09	33.29	20.02	141.23	0.02	0.02	800	33755		
			11:45:10	33.44	20.02	140.93	0.16	0.16	800	4929		
			11:45:11	33.31	20.02	141.54	0.02	0.02	800	47619		
			11:45:12	33.14	20.01	141.82	0.02	0.02	800	43243		
			11:45:13	33.34	20.01	141.88	0.02	0.02	800	44693		
			11:45:14	33.46	20.01	141.78	0.02	0.02	800	45198		
			11:45:15	33.38	20.01	141.65	0.02	0.02	800	43243		
			11:45:16	33.47	20.01	141.60	0.02	0.02	800	45455		
			11:45:17	33.45	20.01	141.44	0.02	0.02	800	46243		
			11:45:18	33.39	20.01	141.22	0.02	0.02	800	43243		
			11:45:19	33.21	20.01	141.48	0.02	0.02	800	49383		
			11:45:20	33.22	20.01	141.77	0.02	0.02	800	47059		
			11:45:21	33.31	20.01	142.11	0.02	0.02	800	41451		
			11:45:22	33.30	20.01	142.17	0.02	0.02	800	43716		
			11:45:23	33.19	20.01	142.23	0.02	0.02	800	46512		
			11:45:24	33.38	20.01	142.30	0.02	0.02	800	45455		
			11:45:25	34.74	20.01	142.25	0.02	0.02	800	45977		
			11:45:26	37.27	20.01	142.49	0.02	0.02	800	40816		
			11:45:27	37.89	20.02	142.40	0.02	0.02	800	42328		
			11:45:28	38.03	20.01	142.13	0.02	0.02	800	45198		
			11:45:29	38.04	20.01	141.96	0.02	0.02	800	43716		
			11:45:30	38.04	20.01	142.06	0.02	0.02	800	41451		
			11:45:31	38.02	20.01	142.15	0.02	0.02	800	43716		
			11:45:32	37.97	20.01	142.08	0.02	0.02	800	39604		
			11:45:33	37.95	20.01	142.13	0.02	0.02	800	42781		



**TABLE D-26**

Profile PRO-20 on September 22, 2022 (1140-1153 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

249	Instantaneous Minimum Dilution in Profile
353	Minimum Average Dilution in Profile
596	Plume Average Dilution Detected
1740	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:45:34	37.92	20.01	142.37	0.02	0.02	800	44693		
			11:45:35	37.87	20.01	142.61	0.02	0.02	800	47059		
			11:45:36	37.93	20.01	142.61	0.02	0.02	800	45977		
			11:45:37	37.75	20.01	142.57	0.02	0.02	800	45977		
			11:45:38	37.54	20.01	142.48	0.02	0.02	800	41885		
			11:45:39	37.54	20.01	142.49	0.02	0.02	800	43243		
			11:45:40	37.43	20.01	142.28	0.02	0.02	800	43716		
			11:45:41	37.40	20.01	141.92	0.02	0.02	800	45455		
			11:45:42	37.35	20.01	141.89	0.02	0.02	800	41237		
			11:45:43	37.41	20.01	142.02	0.02	0.02	800	43243		
			11:45:44	37.22	20.01	142.23	0.02	0.02	800	47059		
			11:45:45	37.16	20.01	142.08	0.02	0.02	800	41885		
			11:45:46	37.12	20.01	142.15	0.02	0.02	800	47619		
			11:45:47	37.00	20.01	142.30	0.02	0.02	800	46784		
			11:45:48	36.86	20.01	142.30	0.02	0.02	800	41885		
			11:45:49	36.92	20.01	142.25	0.05	0.05	800	16985		
			11:45:50	37.02	20.01	142.21	0.02	0.02	800	41026		
			11:45:51	37.09	20.01	141.66	0.02	0.02	800	46784		
			11:45:52	37.20	20.01	141.39	0.02	0.02	800	45977		
			11:45:53	37.21	20.01	141.31	0.02	0.02	800	45455		
			11:45:54	37.08	20.01	141.78	0.02	0.02	800	42328		
			11:45:55	37.00	20.01	142.06	0.02	0.02	800	45977		
			11:45:56	37.01	20.01	142.42	0.02	0.02	800	40609		
			11:45:57	36.93	20.01	142.11	0.02	0.02	800	47619		
			11:45:58	36.89	20.01	141.58	0.02	0.02	800	41451		
			11:45:59	36.79	20.01	141.63	0.02	0.02	800	44693		
			11:46:00	36.74	20.01	141.69	0.02	0.02	800	43716		
			11:46:01	36.84	20.01	141.69	0.02	0.02	800	43243		
			11:46:02	36.86	20.01	141.79	0.02	0.02	800	43716		
			11:46:03	36.80	20.01	142.23	0.02	0.02	800	45198		
			11:46:04	36.86	20.01	142.06	0.02	0.02	800	42328		
			11:46:05	36.92	20.01	142.13	0.02	0.02	800	42781		
			11:46:06	36.99	20.01	142.13	0.02	0.02	800	42781		
			11:46:07	37.11	20.01	142.54	0.02	0.02	800	42781		
			11:46:08	37.19	20.01	143.12	0.02	0.02	800	43243		
			11:46:09	37.30	20.01	142.92	0.02	0.02	800	43243		
			11:46:10	37.41	20.01	142.70	0.02	0.02	800	44199		
			11:46:11	37.28	20.01	141.98	0.02	0.02	800	42781		
			11:46:12	37.35	20.01	142.03	0.02	0.02	800	44693		

**TABLE D-26**

Profile PRO-20 on September 22, 2022 (1140-1153 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

249	Instantaneous Minimum Dilution in Profile
353	Minimum Average Dilution in Profile
596	Plume Average Dilution Detected
1740	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:46:13	37.32	20.01	142.49	0.02	0.02	800	44199		Plume traces detected at 37 ft
			11:46:14	37.33	20.02	142.50	0.54	0.10	800	7764		
			11:46:15	37.31	20.02	142.55	1.18	0.68	800	1184	1261	
			11:46:16	37.45	20.02	142.67	1.09	0.60	800	1339		
			11:46:17	37.60	20.02	142.25	0.07	0.07	800	10782		
			11:46:18	37.60	20.01	141.64	0.02	0.02	800	45977		
			11:46:19	37.75	20.01	141.58	0.02	0.02	800	46512		
			11:46:20	37.72	20.01	141.65	0.02	0.02	800	44693		
			11:46:21	37.59	20.01	141.60	0.02	0.02	800	44199		
			11:46:22	37.49	20.01	141.56	0.02	0.02	800	44199		
			11:46:23	37.52	20.01	141.60	0.02	0.02	800	39604		
			11:46:24	37.48	20.01	141.68	0.02	0.02	800	45714		
			11:46:25	37.61	20.01	141.96	0.10	0.10	800	8342		
			11:46:26	37.65	20.02	141.78	0.25	0.25	800	3156	3253	Plume traces detected at 37 ft
			11:46:27	37.84	20.02	141.67	0.24	0.24	800	3350		
			11:46:28	38.14	20.02	141.68	0.17	0.17	800	4717		
			11:46:29	38.02	20.02	141.67	0.36	0.36	800	2251	2057	Plume traces detected at 38 ft
			11:46:30	38.20	20.02	141.84	0.39	0.39	800	2070		
			11:46:31	38.20	20.02	142.00	0.41	0.41	800	1943		
			11:46:32	38.23	20.02	142.25	0.38	0.38	800	2108		
			11:46:33	38.04	20.02	142.25	0.89	0.42	800	1912		
			11:46:34	38.22	20.02	142.28	0.04	0.04	800	20833		
			11:46:35	38.15	20.02	142.30	0.08	0.08	800	10485		
			11:46:36	38.04	20.02	142.23	1.00	0.51	800	1554		
			11:46:37	37.96	20.02	142.18	1.35	0.84	800	957	875	Plume traces detected at 38 ft
			11:46:38	38.14	20.02	142.52	2.93	2.25	800	355		
			11:46:39	38.01	20.02	142.52	1.83	1.26	800	634		
			11:46:40	37.82	20.02	142.25	0.19	0.19	800	4237		
			11:46:41	38.04	20.01	142.17	0.02	0.02	800	42781		
			11:46:42	38.02	20.01	142.13	0.02	0.02	800	46784		
			11:46:43	37.82	20.01	142.17	0.05	0.05	800	15296		
			11:46:44	37.78	20.01	142.12	0.02	0.02	800	48193		
			11:46:45	37.75	20.01	142.32	0.23	0.23	800	3438	3605	Plume traces detected at 37 ft
			11:46:46	37.68	20.02	142.23	0.21	0.21	800	3772		
			11:46:47	37.48	20.01	141.98	0.02	0.02	800	43716		
			11:46:48	37.47	20.01	142.04	0.02	0.02	800	40201		
			11:46:49	37.44	20.01	142.02	0.02	0.02	800	41885		
			11:46:50	37.34	20.01	142.15	0.02	0.02	800	48780		
			11:46:51	37.15	20.01	142.20	0.02	0.02	800	45198		

**TABLE D-26**

Profile PRO-20 on September 22, 2022 (1140-1153 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

249	Instantaneous Minimum Dilution in Profile
353	Minimum Average Dilution in Profile
596	Plume Average Dilution Detected
1740	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:46:52	37.14	20.01	142.68	0.02	0.02	800	43716		
			11:46:53	37.03	20.01	143.29	0.02	0.02	800	42781		
			11:46:54	37.05	20.01	142.76	0.02	0.02	800	44444		
			11:46:55	37.08	20.01	142.95	0.02	0.02	800	40609		
			11:46:56	37.13	20.01	143.01	0.02	0.02	800	43243		
			11:46:57	37.21	20.01	142.95	0.07	0.07	800	12066		
			11:46:58	36.94	20.01	142.64	0.02	0.02	800	48780		
			11:46:59	36.94	20.01	142.42	0.02	0.02	800	47619		
			11:47:00	36.91	20.01	142.61	0.02	0.02	800	42328		
			11:47:01	36.80	20.01	142.59	0.02	0.02	800	42781		
			11:47:02	36.71	20.01	142.50	0.02	0.02	800	44199		
			11:47:03	36.72	20.01	142.40	0.02	0.02	800	44693		
			11:47:04	36.73	20.01	142.42	0.02	0.02	800	47619		
			11:47:05	36.74	20.01	142.50	0.02	0.02	800	43243		
			11:47:06	36.71	20.02	142.56	0.06	0.06	800	13986		
			11:47:07	36.81	20.02	142.50	0.09	0.09	800	8772		
			11:47:08	36.82	20.02	142.50	0.14	0.14	800	5670		
			11:47:09	36.81	20.02	142.63	0.27	0.27	800	2917		
			11:47:10	37.01	20.02	142.63	0.50	0.07	800	12174		
			11:47:11	37.00	20.02	142.69	0.55	0.12	800	6846		
			11:47:12	37.10	20.02	142.56	0.21	0.21	800	3891	2967	Plume traces detected at 38 ft
			11:47:13	37.08	20.02	142.67	0.66	0.22	800	3707		
			11:47:14	37.14	20.02	142.66	1.67	1.12	800	712		
			11:47:15	37.25	20.02	141.94	0.67	0.22	800	3557		
			11:47:16	37.21	20.01	141.89	0.02	0.02	800	45455		
			11:47:17	37.27	20.01	141.86	0.02	0.02	800	42781		
			11:47:18	37.28	20.01	141.67	0.02	0.02	800	44944		
			11:47:19	37.27	20.01	142.11	0.12	0.12	800	6574		
			11:47:20	37.27	20.02	142.48	0.46	0.03	800	25445		
			11:47:21	37.19	20.02	142.34	0.02	0.02	800	45455		
			11:47:22	37.22	20.01	142.17	0.02	0.02	800	41885		
			11:47:23	37.17	20.01	142.30	0.02	0.02	800	46243		
			11:47:24	37.25	20.02	142.46	0.32	0.32	800	2499		
			11:47:25	37.27	20.02	142.73	1.12	0.62	800	1281		
			11:47:26	37.21	20.02	142.76	1.26	0.75	800	1062	1099	Plume traces detected at 38 ft
			11:47:27	37.25	20.02	142.73	1.07	0.58	800	1372		
			11:47:28	37.28	20.02	142.76	1.73	1.17	800	682		
			11:47:29	37.33	20.02	142.44	0.84	0.37	800	2139		
			11:47:30	37.31	20.02	142.11	0.08	0.08	800	9828		

**TABLE D-26**

Profile PRO-20 on September 22, 2022 (1140-1153 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

249	Instantaneous Minimum Dilution in Profile
353	Minimum Average Dilution in Profile
596	Plume Average Dilution Detected
1740	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:47:31	37.37	20.02	141.90	0.02	0.02	800	42781		
			11:47:32	37.32	20.02	141.69	0.02	0.02	800	43243		
			11:47:33	37.14	20.01	141.46	0.02	0.02	800	42781		
			11:47:34	37.10	20.01	141.34	0.02	0.02	800	45714		
			11:47:35	37.09	20.01	141.50	0.02	0.02	800	45198		
			11:47:36	36.96	20.01	141.94	0.02	0.02	800	42781		
			11:47:37	36.89	20.01	141.75	0.02	0.02	800	42781		
			11:47:38	37.01	20.01	141.15	0.02	0.02	800	41026		
			11:47:39	36.96	20.01	140.87	0.02	0.02	800	44199		
			11:47:40	36.88	20.01	140.61	0.02	0.02	800	41237		
			11:47:41	37.09	20.01	139.96	0.02	0.02	800	48193		
			11:47:42	37.05	20.01	139.45	0.02	0.02	800	43243		
			11:47:43	37.16	20.02	139.13	0.02	0.02	800	41026		
			11:47:44	38.51	20.02	139.56	0.02	0.02	800	42781		
			11:47:45	39.73	20.02	139.69	0.02	0.02	800	47059		
			11:47:46	39.81	20.02	139.32	0.02	0.02	800	43716		
			11:47:47	40.45	20.02	139.52	0.02	0.02	800	40609		
			11:47:48	40.39	20.02	139.40	0.02	0.02	800	50633		
			11:47:49	40.45	20.02	139.66	0.02	0.02	800	44944		
			11:47:50	40.29	20.02	139.32	0.03	0.03	800	25237		
			11:47:51	40.35	20.02	139.51	0.02	0.02	800	43716		
			11:47:52	40.30	20.02	139.86	0.02	0.02	800	43243		
			11:47:53	40.15	20.02	140.44	0.02	0.02	800	42781		
			11:47:54	40.17	20.02	140.87	0.02	0.02	800	44693		
			11:47:55	40.28	20.01	140.88	0.02	0.02	800	45198		
			11:47:56	40.27	20.02	140.43	0.02	0.02	800	43243		
			11:47:57	40.28	20.02	140.70	0.02	0.02	800	42781		
			11:47:58	40.26	20.01	142.22	0.02	0.02	800	48193		
			11:47:59	40.25	20.01	142.54	0.02	0.02	800	45977		
			11:48:00	40.28	20.01	142.53	0.02	0.02	800	47059		
			11:48:01	40.17	20.01	142.44	0.02	0.02	800	43243		
			11:48:02	40.21	20.01	142.17	0.09	0.09	800	9153		
			11:48:03	40.23	20.02	142.21	1.64	1.09	800	731		
			11:48:04	40.08	20.03	142.25	3.11	2.42	800	331	619	Plume traces detected at 40 ft
			11:48:05	39.95	20.02	141.72	1.54	1.01	800	795		
			11:48:06	40.03	20.02	141.68	0.02	0.02	800	41451		
			11:48:07	39.96	20.01	142.17	0.02	0.02	800	46784		
			11:48:08	39.90	20.01	142.15	0.02	0.02	800	41885		
			11:48:09	39.97	20.01	142.28	0.02	0.02	800	47619		

**TABLE D-26**

Profile PRO-20 on September 22, 2022 (1140-1153 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

249	Instantaneous Minimum Dilution in Profile
353	Minimum Average Dilution in Profile
596	Plume Average Dilution Detected
1740	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:48:10	39.99	20.01	142.22	0.02	0.02	800	44199		Plume traces detected at 40 ft
			11:48:11	39.93	20.01	142.00	0.59	0.15	800	5393		
			11:48:12	40.03	20.02	141.96	0.12	0.12	800	6410		
			11:48:13	40.20	20.02	141.96	0.08	0.08	800	10178		
			11:48:14	40.19	20.02	141.72	0.09	0.09	800	8724		
			11:48:15	40.26	20.02	141.96	1.59	1.05	800	762		
			11:48:16	40.26	20.02	142.19	2.94	2.26	800	354	759	
			11:48:17	40.33	20.02	141.82	1.19	0.69	800	1162		
			11:48:18	40.28	20.02	141.65	0.02	0.02	800	43243		
			11:48:19	40.28	20.02	141.69	0.02	0.02	800	43243		
			11:48:20	40.36	20.02	141.60	0.02	0.02	800	44199		
			11:48:21	40.19	20.02	141.63	0.04	0.04	800	22792		
			11:48:22	40.19	20.02	141.58	0.02	0.02	800	45198		
			11:48:23	40.10	20.02	141.46	0.22	0.22	800	3573		
			11:48:24	40.19	20.02	141.61	0.15	0.15	800	5330		
			11:48:25	40.19	20.01	141.48	0.02	0.02	800	41451		
			11:48:26	40.25	20.01	141.39	0.02	0.02	800	44199		
			11:48:27	40.45	20.01	141.50	0.02	0.02	800	45198		
			11:48:28	40.53	20.02	141.31	0.03	0.03	800	24390		
			11:48:29	40.45	20.02	141.54	0.02	0.02	800	40609		
			11:48:30	40.42	20.02	141.54	0.02	0.02	800	45455		
			11:48:31	40.48	20.02	141.80	0.02	0.02	800	46784		
			11:48:32	40.42	20.02	141.82	0.02	0.02	800	44199		
			11:48:33	40.32	20.02	141.72	0.02	0.02	800	45198		
			11:48:34	40.48	20.02	141.44	0.51	0.08	800	9969		
			11:48:35	40.57	20.01	141.37	0.02	0.02	800	39604		
			11:48:36	40.56	20.01	141.46	0.02	0.02	800	45198		
			11:48:37	40.55	20.02	141.76	0.32	0.32	800	2474		
			11:48:38	40.64	20.02	141.63	0.55	0.11	800	7142		
			11:48:39	40.37	20.02	141.41	0.02	0.02	800	44693		
			11:48:40	40.20	20.02	141.60	0.02	0.02	800	43243		
			11:48:41	40.09	20.02	141.50	0.02	0.02	800	46784		
			11:48:42	40.21	20.02	141.68	0.02	0.02	800	47619		
			11:48:43	40.09	20.01	141.94	0.10	0.10	800	7685		
			11:48:44	40.15	20.02	142.40	0.84	0.38	800	2117		
			11:48:45	40.42	20.02	142.92	3.01	2.32	800	345		
			11:48:46	40.44	20.02	143.03	2.51	1.87	800	428	353	
			11:48:47	40.49	20.02	143.33	3.53	2.79	800	287	Plume detected at 40 ft	
			11:48:48	40.69	20.02	143.16	0.63	0.18	800	4357		

**TABLE D-26**

Profile PRO-20 on September 22, 2022 (1140-1153 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

249	Instantaneous Minimum Dilution in Profile
353	Minimum Average Dilution in Profile
596	Plume Average Dilution Detected
1740	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:48:49	40.66	20.01	143.01	0.02	0.02	800	46784		
			11:48:50	40.63	20.01	143.01	0.02	0.02	800	42781		
			11:48:51	40.53	20.01	142.90	0.02	0.02	800	44199		
			11:48:52	40.53	20.01	142.73	0.02	0.02	800	34335		
			11:48:53	40.46	20.01	142.50	0.02	0.02	800	39216		
			11:48:54	40.42	20.01	142.36	0.02	0.02	800	42328		
			11:48:55	40.35	20.01	142.23	0.02	0.02	800	44693		
			11:48:56	40.50	20.01	142.33	0.02	0.02	800	41451		
			11:48:57	40.53	20.01	142.69	0.02	0.02	800	41237		
			11:48:58	40.48	20.01	142.80	0.02	0.02	800	41451		
			11:48:59	40.39	20.01	142.83	0.02	0.02	800	44693		
			11:49:00	40.42	20.01	142.78	0.02	0.02	800	42328		
			11:49:01	40.27	20.01	142.63	0.02	0.02	800	43716		
			11:49:02	40.03	20.01	142.61	0.02	0.02	800	50000		
			11:49:03	40.01	20.01	142.69	0.02	0.02	800	41026		
			11:49:04	40.05	20.01	142.71	0.02	0.02	800	42781		
			11:49:05	40.03	20.01	142.69	0.02	0.02	800	47059		
			11:49:06	40.04	20.01	142.59	0.02	0.02	800	44693		
			11:49:07	40.13	20.01	142.54	0.02	0.02	800	42781		
			11:49:08	40.19	20.01	142.80	0.02	0.02	800	43716		
			11:49:09	40.17	20.01	142.92	0.02	0.02	800	44199		
			11:49:10	40.17	20.01	143.12	0.02	0.02	800	44693		
			11:49:11	40.20	20.01	143.05	0.02	0.02	800	36866		
			11:49:12	40.09	20.01	143.03	0.55	0.11	800	7085		
			11:49:13	39.81	20.01	142.73	0.02	0.02	800	44693		
			11:49:14	39.80	20.01	142.57	0.02	0.02	800	43243		
			11:49:15	39.81	20.01	142.48	0.02	0.02	800	41885		
			11:49:16	39.67	20.01	142.42	0.02	0.02	800	45198		
			11:49:17	39.69	20.01	142.42	0.02	0.02	800	50000		
			11:49:18	39.90	20.01	141.87	0.15	0.15	800	5413		
			11:49:19	40.04	20.02	141.39	0.43	0.01	800	118204		
			11:49:20	40.04	20.02	141.29	0.28	0.28	800	2882		
			11:49:21	40.24	20.02	141.60	0.02	0.02	800	41885		
			11:49:22	40.36	20.02	141.27	0.02	0.02	800	43716		
			11:49:23	40.36	20.02	140.17	0.02	0.02	800	44199		
			11:49:24	40.30	20.02	139.51	0.02	0.02	800	43716		
			11:49:25	40.43	20.02	139.31	0.02	0.02	800	46512		
			11:49:26	40.50	20.02	140.28	2.09	1.50	800	534		
			11:49:27	40.46	20.02	140.78	1.33	0.82	800	981		

**TABLE D-26**

Profile PRO-20 on September 22, 2022 (1140-1153 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

249	Instantaneous Minimum Dilution in Profile
353	Minimum Average Dilution in Profile
596	Plume Average Dilution Detected
1740	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			11:49:28	40.54	20.02	141.50	0.02	0.02	800	42781		
			11:49:29	40.72	20.01	141.18	0.02	0.02	800	40000		
			11:49:30	40.70	20.01	141.87	0.02	0.02	800	47059		
			11:49:31	40.75	20.01	142.17	0.02	0.02	800	47619		
			11:49:32	40.88	20.01	142.06	0.02	0.02	800	45198		
			11:49:33	40.84	20.01	141.96	0.02	0.02	800	44199		
			11:49:34	40.73	20.01	142.04	0.02	0.02	800	43243		
			11:49:35	40.89	20.01	142.00	0.02	0.02	800	41885		
			11:49:36	41.00	20.01	141.75	0.02	0.02	800	44693		
			11:49:37	41.06	20.01	141.60	0.02	0.02	800	41451		
			11:49:38	41.07	20.01	141.46	0.02	0.02	800	41885		
			11:49:39	41.06	20.01	141.52	0.02	0.02	800	43716		
			11:49:40	41.15	20.01	141.73	0.02	0.02	800	46784		
			11:49:41	41.03	20.01	141.80	0.02	0.02	800	42328		
			11:49:42	40.99	20.01	141.94	0.02	0.02	800	45714		
			11:49:43	41.09	20.01	142.28	0.03	0.03	800	26059		
			11:49:44	41.15	20.02	142.47	1.66	1.11	800	722		
			11:49:45	40.98	20.02	142.21	0.31	0.31	800	2621		
			11:49:46	41.00	20.02	141.89	0.02	0.02	800	43716		
			11:49:47	41.06	20.01	141.89	0.02	0.02	800	41451		
			11:49:48	40.92	20.01	141.96	0.02	0.02	800	44199		
			11:49:49	40.87	20.01	142.02	0.02	0.02	800	44199		
			11:49:50	40.87	20.02	142.04	0.02	0.02	800	45977		
			11:49:51	40.87	20.02	142.00	0.48	0.05	800	16530		
			11:49:52	40.86	20.02	142.02	0.17	0.17	800	4848		
			11:49:53	40.78	20.02	142.04	0.70	0.25	800	3159		
			11:49:54	40.90	20.02	142.08	0.89	0.42	800	1922	2593	Plume traces detected at 40 ft
			11:49:55	42.17	20.02	142.32	0.75	0.30	800	2699		
			11:49:56	44.94	20.02	142.21	0.21	0.21	800	3806		
			11:49:57	45.94	20.02	142.08	0.02	0.02	800	45455		
			11:49:58	46.25	20.02	142.06	0.02	0.02	800	44199		
			11:49:59	46.21	20.02	142.25	0.02	0.02	800	45714		
			11:50:00	46.20	20.02	142.23	0.24	0.24	800	3292		
			11:50:01	46.22	20.01	142.28	0.02	0.02	800	43716		
			11:50:02	46.18	20.01	142.52	0.02	0.02	800	45198		
			11:50:03	46.11	20.01	142.53	0.02	0.02	800	40609		
			11:50:04	46.14	20.01	142.23	0.02	0.02	800	47059		
			11:50:05	46.23	20.01	142.21	0.25	0.25	800	3185		
			11:50:06	46.23	20.02	142.42	1.11	0.62	800	1290		

**TABLE D-26**

Profile PRO-20 on September 22, 2022 (1140-1153 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

249	Instantaneous Minimum Dilution in Profile
353	Minimum Average Dilution in Profile
596	Plume Average Dilution Detected
1740	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:50:07	46.19	20.02	142.30	1.27	0.76	800	1049	1307	Plume traces detected at 46 ft
			11:50:08	45.98	20.02	142.32	0.99	0.51	800	1583		
			11:50:09	46.06	20.02	142.15	0.14	0.14	800	5606		
			11:50:10	45.99	20.02	142.06	0.12	0.12	800	6436		
			11:50:11	45.72	20.02	142.06	0.31	0.31	800	2586		
			11:50:12	45.73	20.02	142.08	0.75	0.29	800	2749		
			11:50:13	45.92	20.02	142.21	1.78	1.22	800	655		
			11:50:14	45.84	20.02	142.38	1.63	1.09	800	736		
			11:50:15	45.74	20.02	142.17	1.57	1.03	800	774	704	
			11:50:16	45.79	20.02	142.06	2.40	1.78	800	450		
			11:50:17	45.88	20.02	141.98	1.41	0.88	800	906		
			11:50:18	45.78	20.02	142.00	1.07	0.58	800	1386		
			11:50:19	45.89	20.02	141.96	1.19	0.69	800	1167		
			11:50:20	46.12	20.02	141.82	0.83	0.36	800	2199		
			11:50:21	46.13	20.02	141.82	1.50	0.97	800	826		
			11:50:22	46.03	20.02	141.85	1.04	0.56	800	1439		
			11:50:23	46.25	20.02	141.80	1.31	0.80	800	1000	970	
			11:50:24	46.14	20.02	141.65	1.48	0.95	800	842		
			11:50:25	45.99	20.02	141.63	1.62	1.08	800	743		
			11:50:26	46.04	20.02	141.63	0.93	0.46	800	1740		
			11:50:27	46.04	20.02	141.31	0.21	0.21	800	3791		
			11:50:28	45.95	20.02	141.09	0.31	0.31	800	2570		
			11:50:29	46.03	20.02	141.10	0.39	0.39	800	2054		
			11:50:30	46.05	20.02	141.03	1.04	0.55	800	1453		
			11:50:31	46.03	20.02	141.00	0.97	0.49	800	1622		
			11:50:32	46.09	20.02	141.01	0.35	0.35	800	2270		
			11:50:33	45.98	20.02	141.05	0.14	0.14	800	5571		
			11:50:34	45.98	20.02	141.00	0.26	0.26	800	3130		
			11:50:35	46.11	20.02	141.12	0.41	0.41	800	1930		
			11:50:36	46.09	20.02	141.18	0.67	0.22	800	3652		
			11:50:37	46.12	20.02	141.20	0.82	0.36	800	2217		
			11:50:38	46.04	20.02	141.20	0.32	0.32	800	2482		
			11:50:39	46.01	20.02	141.20	0.20	0.20	800	4018		
			11:50:40	45.90	20.02	141.22	0.05	0.05	800	14981		
			11:50:41	45.96	20.02	141.20	0.23	0.23	800	3414		
			11:50:42	46.02	20.02	141.20	0.04	0.04	800	20253		
			11:50:43	46.08	20.02	141.18	0.90	0.43	800	1879		
			11:50:44	46.19	20.02	141.31	1.13	0.63	800	1267		
			11:50:45	46.22	20.02	141.33	0.87	0.40	800	2012		



**TABLE D-26**

Profile PRO-20 on September 22, 2022 (1140-1153 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

249	Instantaneous Minimum Dilution in Profile
353	Minimum Average Dilution in Profile
596	Plume Average Dilution Detected
1740	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:50:46	46.26	20.02	141.33	1.48	0.95	800	844		
			11:50:47	46.20	20.02	141.52	1.67	1.12	800	715		
			11:50:48	46.17	20.02	141.80	1.86	1.29	800	619		
			11:50:49	46.27	20.02	141.82	2.54	1.90	800	421	597	Plume detected at 46 ft
			11:50:50	46.26	20.02	141.73	2.36	1.74	800	460		
			11:50:51	46.18	20.02	141.75	2.30	1.68	800	475		
			11:50:52	46.31	20.02	142.00	2.42	1.79	800	446		
			11:50:53	46.32	20.02	142.17	1.54	1.01	800	795		
			11:50:54	46.20	20.02	142.15	1.14	0.65	800	1238		
			11:50:55	46.23	20.02	141.96	0.91	0.44	800	1822		
			11:50:56	46.22	20.02	141.48	0.31	0.31	800	2581		
			11:50:57	46.30	20.02	141.31	0.94	0.47	800	1720	1399	Plume traces detected at 46 ft
			11:50:58	46.32	20.02	141.22	1.22	0.71	800	1123		
			11:50:59	46.37	20.02	141.33	1.29	0.78	800	1031		
			11:51:00	46.47	20.02	141.44	1.78	1.22	800	655		
			11:51:01	46.50	20.02	141.56	1.29	0.78	800	1023		
			11:51:02	46.45	20.02	141.69	0.54	0.11	800	7342		
			11:51:03	46.46	20.02	141.67	0.15	0.15	800	5420		
			11:51:04	46.38	20.02	141.54	0.30	0.30	800	2670		
			11:51:05	46.40	20.02	141.88	0.52	0.09	800	9274		
			11:51:06	46.36	20.02	142.34	1.19	0.69	800	1165		
			11:51:07	46.32	20.02	142.49	0.52	0.09	800	9132		
			11:51:08	46.32	20.02	142.54	0.02	0.02	800	43243		
			11:51:09	46.23	20.01	142.65	0.02	0.02	800	41451		
			11:51:10	46.17	20.01	142.54	0.02	0.02	800	43243		
			11:51:11	46.20	20.01	142.56	0.02	0.02	800	41026		
			11:51:12	46.08	20.01	142.52	0.02	0.02	800	44199		
			11:51:13	45.99	20.01	142.30	0.02	0.02	800	40816		
			11:51:14	45.96	20.01	142.34	0.02	0.02	800	44199		
			11:51:15	46.11	20.01	142.48	0.02	0.02	800	44693		
			11:51:16	46.07	20.01	142.46	0.02	0.02	800	45977		
			11:51:17	46.05	20.01	142.42	0.02	0.02	800	43243		
			11:51:18	46.17	20.01	142.47	0.07	0.07	800	11494		
			11:51:19	46.25	20.01	142.53	0.02	0.02	800	39604		
			11:51:20	46.20	20.01	142.67	0.02	0.02	800	42781		
			11:51:21	46.27	20.01	142.54	0.02	0.02	800	40609		
			11:51:22	46.36	20.02	142.54	1.09	0.60	800	1334		
			11:51:23	46.31	20.02	142.59	1.91	1.33	800	601		
			11:51:24	46.14	20.02	142.57	1.99	1.41	800	568		

**TABLE D-26**

Profile PRO-20 on September 22, 2022 (1140-1153 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

249	Instantaneous Minimum Dilution in Profile
353	Minimum Average Dilution in Profile
596	Plume Average Dilution Detected
1740	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:51:25	46.19	20.02	142.55	1.45	0.92	800	867	645	Plume detected at 46 ft
			11:51:26	46.05	20.02	142.65	1.36	0.84	800	948		
			11:51:27	45.93	20.02	142.65	2.05	1.46	800	547		
			11:51:28	46.11	20.02	142.65	2.14	1.54	800	520		
			11:51:29	46.13	20.02	142.69	2.27	1.66	800	481		
			11:51:30	46.20	20.02	142.69	1.84	1.27	800	629		
			11:51:31	46.26	20.01	142.69	0.21	0.21	800	3837		
			11:51:32	46.28	20.01	142.71	0.17	0.17	800	4630		
			11:51:33	46.35	20.01	142.80	1.20	0.70	800	1151		
			11:51:34	46.22	20.02	143.23	1.83	1.27	800	632		
			11:51:35	46.27	20.02	142.99	2.16	1.56	800	512		
			11:51:36	46.23	20.02	142.57	0.62	0.17	800	4612		
			11:51:37	46.03	20.01	142.44	0.02	0.02	800	40816		
			11:51:38	46.16	20.01	142.65	0.02	0.02	800	43243		
			11:51:39	46.04	20.01	142.73	0.02	0.02	800	41885		
			11:51:40	45.93	20.01	142.78	0.02	0.02	800	43243		
			11:51:41	45.92	20.01	142.80	0.02	0.02	800	39604		
			11:51:42	45.96	20.01	142.84	0.02	0.02	800	42781		
			11:51:43	45.91	20.01	142.78	0.04	0.04	800	22409		
			11:51:44	45.93	20.01	142.76	0.02	0.02	800	47059		
			11:51:45	46.10	20.01	142.76	0.02	0.02	800	43243		
			11:51:46	46.11	20.01	142.69	0.02	0.02	800	46243		
			11:51:47	46.15	20.01	142.76	0.02	0.02	800	39604		
			11:51:48	46.15	20.02	142.88	0.89	0.42	800	1910		
			11:51:49	46.19	20.02	142.84	0.91	0.44	800	1821		
			11:51:50	46.16	20.02	142.80	0.77	0.31	800	2583		
			11:51:51	46.06	20.02	142.78	1.00	0.52	800	1547		
			11:51:52	46.04	20.02	142.76	1.18	0.68	800	1182		
			11:51:53	45.97	20.02	142.82	1.13	0.63	800	1260		
			11:51:54	45.85	20.01	142.80	0.15	0.15	800	5302		
			11:51:55	45.84	20.01	142.76	0.02	0.02	800	42328		
			11:51:56	45.88	20.01	142.76	0.02	0.02	800	44444		
			11:51:57	45.87	20.01	142.82	0.04	0.04	800	21978		
			11:51:58	45.96	20.01	142.95	0.13	0.13	800	5935		
			11:51:59	45.98	20.01	143.07	0.56	0.13	800	6353		
			11:52:00	46.05	20.01	143.03	0.31	0.31	800	2565		
			11:52:01	46.23	20.01	142.97	0.18	0.18	800	4477		
			11:52:02	46.21	20.01	142.97	1.25	0.74	800	1077		
			11:52:03	46.27	20.02	143.18	1.43	0.90	800	885		

**TABLE D-26**

Profile PRO-20 on September 22, 2022 (1140-1153 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

249	Instantaneous Minimum Dilution in Profile
353	Minimum Average Dilution in Profile
596	Plume Average Dilution Detected
1740	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:52:04	46.09	20.02	143.19	1.04	0.56	800	1431		
			11:52:05	46.02	20.02	142.99	0.17	0.17	800	4574		
			11:52:06	45.93	20.01	143.12	0.02	0.02	800	45455		
			11:52:07	45.80	20.02	143.36	0.25	0.25	800	3158		
			11:52:08	45.70	20.02	143.32	1.06	0.57	800	1399		
			11:52:09	45.67	20.02	143.31	1.84	1.27	800	630		
			11:52:10	45.70	20.02	143.34	1.94	1.37	800	586		
			11:52:11	45.65	20.02	143.51	1.58	1.04	800	772		
			11:52:12	45.74	20.02	143.55	1.94	1.36	800	589	619	Plume detected at 46 ft
			11:52:13	45.82	20.02	143.55	1.90	1.33	800	603		
			11:52:14	45.84	20.02	143.62	1.80	1.24	800	647		
			11:52:15	45.87	20.02	143.29	2.33	1.72	800	466		
			11:52:16	45.96	20.02	142.98	1.78	1.22	800	657		
			11:52:17	45.86	20.01	142.80	0.16	0.16	800	5151		
			11:52:18	45.90	20.01	142.61	0.02	0.02	800	45455		
			11:52:19	45.87	20.01	142.57	0.02	0.02	800	44693		
			11:52:20	45.67	20.01	142.38	0.02	0.02	800	45198		
			11:52:21	45.53	20.01	142.30	0.02	0.02	800	43716		
			11:52:22	45.32	20.01	142.25	0.02	0.02	800	44199		
			11:52:23	45.18	20.01	142.28	0.02	0.02	800	44199		
			11:52:24	45.03	20.01	142.30	0.02	0.02	800	45198		
			11:52:25	44.94	20.01	142.36	0.02	0.02	800	46243		
			11:52:26	44.78	20.01	142.55	0.02	0.02	800	47619		
			11:52:27	44.75	20.01	142.63	0.02	0.02	800	45714		
			11:52:28	44.88	20.01	142.61	0.02	0.02	800	42781		
			11:52:29	44.80	20.01	142.63	0.02	0.02	800	52288		
			11:52:30	44.99	20.01	142.69	0.02	0.02	800	44944		
			11:52:31	45.17	20.01	142.80	0.29	0.29	800	2744		
			11:52:32	45.23	20.01	142.84	0.76	0.30	800	2627		
			11:52:33	45.26	20.02	142.88	0.72	0.27	800	3016		
			11:52:34	45.44	20.02	142.67	1.14	0.64	800	1249		
			11:52:35	45.47	20.02	142.49	0.79	0.33	800	2416		
			11:52:36	45.45	20.02	142.56	1.24	0.74	800	1085		
			11:52:37	45.47	20.02	142.61	1.08	0.59	800	1351		
			11:52:38	45.43	20.02	142.60	1.15	0.65	800	1223		
			11:52:39	45.22	20.02	142.76	2.08	1.49	800	539	816	Plume detected at 46 ft
			11:52:40	45.14	20.02	143.17	2.26	1.65	800	485		
			11:52:41	45.04	20.02	143.87	3.44	2.71	800	296		
			11:52:42	44.94	20.02	143.83	2.87	2.20	800	364		

**TABLE D-26**

Profile PRO-20 on September 22, 2022 (1140-1153 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

249	Instantaneous Minimum Dilution in Profile
353	Minimum Average Dilution in Profile
596	Plume Average Dilution Detected
1740	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:52:43	44.84	20.01	143.52	1.17	0.67	800	1185		Plume detected at 46 ft
			11:52:44	44.86	20.01	143.24	0.02	0.02	800	46784		
			11:52:45	44.87	20.01	143.33	0.43	0.01	800	74657		
			11:52:46	44.86	20.01	143.55	1.47	0.94	800	850		
			11:52:47	45.04	20.01	143.55	2.12	1.52	800	526		
			11:52:48	45.04	20.01	143.28	0.68	0.23	800	3433		
			11:52:49	45.17	20.02	143.66	2.21	1.61	800	497		
			11:52:50	45.14	20.02	143.97	2.95	2.27	800	353	354	
			11:52:51	45.16	20.02	144.26	4.00	3.21	800	249		
			11:52:52	45.20	20.02	143.94	3.23	2.52	800	318		
			11:52:53	45.02	20.01	142.33	0.37	0.37	800	2152		
			11:52:54	45.05	20.01	141.77	0.02	0.02	800	51613		
			11:52:55	45.18	20.01	142.05	0.02	0.02	800	43243		
			11:52:56	45.24	20.01	142.84	0.43	0.01	800	68889		
			11:52:57	45.35	20.01	143.03	0.91	0.44	800	1822		
			11:52:58	45.47	20.01	143.18	0.56	0.12	800	6682		
			11:52:59	45.33	20.01	143.05	0.17	0.17	800	4676		
			11:53:00	45.28	20.01	142.41	0.02	0.02	800	44693		
			11:53:01	45.25	20.01	141.44	0.02	0.02	800	44693		
			11:53:02	45.24	20.01	141.46	0.02	0.02	800	47059		
			11:53:03	45.29	20.01	141.76	0.02	0.02	800	48780		
			11:53:04	45.34	20.01	142.13	0.02	0.02	800	45714		
			11:53:05	45.53	20.01	141.75	0.02	0.02	800	44199		
			11:53:06	45.57	20.01	141.84	0.02	0.02	800	43716		
			11:53:07	45.51	20.01	142.00	0.02	0.02	800	43716		
			11:53:08	45.39	20.01	141.82	0.02	0.02	800	43716		
			11:53:09	45.27	20.01	142.21	0.20	0.20	800	3964		
			11:53:10	45.21	20.01	142.61	0.35	0.35	800	2301		
			11:53:11	45.13	20.01	142.49	0.32	0.32	800	2531		
			11:53:12	45.17	20.02	142.50	0.65	0.20	800	3973		
			11:53:13	45.29	20.02	142.80	1.61	1.07	800	750		
			11:53:14	45.56	20.02	142.99	2.29	1.68	800	476		
			11:53:15	45.80	20.02	143.01	2.09	1.50	800	534		
			11:53:16	45.79	20.02	142.84	1.56	1.02	800	782		
			11:53:17	46.09	20.02	143.05	2.03	1.44	800	554	Plume detected at 46 ft	
			11:53:18	46.23	20.02	143.21	2.69	2.03	800	393		
			11:53:19	46.25	20.02	143.26	2.94	2.26	800	354		
			11:53:20	46.27	20.02	143.28	3.03	2.34	800	342		
			11:53:21	46.32	20.02	143.20	2.46	1.83	800	438		

**TABLE D-26**

Profile PRO-20 on September 22, 2022 (1140-1153 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

249	Instantaneous Minimum Dilution in Profile
353	Minimum Average Dilution in Profile
596	Plume Average Dilution Detected
1740	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			11:53:22	46.16	20.02	143.12	1.64	1.09	800	734		Plume detected at 46 ft
			11:53:23	46.11	20.02	142.90	0.25	0.25	800	3175		
			11:53:24	46.13	20.01	144.43	0.07	0.07	800	12270		
			11:53:25	46.11	20.01	145.15	0.18	0.18	800	4472		
			11:53:26	46.10	20.01	145.16	0.41	0.41	800	1934		
			11:53:27	46.07	20.01	145.35	1.09	0.60	800	1329		
			11:53:28	46.19	20.02	145.38	1.21	0.70	800	1137		
			11:53:29	46.17	20.02	145.40	1.40	0.88	800	912		
			11:53:30	46.16	20.02	145.38	1.97	1.39	800	575		
			11:53:31	46.30	20.02	145.38	1.80	1.23	800	649	763	
			11:53:32	46.19	20.02	145.36	1.87	1.30	800	616		
			11:53:33	46.18	20.02	145.33	1.86	1.29	800	622		
			11:53:34	46.18	20.02	145.38	1.53	0.99	800	808		
			11:53:35	46.16	20.02	145.39	1.56	1.02	800	786		

**TABLE D-27**

Profile PRO-21 on September 22, 2022 (1307-1319 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

18	Instantaneous Minimum Dilution in Profile
30	Minimum Average Dilution in Profile
54	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-21 (North Acute Zone Boundary - 24 ft from Diffuser)	48 ft	0.21 m/sec 343 deg. (mag.) Late Ebb Tide	13:07:40	1.29	20.00	141.90	0.07	0.07	815	11933	No plume detected near surface	
			13:07:41	1.81	20.04	142.13	0.02	0.02	815	40955		
			13:07:42	2.29	20.03	141.96	0.02	0.02	815	40750		
			13:07:43	2.36	20.00	141.83	0.02	0.02	815	38443		
			13:07:44	2.36	20.00	141.82	0.02	0.02	815	39951		
			13:07:45	2.32	20.01	141.94	0.02	0.02	815	41371		
			13:07:46	2.35	20.03	141.96	0.02	0.02	815	40955		
			13:07:47	2.35	20.03	141.96	0.02	0.02	815	41371		
			13:07:48	2.36	20.04	142.00	0.02	0.02	815	43122		
			13:07:49	2.30	20.05	142.04	0.02	0.02	815	43122		
			13:07:50	2.30	20.05	142.04	0.02	0.02	815	42228		
			13:07:51	2.36	20.05	141.96	0.02	0.02	815	41162		
			13:07:52	2.40	20.04	142.15	0.02	0.02	815	41371		
			13:07:53	2.39	20.03	142.02	0.02	0.02	815	44536		
			13:07:54	2.34	20.03	142.28	0.02	0.02	815	44536		
			13:07:55	2.38	20.02	142.25	0.02	0.02	815	46045		
			13:07:56	2.35	20.02	142.40	0.02	0.02	815	43122		
			13:07:57	2.35	20.03	142.46	0.02	0.02	815	41371		
			13:07:58	2.38	20.04	142.52	0.02	0.02	815	44054		
			13:07:59	2.35	20.04	142.50	0.02	0.02	815	42228		
13:08:00	2.35	20.04	142.52	0.02	0.02	815	47384					
13:08:01	2.35	20.04	142.49	0.02	0.02	815	42670					
13:08:02	2.38	20.03	142.47	0.02	0.02	815	44536					
13:08:03	2.39	20.03	142.44	0.02	0.02	815	43122					
13:08:04	2.34	20.03	142.47	0.02	0.02	815	45531					
13:08:05	2.36	20.03	142.43	0.02	0.02	815	41371					
13:08:06	2.34	20.02	142.40	0.02	0.02	815	43122					
13:08:07	2.35	20.01	142.38	0.02	0.02	815	43122					
13:08:08	2.35	20.01	142.42	0.02	0.02	815	42228					
13:08:09	2.39	20.02	142.52	0.02	0.02	815	43583					
13:08:10	2.36	20.03	142.59	0.02	0.02	815	45028					
13:08:11	2.36	20.03	142.57	0.02	0.02	815	45028					
13:08:12	2.29	20.03	142.68	0.02	0.02	815	45531					
13:08:13	2.35	20.02	142.66	0.02	0.02	815	44536					
13:08:14	2.30	20.00	142.80	0.02	0.02	815	39563					
13:08:15	2.32	19.99	142.63	0.02	0.02	815	43122					
13:08:16	2.32	19.98	142.84	0.02	0.02	815	41582					
13:08:17	2.27	19.99	142.69	0.02	0.02	815	40347					
13:08:18	2.30	19.97	142.82	0.02	0.02	815	45278					

**TABLE D-27**

Profile PRO-21 on September 22, 2022 (1307-1319 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

18	Instantaneous Minimum Dilution in Profile
30	Minimum Average Dilution in Profile
54	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:08:19	2.32	19.98	142.69	0.02	0.02	815	42228		No plume detected at 7-8 ft
			13:08:20	2.27	19.97	142.82	0.02	0.02	815	43122		
			13:08:21	2.43	19.97	142.97	0.02	0.02	815	40347		
			13:08:22	2.74	20.00	143.26	0.02	0.02	815	41582		
			13:08:23	4.87	20.03	143.49	3.22	2.51	815	325		
			13:08:24	7.43	20.03	145.08	0.02	0.02	815	39951		
			13:08:25	7.84	20.03	144.86	0.02	0.02	815	47941		
			13:08:26	7.99	20.03	145.18	0.02	0.02	815	43583		
			13:08:27	7.98	20.03	145.38	0.02	0.02	815	42670		
			13:08:28	8.01	20.03	145.48	0.02	0.02	815	42010		
			13:08:29	7.94	20.03	145.54	0.02	0.02	815	49695		
			13:08:30	7.95	20.03	145.52	0.02	0.02	815	41795		
			13:08:31	7.95	20.03	145.50	0.02	0.02	815	41162		
			13:08:32	7.97	20.03	145.50	0.02	0.02	815	44536		
			13:08:33	7.98	20.03	145.36	0.02	0.02	815	45531		
			13:08:34	7.93	20.03	145.35	0.02	0.02	815	43583		
			13:08:35	7.98	20.03	145.46	0.02	0.02	815	40750		
			13:08:36	8.00	20.02	145.61	0.02	0.02	815	41371		
			13:08:37	7.96	20.02	145.75	0.02	0.02	815	44536		
			13:08:38	8.00	20.02	146.09	0.02	0.02	815	41795		
			13:08:39	7.96	20.01	146.33	0.02	0.02	815	42670		
			13:08:40	7.94	20.01	146.36	0.02	0.02	815	42228		
			13:08:41	7.99	20.01	146.04	0.02	0.02	815	43583		
			13:08:42	7.96	20.01	145.41	0.02	0.02	815	44054		
			13:08:43	7.97	20.01	145.21	0.02	0.02	815	40955		
			13:08:44	7.99	20.01	145.27	0.02	0.02	815	42670		
			13:08:45	7.94	20.01	145.30	0.02	0.02	815	42010		
			13:08:46	8.04	20.01	145.20	0.02	0.02	815	44536		
			13:08:47	8.04	20.01	145.11	0.02	0.02	815	43583		
			13:08:48	8.06	20.01	145.06	0.02	0.02	815	43122		
			13:08:49	8.04	20.01	145.00	0.02	0.02	815	45531		
			13:08:50	8.05	20.01	144.85	0.02	0.02	815	41371		
			13:08:51	8.04	20.01	144.91	0.02	0.02	815	44536		
			13:08:52	8.07	20.01	144.82	0.02	0.02	815	42228		
			13:08:53	8.08	20.02	144.26	0.02	0.02	815	42010		
			13:08:54	8.07	20.02	143.81	0.02	0.02	815	41162		
			13:08:55	8.05	20.02	143.55	0.02	0.02	815	41582		
			13:08:56	8.07	20.02	143.40	0.02	0.02	815	42228		
			13:08:57	8.07	20.02	143.38	0.02	0.02	815	40750		

**TABLE D-27**

Profile PRO-21 on September 22, 2022 (1307-1319 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

18	Instantaneous Minimum Dilution in Profile
30	Minimum Average Dilution in Profile
54	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:08:58	8.08	20.02	143.32	0.02	0.02	815	41371		
			13:08:59	8.07	20.02	143.34	0.02	0.02	815	40347		
			13:09:00	8.03	20.02	143.49	0.02	0.02	815	42670		
			13:09:01	8.05	20.03	143.45	0.02	0.02	815	44054		
			13:09:02	8.06	20.03	143.51	0.02	0.02	815	46571		
			13:09:03	8.07	20.03	143.51	0.02	0.02	815	47941		
			13:09:04	8.11	20.03	143.53	0.02	0.02	815	45028		
			13:09:05	8.09	20.03	143.70	0.02	0.02	815	46839		
			13:09:06	8.06	20.03	143.69	0.02	0.02	815	43583		
			13:09:07	8.07	20.03	143.66	0.02	0.02	815	42010		
			13:09:08	8.05	20.03	143.66	0.02	0.02	815	39951		
			13:09:09	8.15	20.03	143.66	0.02	0.02	815	42228		
			13:09:10	8.21	20.03	143.59	0.02	0.02	815	42010		
			13:09:11	8.34	20.03	143.57	0.02	0.02	815	46839		
			13:09:12	8.47	20.03	143.59	0.02	0.02	815	41795		
			13:09:13	8.92	20.03	143.61	0.02	0.02	815	41371		
			13:09:14	9.33	20.03	143.72	0.02	0.02	815	41371		
			13:09:15	11.13	20.03	143.47	0.02	0.02	815	46839		
			13:09:16	13.13	20.03	143.38	0.02	0.02	815	39183		
			13:09:17	13.62	20.03	143.30	0.02	0.02	815	41795		No plume detected at 13-14 ft
			13:09:18	13.63	20.03	143.27	0.02	0.02	815	38810		
			13:09:19	13.71	20.03	143.30	0.02	0.02	815	43122		
			13:09:20	13.72	20.03	143.25	0.02	0.02	815	39183		
			13:09:21	13.73	20.03	143.31	0.02	0.02	815	42228		
			13:09:22	13.71	20.03	143.28	0.02	0.02	815	45787		
			13:09:23	13.72	20.03	143.34	0.02	0.02	815	47941		
			13:09:24	13.71	20.03	143.34	0.02	0.02	815	43583		
			13:09:25	13.62	20.03	143.49	0.02	0.02	815	41795		
			13:09:26	13.59	20.03	143.55	0.02	0.02	815	37558		
			13:09:27	13.54	20.03	143.61	0.02	0.02	815	44054		
			13:09:28	13.55	20.03	143.64	0.02	0.02	815	42228		
			13:09:29	13.45	20.03	143.64	0.02	0.02	815	45028		
			13:09:30	13.58	20.03	143.68	0.02	0.02	815	47661		
			13:09:31	13.53	20.03	143.64	0.02	0.02	815	42670		
			13:09:32	13.45	20.03	143.64	0.02	0.02	815	45028		
			13:09:33	13.42	20.03	143.64	0.02	0.02	815	42228		
			13:09:34	13.43	20.03	143.67	0.02	0.02	815	41795		
			13:09:35	13.45	20.03	143.33	0.02	0.02	815	42670		
			13:09:36	13.48	20.03	143.01	0.02	0.02	815	40955		



**TABLE D-27**

Profile PRO-21 on September 22, 2022 (1307-1319 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

18	Instantaneous Minimum Dilution in Profile
30	Minimum Average Dilution in Profile
54	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:09:37	13.46	20.03	142.67	0.02	0.02	815	40750		No plume detected at 18-19 ft
			13:09:38	13.47	20.03	142.69	0.02	0.02	815	47110		
			13:09:39	13.44	20.03	142.63	0.02	0.02	815	41582		
			13:09:40	13.46	20.03	142.13	0.02	0.02	815	40750		
			13:09:41	13.44	20.04	141.94	0.02	0.02	815	39951		
			13:09:42	13.43	20.04	141.96	0.02	0.02	815	43583		
			13:09:43	13.53	20.04	142.25	0.02	0.02	815	44536		
			13:09:44	13.45	20.04	142.34	0.02	0.02	815	40347		
			13:09:45	13.49	20.04	142.64	0.02	0.02	815	44536		
			13:09:46	13.65	20.04	142.73	0.02	0.02	815	40347		
			13:09:47	15.05	20.03	142.84	0.02	0.02	815	44536		
			13:09:48	18.12	20.04	142.69	0.02	0.02	815	43122		
			13:09:49	18.96	20.04	142.71	0.02	0.02	815	41582		
			13:09:50	19.04	20.04	142.84	0.02	0.02	815	46839		
			13:09:51	19.13	20.04	142.61	0.02	0.02	815	45531		
			13:09:52	19.08	20.04	142.57	0.02	0.02	815	43583		
			13:09:53	19.07	20.04	142.73	0.02	0.02	815	44536		
			13:09:54	19.10	20.04	142.54	0.02	0.02	815	45028		
			13:09:55	18.99	20.04	142.32	0.02	0.02	815	44536		
			13:09:56	19.03	20.04	143.21	0.02	0.02	815	43583		
			13:09:57	18.99	20.04	143.38	0.02	0.02	815	42228		
			13:09:58	19.04	20.04	143.59	0.02	0.02	815	43583		
			13:09:59	19.01	20.03	143.67	0.02	0.02	815	43122		
			13:10:00	19.05	20.03	144.31	0.02	0.02	815	46045		
			13:10:01	19.01	20.03	145.17	0.02	0.02	815	43583		
			13:10:02	19.10	20.02	145.58	0.02	0.02	815	42228		
			13:10:03	19.18	20.02	146.32	0.02	0.02	815	44536		
			13:10:04	19.13	20.01	146.12	0.02	0.02	815	42670		
			13:10:05	19.06	20.02	145.86	0.02	0.02	815	44054		
			13:10:06	19.10	20.02	146.05	0.02	0.02	815	42228		
			13:10:07	19.08	20.01	146.15	0.02	0.02	815	45028		
			13:10:08	19.15	20.01	146.36	0.02	0.02	815	42010		
			13:10:09	19.16	20.01	146.55	0.02	0.02	815	42670		
			13:10:10	19.12	20.01	146.59	0.02	0.02	815	47110		
			13:10:11	19.12	20.01	146.40	0.02	0.02	815	44054		
			13:10:12	19.13	20.01	146.38	0.02	0.02	815	46045		
			13:10:13	19.18	20.01	146.53	0.02	0.02	815	42228		
			13:10:14	19.12	20.01	146.64	0.02	0.02	815	43122		
			13:10:15	19.10	20.01	146.67	0.02	0.02	815	40750		

**TABLE D-27**

Profile PRO-21 on September 22, 2022 (1307-1319 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

18	Instantaneous Minimum Dilution in Profile
30	Minimum Average Dilution in Profile
54	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:10:16	19.09	20.01	146.62	0.02	0.02	815	41162		
			13:10:17	19.09	20.01	146.55	0.02	0.02	815	45028		
			13:10:18	19.15	20.01	146.55	0.02	0.02	815	45531		
			13:10:19	19.09	20.01	146.51	0.02	0.02	815	44536		
			13:10:20	19.13	20.01	146.62	0.02	0.02	815	43583		
			13:10:21	19.22	20.01	146.57	0.02	0.02	815	41795		
			13:10:22	19.32	20.01	146.67	0.02	0.02	815	41795		
			13:10:23	19.29	20.01	146.72	0.02	0.02	815	42228		
			13:10:24	19.34	20.01	146.70	0.02	0.02	815	39563		
			13:10:25	19.61	20.01	146.70	0.02	0.02	815	39951		
			13:10:26	21.09	20.01	146.72	0.02	0.02	815	43583		
			13:10:27	24.04	20.01	146.59	0.02	0.02	815	40347		
			13:10:28	24.96	20.01	146.48	0.02	0.02	815	42228		
			13:10:29	25.13	20.01	146.51	0.02	0.02	815	41795		
			13:10:30	25.14	20.01	146.51	0.02	0.02	815	42010		
			13:10:31	25.17	20.01	146.62	0.02	0.02	815	42228		
			13:10:32	25.17	20.01	146.64	0.02	0.02	815	41162		
			13:10:33	25.12	20.01	146.64	0.02	0.02	815	38810		
			13:10:34	25.14	20.01	146.59	0.02	0.02	815	46045		
			13:10:35	24.95	20.01	146.59	0.02	0.02	815	43122		
			13:10:36	24.96	20.01	146.55	0.02	0.02	815	41162		
			13:10:37	24.90	20.01	146.53	0.02	0.02	815	44054		
			13:10:38	24.88	20.01	146.53	0.02	0.02	815	40955		
			13:10:39	24.86	20.01	146.59	0.02	0.02	815	42228		
			13:10:40	24.86	20.01	146.57	0.02	0.02	815	41371		
			13:10:41	24.87	20.01	146.59	0.02	0.02	815	41162		
			13:10:42	24.83	20.01	146.59	0.02	0.02	815	39563		
			13:10:43	24.86	20.01	146.57	0.02	0.02	815	40750		
			13:10:44	24.86	20.01	146.55	0.02	0.02	815	46045		
			13:10:45	24.87	20.01	146.57	0.02	0.02	815	43583		
			13:10:46	24.85	20.01	146.55	0.02	0.02	815	41162		
			13:10:47	24.86	20.01	146.64	0.02	0.02	815	45028		
			13:10:48	24.93	20.01	146.64	0.02	0.02	815	42670		
			13:10:49	24.89	20.01	146.64	0.02	0.02	815	41162		
			13:10:50	24.94	20.01	146.62	0.02	0.02	815	41795		
			13:10:51	24.93	20.01	146.64	0.02	0.02	815	42670		
			13:10:52	24.87	20.01	146.64	0.02	0.02	815	43122		
			13:10:53	24.84	20.01	146.62	0.02	0.02	815	40750		
			13:10:54	24.82	20.01	146.68	0.02	0.02	815	42228		

No plume detected at 25 ft

**TABLE D-27**

Profile PRO-21 on September 22, 2022 (1307-1319 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

18	Instantaneous Minimum Dilution in Profile
30	Minimum Average Dilution in Profile
54	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:10:55	24.86	20.01	146.71	0.02	0.02	815	44054		
			13:10:56	24.88	20.01	146.45	0.02	0.02	815	46839		
			13:10:57	24.88	20.01	145.95	0.02	0.02	815	42010		
			13:10:58	24.83	20.02	145.80	0.02	0.02	815	39951		
			13:10:59	24.92	20.02	145.63	0.02	0.02	815	41371		
			13:11:00	24.90	20.02	145.86	0.02	0.02	815	45531		
			13:11:01	24.88	20.02	146.20	0.02	0.02	815	47384		
			13:11:02	24.87	20.01	146.38	0.02	0.02	815	43583		
			13:11:03	24.89	20.01	146.49	0.02	0.02	815	42228		
			13:11:04	24.82	20.01	146.59	0.02	0.02	815	40347		
			13:11:05	24.95	20.01	146.57	0.02	0.02	815	40750		
			13:11:06	24.97	20.01	146.66	0.02	0.02	815	44054		
			13:11:07	24.95	20.01	146.68	0.02	0.02	815	45028		
			13:11:08	25.00	20.01	146.65	0.02	0.02	815	41162		
			13:11:09	25.17	20.01	146.55	0.02	0.02	815	43583		
			13:11:10	25.20	20.01	146.49	0.02	0.02	815	41795		
			13:11:11	25.09	20.01	146.47	0.02	0.02	815	45028		
			13:11:12	25.34	20.01	146.49	0.02	0.02	815	45531		
			13:11:13	25.38	20.01	146.55	0.02	0.02	815	40347		
			13:11:14	25.49	20.01	146.51	0.02	0.02	815	41795		
			13:11:15	25.48	20.01	146.34	0.02	0.02	815	42670		
			13:11:16	26.31	20.01	146.30	0.02	0.02	815	41795		
			13:11:17	29.20	20.01	146.47	0.02	0.02	815	42670		
			13:11:18	30.32	20.01	146.72	0.02	0.02	815	42670		
			13:11:19	30.62	20.01	146.45	0.02	0.02	815	45028		
			13:11:20	30.69	20.01	146.30	0.02	0.02	815	42670		
			13:11:21	30.66	20.01	146.28	0.02	0.02	815	42448		
			13:11:22	30.64	20.01	146.21	0.02	0.02	815	43122		
			13:11:23	30.62	20.01	146.17	0.02	0.02	815	43583		
			13:11:24	30.60	20.01	146.11	0.02	0.02	815	44536		
			13:11:25	30.55	20.01	146.16	0.02	0.02	815	46307		
			13:11:26	30.60	20.01	146.01	0.02	0.02	815	42228		
			13:11:27	30.58	20.01	145.97	0.02	0.02	815	41795		
			13:11:28	30.60	20.01	146.02	0.02	0.02	815	39951		
			13:11:29	30.52	20.01	145.97	0.02	0.02	815	44536		
			13:11:30	30.62	20.01	145.95	0.02	0.02	815	40750		
			13:11:31	30.56	20.01	145.90	0.02	0.02	815	42670		
			13:11:32	30.60	20.02	145.88	0.02	0.02	815	45531		
			13:11:33	30.58	20.02	145.90	0.02	0.02	815	45531		

No plume detected at 30 ft

**TABLE D-27**

Profile PRO-21 on September 22, 2022 (1307-1319 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

18	Instantaneous Minimum Dilution in Profile
30	Minimum Average Dilution in Profile
54	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:11:34	30.57	20.02	145.92	0.02	0.02	815	42670		
			13:11:35	30.61	20.01	145.99	0.02	0.02	815	50938		
			13:11:36	30.59	20.01	145.97	0.02	0.02	815	39951		
			13:11:37	30.58	20.02	145.51	0.02	0.02	815	45531		
			13:11:38	30.62	20.02	145.31	0.02	0.02	815	43122		
			13:11:39	30.60	20.02	145.08	0.02	0.02	815	42228		
			13:11:40	30.61	20.02	145.04	0.02	0.02	815	45028		
			13:11:41	30.63	20.02	144.98	0.02	0.02	815	42670		
			13:11:42	30.63	20.02	144.89	0.02	0.02	815	44536		
			13:11:43	30.59	20.02	144.83	0.02	0.02	815	42228		
			13:11:44	30.63	20.02	145.29	0.02	0.02	815	45531		
			13:11:45	30.60	20.02	145.52	0.02	0.02	815	43122		
			13:11:46	30.64	20.02	145.52	0.02	0.02	815	42010		
			13:11:47	30.61	20.02	145.50	0.02	0.02	815	39951		
			13:11:48	30.61	20.02	145.59	0.02	0.02	815	42010		
			13:11:49	30.57	20.02	145.52	0.02	0.02	815	42228		
			13:11:50	30.64	20.02	145.52	0.02	0.02	815	46045		
			13:11:51	30.64	20.02	145.48	0.02	0.02	815	42670		
			13:11:52	30.66	20.02	145.33	0.02	0.02	815	44054		
			13:11:53	30.77	20.02	145.23	0.02	0.02	815	43122		
			13:11:54	31.41	20.02	145.31	0.02	0.02	815	42228		
			13:11:55	34.10	20.02	145.12	0.02	0.02	815	41582		
			13:11:56	35.85	20.02	145.06	0.02	0.02	815	42670		
			13:11:57	36.02	20.02	145.11	0.02	0.02	815	42670		
			13:11:58	36.11	20.02	145.13	0.02	0.02	815	42670		
			13:11:59	36.11	20.02	144.96	0.02	0.02	815	42670		
			13:12:00	36.09	20.02	144.72	0.02	0.02	815	43583		
			13:12:01	36.02	20.02	144.69	0.02	0.02	815	48512		
			13:12:02	36.09	20.02	144.63	0.02	0.02	815	41371		
			13:12:03	35.87	20.02	144.73	0.02	0.02	815	40955		
			13:12:04	35.94	20.02	144.50	0.02	0.02	815	41582		
			13:12:05	35.78	20.02	144.56	0.02	0.02	815	43583		
			13:12:06	35.85	20.02	144.43	0.02	0.02	815	43583		
			13:12:07	35.81	20.03	144.35	0.02	0.02	815	44536		
			13:12:08	35.77	20.03	144.01	0.02	0.02	815	44054		
			13:12:09	35.76	20.03	143.72	0.02	0.02	815	43122		
			13:12:10	35.68	20.03	143.59	0.02	0.02	815	43122		
			13:12:11	35.76	20.03	143.83	0.02	0.02	815	45531		
			13:12:12	35.74	20.03	143.98	0.02	0.02	815	39183		

**TABLE D-27**

Profile PRO-21 on September 22, 2022 (1307-1319 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

18	Instantaneous Minimum Dilution in Profile
30	Minimum Average Dilution in Profile
54	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			13:12:13	35.87	20.03	143.79	0.02	0.02	815	43351		
			13:12:14	35.78	20.03	143.57	0.02	0.02	815	42228		
			13:12:15	35.93	20.03	143.36	0.02	0.02	815	44536		
			13:12:16	35.79	20.03	143.57	0.02	0.02	815	41795		
			13:12:17	35.91	20.03	143.74	0.02	0.02	815	41795		
			13:12:18	35.86	20.03	144.43	0.02	0.02	815	42228		
			13:12:19	35.90	20.02	145.19	0.02	0.02	815	44054		
			13:12:20	35.88	20.02	145.23	0.02	0.02	815	46307		
			13:12:21	35.91	20.02	145.42	0.02	0.02	815	45278		
			13:12:22	35.85	20.02	145.39	0.02	0.02	815	41162		
			13:12:23	35.95	20.02	145.52	0.02	0.02	815	42228		
			13:12:24	35.67	20.02	145.15	0.02	0.02	815	46045		
			13:12:25	35.65	20.02	145.33	0.02	0.02	815	42228		
			13:12:26	35.65	20.02	145.38	0.02	0.02	815	46571		
			13:12:27	35.93	20.01	145.75	0.02	0.02	815	40750		
			13:12:28	35.89	20.01	145.63	0.02	0.02	815	44054		
			13:12:29	36.11	20.01	145.75	0.02	0.02	815	41795		
			13:12:30	35.98	20.01	145.65	0.02	0.02	815	41162		
			13:12:31	35.93	20.01	145.54	18.80	16.49	815	49		
			13:12:32	35.96	20.02	150.40	44.12	39.21	815	21		
			13:12:33	35.84	20.05	152.09	47.77	42.48	815	19		
			13:12:34	36.09	20.08	163.03	42.13	37.42	815	22		
			13:12:35	36.08	20.11	162.71	40.90	36.32	815	22		
			13:12:36	36.02	20.10	162.68	42.32	37.59	815	22		
			13:12:37	35.85	20.15	177.55	41.53	36.88	815	22	30	Measured diffuser port plume at 36 ft
			13:12:38	35.79	20.20	177.58	41.21	36.60	815	22		
			13:12:39	35.79	20.17	165.78	43.18	38.36	815	21		
			13:12:40	35.73	20.08	150.89	19.21	16.86	815	48		
			13:12:41	35.72	20.06	161.17	33.56	29.73	815	27		
			13:12:42	35.71	20.16	178.81	28.16	24.89	815	33		
			13:12:43	35.71	20.19	177.46	30.23	26.74	815	30		
			13:12:44	35.71	20.19	174.04	28.16	24.89	815	33		
			13:12:45	35.75	20.15	165.60	25.25	22.27	815	37		
			13:12:46	35.70	20.09	148.92	20.49	18.01	815	45		
			13:12:47	35.77	20.04	146.54	1.70	1.15	815	709		
			13:12:48	35.71	20.03	145.63	0.02	0.02	815	45028		
			13:12:49	35.73	20.03	145.08	0.02	0.02	815	43583		
			13:12:50	35.71	20.03	144.70	0.02	0.02	815	45531		
			13:12:51	35.74	20.02	144.96	0.02	0.02	815	42670		

**TABLE D-27**

Profile PRO-21 on September 22, 2022 (1307-1319 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

18	Instantaneous Minimum Dilution in Profile
30	Minimum Average Dilution in Profile
54	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:12:52	35.77	20.03	144.98	0.02	0.02	815	42228		
			13:12:53	35.80	20.02	145.04	0.02	0.02	815	42670		
			13:12:54	35.84	20.03	145.00	0.02	0.02	815	45531		
			13:12:55	35.81	20.03	145.02	0.02	0.02	815	38810		
			13:12:56	35.86	20.02	144.94	0.02	0.02	815	40955		
			13:12:57	35.80	20.02	144.96	0.02	0.02	815	42670		
			13:12:58	35.86	20.02	145.01	0.02	0.02	815	42228		
			13:12:59	35.78	20.03	145.08	0.02	0.02	815	41582		
			13:13:00	35.85	20.02	145.23	0.02	0.02	815	45028		
			13:13:01	35.80	20.02	145.32	0.02	0.02	815	42670		
			13:13:02	35.81	20.02	145.25	0.02	0.02	815	40750		
			13:13:03	35.61	20.02	145.27	0.02	0.02	815	43122		
			13:13:04	35.62	20.02	145.21	0.02	0.02	815	41162		
			13:13:05	35.49	20.02	145.35	0.02	0.02	815	44054		
			13:13:06	35.58	20.01	145.42	0.02	0.02	815	47941		
			13:13:07	35.50	20.02	145.04	0.02	0.02	815	44054		
			13:13:08	35.55	20.02	145.15	0.02	0.02	815	42228		
			13:13:09	35.53	20.02	145.38	0.02	0.02	815	39951		
			13:13:10	35.55	20.01	145.59	0.02	0.02	815	41162		
			13:13:11	35.55	20.01	145.71	0.02	0.02	815	41795		
			13:13:12	35.51	20.01	145.71	0.02	0.02	815	42670		
			13:13:13	35.56	20.01	145.82	0.02	0.02	815	45028		
			13:13:14	35.57	20.01	146.61	1.34	0.82	815	991		
			13:13:15	35.52	20.02	148.63	5.98	4.99	815	163		
			13:13:16	35.56	20.02	147.22	7.49	6.34	815	128		
			13:13:17	35.55	20.02	150.99	26.45	23.35	815	35		
			13:13:18	35.60	20.06	160.71	40.51	35.97	815	23		
			13:13:19	35.59	20.09	160.91	7.12	6.01	815	136		
			13:13:20	35.58	20.08	159.34	32.98	29.21	815	28		
			13:13:21	35.77	20.10	164.61	42.53	37.78	815	22	38	Measured diffuser port plume at 36 ft
			13:13:22	35.74	20.11	163.20	36.05	31.96	815	25		
			13:13:23	35.86	20.09	155.43	12.14	10.52	815	77		
			13:13:24	35.83	20.06	156.80	0.62	0.17	815	4665		
			13:13:25	35.89	20.07	157.22	2.55	1.91	815	427		
			13:13:26	35.86	20.08	160.36	16.37	14.31	815	57		
			13:13:27	35.84	20.10	163.81	35.25	31.24	815	26		
			13:13:28	35.84	20.11	164.64	36.23	32.13	815	25		
			13:13:29	35.78	20.12	167.45	42.32	37.59	815	22		
			13:13:30	35.83	20.13	169.62	41.53	36.88	815	22		

**TABLE D-27**

Profile PRO-21 on September 22, 2022 (1307-1319 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

18	Instantaneous Minimum Dilution in Profile
30	Minimum Average Dilution in Profile
54	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:13:31	35.77	20.13	165.86	33.56	29.73	815	27		Measured diffuser port plume at 36 ft
			13:13:32	35.81	20.10	160.84	38.26	33.95	815	24		
			13:13:33	35.81	20.08	157.60	33.83	29.98	815	27	30	
			13:13:34	35.78	20.07	156.44	24.87	21.94	815	37		
			13:13:35	35.79	20.06	155.30	20.09	17.64	815	46		
			13:13:36	35.80	20.08	162.86	38.26	33.95	815	24		
			13:13:37	35.80	20.10	162.22	40.32	35.80	815	23		
			13:13:38	35.79	20.10	164.37	40.72	36.16	815	23		
			13:13:39	35.79	20.11	163.99	29.64	26.21	815	31		
			13:13:40	35.79	20.08	156.46	5.06	4.16	815	196		
			13:13:41	35.86	20.06	154.54	7.72	6.55	815	125		
			13:13:42	35.81	20.04	149.67	0.39	0.39	815	2111		
			13:13:43	35.81	20.02	147.01	0.02	0.02	815	44054		
			13:13:44	35.98	20.01	146.12	0.02	0.02	815	44054		
			13:13:45	36.11	20.00	145.90	0.02	0.02	815	44536		
			13:13:46	36.23	20.00	145.85	0.02	0.02	815	43122		
			13:13:47	36.18	20.00	145.71	0.02	0.02	815	44536		
			13:13:48	36.25	20.01	148.78	10.49	9.04	815	90		
			13:13:49	36.23	20.04	150.78	34.32	30.42	815	27		
			13:13:50	36.23	20.02	148.12	14.25	12.41	815	66		
			13:13:51	36.20	20.03	150.46	1.82	1.26	815	648		
			13:13:52	36.16	20.02	149.14	4.92	4.04	815	202		
			13:13:53	36.18	20.04	156.11	18.83	16.51	815	49		
			13:13:54	36.18	20.06	156.20	23.83	21.01	815	39		
			13:13:55	36.15	20.06	154.04	25.96	22.91	815	36	51	
			13:13:56	36.10	20.05	151.77	20.22	17.76	815	46	Measured diffuser port plume at 36 ft	
			13:13:57	36.12	20.03	148.99	10.98	9.47	815	86		
			13:13:58	36.16	20.02	147.44	5.30	4.38	815	186		
			13:13:59	36.10	20.02	147.05	0.55	0.11	815	7365		
			13:14:00	36.15	20.02	147.34	0.45	0.03	815	27574		
			13:14:01	36.14	20.02	147.36	0.72	0.27	815	3018		
			13:14:02	36.14	20.01	146.34	0.02	0.02	815	42228		
			13:14:03	36.13	20.01	146.51	0.02	0.02	815	41795		
			13:14:04	36.16	20.00	146.07	0.02	0.02	815	45531		
			13:14:05	36.13	20.00	145.99	0.02	0.02	815	42010		
			13:14:06	36.13	20.00	146.02	0.02	0.02	815	42228		
			13:14:07	36.15	20.00	146.12	0.02	0.02	815	43122		
			13:14:08	36.15	20.00	146.08	0.02	0.02	815	41582		
			13:14:09	36.14	20.00	146.12	0.02	0.02	815	43583		

**TABLE D-27**

Profile PRO-21 on September 22, 2022 (1307-1319 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

18	Instantaneous Minimum Dilution in Profile
30	Minimum Average Dilution in Profile
54	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:14:10	36.16	20.01	145.95	0.02	0.02	815	45531		
			13:14:11	36.15	20.01	146.03	0.02	0.02	815	44054		
			13:14:12	36.17	20.01	146.04	0.02	0.02	815	42228		
			13:14:13	36.17	20.01	146.07	0.02	0.02	815	44054		
			13:14:14	36.19	20.01	146.15	0.02	0.02	815	45531		
			13:14:15	36.16	20.01	146.22	0.02	0.02	815	44536		
			13:14:16	36.21	20.01	146.72	0.02	0.02	815	44054		
			13:14:17	36.19	20.01	146.68	0.02	0.02	815	44536		
			13:14:18	36.14	20.01	146.50	0.19	0.19	815	4247		
			13:14:19	36.14	20.01	148.57	3.38	2.65	815	307		
			13:14:20	36.16	20.02	149.04	3.17	2.47	815	330		
			13:14:21	36.16	20.02	147.79	3.17	2.46	815	331		
			13:14:22	36.15	20.01	146.80	6.77	5.69	815	143		
			13:14:23	36.13	20.02	151.58	10.37	8.93	815	91		
			13:14:24	36.19	20.04	152.93	10.65	9.17	815	89		
			13:14:25	36.14	20.04	152.26	7.91	6.72	815	121		
			13:14:26	36.17	20.04	153.01	4.43	3.59	815	227		
			13:14:27	36.17	20.05	154.91	11.83	10.23	815	80		
			13:14:28	36.17	20.05	154.63	15.35	13.39	815	61	71	Measured diffuser port plume at 36 ft
			13:14:29	36.13	20.05	152.93	12.82	11.12	815	73		
			13:14:30	36.17	20.04	151.53	6.07	5.06	815	161		
			13:14:31	36.12	20.04	150.39	5.89	4.91	815	166		
			13:14:32	36.14	20.03	151.80	6.26	5.24	815	156		
			13:14:33	36.16	20.04	153.67	7.55	6.39	815	127		
			13:14:34	36.15	20.05	152.67	6.19	5.17	815	158		
			13:14:35	36.16	20.05	153.30	9.17	7.85	815	104		
			13:14:36	36.15	20.05	152.29	11.65	10.08	815	81		
			13:14:37	36.14	20.04	151.17	13.81	12.01	815	68		
			13:14:38	36.18	20.03	149.76	13.90	12.10	815	67		
			13:14:39	36.19	20.03	151.48	18.51	16.23	815	50	65	Measured diffuser port plume at 36 ft
			13:14:40	36.16	20.05	155.54	19.92	17.50	815	47		
			13:14:41	36.12	20.07	155.53	12.25	10.61	815	77		
			13:14:42	36.17	20.06	156.37	9.39	8.05	815	101		
			13:14:43	36.12	20.08	156.94	16.21	14.16	815	58		
			13:14:44	36.13	20.08	157.89	17.80	15.59	815	52		
			13:14:45	36.14	20.08	156.55	11.21	9.68	815	84		
			13:14:46	36.14	20.08	158.97	25.30	22.32	815	37		
			13:14:47	36.21	20.09	161.58	31.89	28.23	815	29		
			13:14:48	36.18	20.10	162.71	37.93	33.65	815	24		



**TABLE D-27**

Profile PRO-21 on September 22, 2022 (1307-1319 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

18	Instantaneous Minimum Dilution in Profile
30	Minimum Average Dilution in Profile
54	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:14:49	36.18	20.11	163.10	34.53	30.60	815	27		
			13:14:50	36.19	20.10	158.24	28.21	24.94	815	33		
			13:14:51	36.20	20.07	153.97	22.09	19.44	815	42		
			13:14:52	36.17	20.06	155.66	15.45	13.48	815	60		
			13:14:53	36.20	20.08	158.58	42.87	38.08	815	21		
			13:14:54	36.18	20.08	159.00	49.58	44.10	815	18		
			13:14:55	36.11	20.09	159.22	45.98	40.88	815	20	33	Measured diffuser port plume at 36 ft
			13:14:56	36.16	20.08	157.85	41.21	36.60	815	22		
			13:14:57	36.14	20.09	160.65	43.18	38.36	815	21		
			13:14:58	36.15	20.12	169.05	33.83	29.98	815	27		
			13:14:59	36.19	20.15	171.06	24.87	21.94	815	37		
			13:15:00	36.16	20.15	171.43	20.09	17.64	815	46		
			13:15:01	36.22	20.15	170.54	41.21	36.60	815	22		
			13:15:02	36.26	20.14	167.41	43.18	38.36	815	21		
			13:15:03	36.13	20.13	167.68	33.83	29.98	815	27		
			13:15:04	36.17	20.13	167.44	24.87	21.94	815	37		
			13:15:05	36.10	20.13	165.23	20.09	17.64	815	46		
			13:15:06	36.08	20.11	164.82	38.26	33.95	815	24		
			13:15:07	36.01	20.12	166.39	47.60	42.33	815	19		
			13:15:08	36.09	20.12	165.45	41.21	36.60	815	22		
			13:15:09	36.05	20.12	164.23	43.18	38.36	815	21		
			13:15:10	36.04	20.11	165.47	33.83	29.98	815	27		
			13:15:11	36.03	20.12	163.10	24.87	21.94	815	37		
			13:15:12	35.95	20.10	162.22	41.21	36.60	815	22		
			13:15:13	36.00	20.11	165.25	43.18	38.36	815	21		
			13:15:14	35.96	20.12	164.14	33.83	29.98	815	27		
			13:15:15	36.01	20.10	159.64	24.87	21.94	815	37		
			13:15:16	35.96	20.09	159.81	20.09	17.64	815	46		
			13:15:17	35.92	20.09	158.57	0.66	0.22	815	3778		
			13:15:18	35.87	20.06	150.67	0.66	0.22	815	3778		
			13:15:19	35.99	20.03	147.06	0.02	0.02	815	41162		
			13:15:20	36.03	20.02	145.87	0.02	0.02	815	44054		
			13:15:21	36.01	20.02	145.42	0.02	0.02	815	47110		
			13:15:22	35.96	20.02	145.32	0.02	0.02	815	44536		
			13:15:23	36.03	20.02	145.23	0.02	0.02	815	43122		
			13:15:24	36.06	20.02	145.21	0.02	0.02	815	45531		
			13:15:25	35.98	20.02	145.21	0.02	0.02	815	44536		
			13:15:26	36.00	20.02	145.17	0.02	0.02	815	43583		
			13:15:27	36.05	20.02	145.19	0.02	0.02	815	44054		

**TABLE D-27**

Profile PRO-21 on September 22, 2022 (1307-1319 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

18	Instantaneous Minimum Dilution in Profile
30	Minimum Average Dilution in Profile
54	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:15:28	35.99	20.02	145.09	0.02	0.02	815	42228		
			13:15:29	36.03	20.02	145.04	0.02	0.02	815	44054		
			13:15:30	36.08	20.01	145.02	0.02	0.02	815	40750		
			13:15:31	36.01	20.01	144.89	0.02	0.02	815	46045		
			13:15:32	36.17	20.01	144.89	0.02	0.02	815	46045		
			13:15:33	36.18	20.02	145.04	0.02	0.02	815	41371		
			13:15:34	36.17	20.02	144.98	0.02	0.02	815	47110		
			13:15:35	36.08	20.02	144.95	0.02	0.02	815	46045		
			13:15:36	36.40	20.02	144.98	0.02	0.02	815	43122		
			13:15:37	36.55	20.02	144.98	0.02	0.02	815	41162		
			13:15:38	37.13	20.02	145.13	0.02	0.02	815	42228		
			13:15:39	40.05	20.02	145.17	0.02	0.02	815	42228		
			13:15:40	41.44	20.02	145.15	0.02	0.02	815	44054		
			13:15:41	41.77	20.02	145.18	0.02	0.02	815	39951		
			13:15:42	41.85	20.02	145.13	0.02	0.02	815	41582		
			13:15:43	41.92	20.02	145.02	0.02	0.02	815	44054		
			13:15:44	41.90	20.02	144.98	0.02	0.02	815	40750		
			13:15:45	41.88	20.02	145.08	0.02	0.02	815	42228		
			13:15:46	41.87	20.01	145.43	0.02	0.02	815	41162		
			13:15:47	41.79	20.03	149.64	5.55	4.60	815	177		
			13:15:48	41.84	20.04	150.24	11.19	9.66	815	84		
			13:15:49	41.79	20.05	153.85	14.96	13.04	815	63		
			13:15:50	41.84	20.06	154.42	11.23	9.70	815	84		
			13:15:51	41.76	20.05	151.01	4.01	3.22	815	253		
			13:15:52	41.80	20.04	149.71	3.20	2.50	815	326		
			13:15:53	41.81	20.03	148.46	5.46	4.52	815	180		
			13:15:54	41.85	20.04	151.45	4.63	3.77	815	216		
			13:15:55	41.77	20.04	149.93	5.06	4.17	815	196		
			13:15:56	41.83	20.03	148.98	1.22	0.72	815	1140		
			13:15:57	41.83	20.03	148.92	0.02	0.02	815	36878		
			13:15:58	41.85	20.03	150.96	7.00	5.90	815	138		
			13:15:59	41.84	20.03	149.46	12.84	11.15	815	73		
			13:16:00	41.86	20.03	148.35	10.65	9.18	815	89		
			13:16:01	41.84	20.02	148.28	9.36	8.02	815	102		
			13:16:02	41.85	20.03	150.77	8.33	7.09	815	115		
			13:16:03	41.83	20.04	151.18	9.53	8.17	815	100		
			13:16:04	41.79	20.04	150.73	9.77	8.38	815	97		
			13:16:05	41.80	20.03	150.07	10.60	9.13	815	89		
			13:16:06	41.83	20.03	149.91	9.13	7.81	815	104		

**TABLE D-27**

Profile PRO-21 on September 22, 2022 (1307-1319 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

18	Instantaneous Minimum Dilution in Profile
30	Minimum Average Dilution in Profile
54	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:16:07	41.82	20.03	149.86	9.84	8.45	815	96		Measured diffuser port plume at 41 ft
			13:16:08	41.82	20.03	149.75	10.60	9.14	815	89	95	
			13:16:09	41.82	20.03	149.89	10.35	8.90	815	92		
			13:16:10	41.85	20.03	150.22	7.91	6.72	815	121		
			13:16:11	41.86	20.04	152.83	5.50	4.55	815	179		
			13:16:12	41.85	20.05	154.17	7.59	6.43	815	127		
			13:16:13	41.86	20.05	153.68	10.42	8.97	815	91		Measured diffuser port plume at 42 ft
			13:16:14	41.83	20.05	155.07	14.19	12.35	815	66		
			13:16:15	41.84	20.06	155.62	17.60	15.41	815	53		
			13:16:16	41.85	20.06	154.80	20.18	17.73	815	46		
			13:16:17	41.84	20.05	153.52	19.73	17.32	815	47	65	
			13:16:18	41.80	20.05	152.89	18.37	16.10	815	51		
			13:16:19	41.89	20.05	151.96	16.19	14.15	815	58		
			13:16:20	41.81	20.04	149.99	11.48	9.92	815	82		
			13:16:21	41.86	20.03	149.31	10.24	8.81	815	93		
			13:16:22	41.84	20.02	148.08	6.21	5.19	815	157		
			13:16:23	41.92	20.02	147.46	2.99	2.31	815	353		
			13:16:24	41.83	20.01	146.95	3.44	2.70	815	301		
			13:16:25	41.87	20.01	146.71	1.51	0.97	815	838		
			13:16:26	41.85	20.01	146.47	0.02	0.02	815	42010		
			13:16:27	41.93	20.01	146.21	0.02	0.02	815	47384		
			13:16:28	41.87	20.01	146.07	0.02	0.02	815	46307		
			13:16:29	41.89	20.01	145.99	0.02	0.02	815	47941		
			13:16:30	41.85	20.01	145.88	0.02	0.02	815	46045		
			13:16:31	41.91	20.01	145.86	0.02	0.02	815	42228		
			13:16:32	41.92	20.01	145.89	0.02	0.02	815	42670		
			13:16:33	41.86	20.01	145.99	0.02	0.02	815	47110		
			13:16:34	41.84	20.01	145.95	0.02	0.02	815	42895		
			13:16:35	41.87	20.01	145.90	0.02	0.02	815	43122		
			13:16:36	41.90	20.01	145.97	0.02	0.02	815	43122		
			13:16:37	41.88	20.01	145.92	0.02	0.02	815	46045		
			13:16:38	41.88	20.01	145.86	0.02	0.02	815	43122		
			13:16:39	41.85	20.01	145.79	0.02	0.02	815	40347		
			13:16:40	41.87	20.01	146.95	0.02	0.02	815	41795		
			13:16:41	41.83	20.02	148.35	0.02	0.02	815	44536		
			13:16:42	41.90	20.03	148.13	0.02	0.02	815	43583		
			13:16:43	41.88	20.02	147.45	0.47	0.04	815	19945		
			13:16:44	41.86	20.02	147.36	0.50	0.07	815	11406		
			13:16:45	41.87	20.02	148.01	2.28	1.66	815	490		

**TABLE D-27**

Profile PRO-21 on September 22, 2022 (1307-1319 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

18	Instantaneous Minimum Dilution in Profile
30	Minimum Average Dilution in Profile
54	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:16:46	41.86	20.03	147.96	3.76	3.00	815	272		Measured diffuser port plume at 42 ft
			13:16:47	41.87	20.02	147.45	3.52	2.78	815	293		
			13:16:48	41.88	20.02	146.95	1.64	1.09	815	748		
			13:16:49	41.87	20.01	146.32	0.14	0.14	815	5855		
			13:16:50	41.84	20.01	146.04	0.02	0.02	815	41795		
			13:16:51	41.92	20.01	145.80	0.02	0.02	815	45028		
			13:16:52	41.88	20.01	145.61	0.02	0.02	815	42670		
			13:16:53	41.89	20.01	145.56	0.02	0.02	815	44054		
			13:16:54	41.86	20.01	145.52	0.02	0.02	815	42228		
			13:16:55	41.90	20.01	145.59	0.02	0.02	815	43122		
			13:16:56	41.91	20.01	145.59	0.02	0.02	815	44054		
			13:16:57	41.92	20.01	145.69	0.51	0.08	815	9945		
			13:16:58	41.90	20.01	147.87	13.76	11.96	815	68		
			13:16:59	41.90	20.04	152.42	33.04	29.26	815	28	60	
			13:17:00	41.90	20.04	150.87	20.09	17.64	815	46		
			13:17:01	41.91	20.04	150.40	9.69	8.32	815	98		
			13:17:02	41.91	20.03	149.34	4.14	3.33	815	244		
			13:17:03	41.93	20.02	148.01	4.80	3.93	815	207		
			13:17:04	41.84	20.02	146.71	6.39	5.36	815	152		
			13:17:05	41.97	20.01	146.23	1.33	0.81	815	1005		
			13:17:06	41.88	20.01	146.26	0.02	0.02	815	44054		
			13:17:07	41.92	20.01	146.06	0.02	0.02	815	44536		
			13:17:08	41.84	20.01	146.17	0.02	0.02	815	42670		
			13:17:09	41.78	20.01	146.04	0.02	0.02	815	45028		
			13:17:10	41.73	20.01	146.15	0.02	0.02	815	45531		
			13:17:11	41.74	20.01	146.26	0.02	0.02	815	46307		
			13:17:12	41.78	20.01	146.14	0.02	0.02	815	41795		
			13:17:13	41.77	20.01	146.14	0.02	0.02	815	41795		
			13:17:14	41.74	20.01	146.10	0.02	0.02	815	42228		
			13:17:15	41.74	20.01	146.18	1.02	0.54	815	1523		
			13:17:16	41.74	20.01	146.04	0.35	0.35	815	2302		
			13:17:17	41.75	20.01	146.01	0.02	0.02	815	46045		
			13:17:18	41.74	20.01	145.99	0.02	0.02	815	42228		
			13:17:19	41.72	20.01	145.95	0.02	0.02	815	43122		
			13:17:20	41.75	20.01	145.92	0.02	0.02	815	41582		
			13:17:21	41.72	20.01	145.88	0.02	0.02	815	45028		
			13:17:22	41.73	20.01	145.92	0.02	0.02	815	45531		
			13:17:23	41.75	20.01	145.88	0.02	0.02	815	46571		
			13:17:24	41.76	20.01	145.92	0.02	0.02	815	44054		

**TABLE D-27**

Profile PRO-21 on September 22, 2022 (1307-1319 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

18	Instantaneous Minimum Dilution in Profile
30	Minimum Average Dilution in Profile
54	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:17:25	41.76	20.01	145.87	0.02	0.02	815	44536		
			13:17:26	41.74	20.01	145.88	0.02	0.02	815	45028		
			13:17:27	41.72	20.01	145.88	0.02	0.02	815	44536		
			13:17:28	41.74	20.00	145.92	0.02	0.02	815	45028		
			13:17:29	41.75	20.00	145.88	0.02	0.02	815	46307		
			13:17:30	41.80	20.00	145.88	0.02	0.02	815	42228		
			13:17:31	41.79	20.00	145.93	0.02	0.02	815	42010		
			13:17:32	41.76	20.00	145.92	0.02	0.02	815	44536		
			13:17:33	41.75	20.00	145.92	0.02	0.02	815	49096		
			13:17:34	41.73	20.01	145.86	0.02	0.02	815	46045		
			13:17:35	41.78	20.01	145.78	0.02	0.02	815	44536		
			13:17:36	41.75	20.01	145.75	0.02	0.02	815	41162		
			13:17:37	41.74	20.01	145.81	0.02	0.02	815	45531		
			13:17:38	41.73	20.01	146.50	0.02	0.02	815	43583		
			13:17:39	41.77	20.01	146.02	0.02	0.02	815	46045		
			13:17:40	41.68	20.01	145.88	0.02	0.02	815	47941		
			13:17:41	41.79	20.01	146.18	0.02	0.02	815	43583		
			13:17:42	41.84	20.01	146.57	0.02	0.02	815	46839		
			13:17:43	41.87	20.01	148.26	1.25	0.74	815	1094		
			13:17:44	41.90	20.02	149.08	2.05	1.46	815	559		
			13:17:45	42.10	20.02	148.18	3.11	2.41	815	338		
			13:17:46	43.10	20.01	146.00	2.38	1.76	815	464		
			13:17:47	43.99	20.00	145.92	0.02	0.02	815	45028		
			13:17:48	44.17	20.00	146.02	0.02	0.02	815	45028		
			13:17:49	44.24	20.00	145.92	0.02	0.02	815	44054		
			13:17:50	44.24	20.00	146.07	0.02	0.02	815	46571		
			13:17:51	44.24	20.00	146.02	0.02	0.02	815	41162		
			13:17:52	44.19	20.00	146.05	0.02	0.02	815	45028		
			13:17:53	44.22	20.00	146.01	0.02	0.02	815	46045		
			13:17:54	44.19	20.00	145.92	0.02	0.02	815	41162		
			13:17:55	44.20	20.00	145.97	0.02	0.02	815	43583		
			13:17:56	44.21	20.01	145.90	0.02	0.02	815	48512		
			13:17:57	44.24	20.01	145.86	0.02	0.02	815	45028		
			13:17:58	44.22	20.01	145.81	0.02	0.02	815	46307		
			13:17:59	44.21	20.01	145.73	0.02	0.02	815	39951		
			13:18:00	44.18	20.01	145.65	0.02	0.02	815	45531		
			13:18:01	44.21	20.01	145.65	0.02	0.02	815	47384		
			13:18:02	44.13	20.01	145.61	0.02	0.02	815	40955		
			13:18:03	44.20	20.01	145.59	0.02	0.02	815	43122		

**TABLE D-27**

Profile PRO-21 on September 22, 2022 (1307-1319 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

18	Instantaneous Minimum Dilution in Profile
30	Minimum Average Dilution in Profile
54	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured	Calibration-	Measured	Instant. Minimum	Minimum Plume Avg. Dilution	Measurement Observations
							Dye Conc. (ppb)	Corrected Dye Conc. (ppb)	Initial Dye Conc. (ppb)			
			13:18:04	44.17	20.01	145.67	0.02	0.02	815	43583		
			13:18:05	44.14	20.01	145.63	0.02	0.02	815	41795		
			13:18:06	44.10	20.01	145.67	0.02	0.02	815	40347		
			13:18:07	44.17	20.01	145.63	0.02	0.02	815	42670		
			13:18:08	44.15	20.01	145.71	0.02	0.02	815	46045		
			13:18:09	44.19	20.01	145.71	0.02	0.02	815	40750		
			13:18:10	44.19	20.01	145.69	0.02	0.02	815	41795		
			13:18:11	44.16	20.01	145.59	0.02	0.02	815	46307		
			13:18:12	44.15	20.01	145.59	0.02	0.02	815	39951		
			13:18:13	44.17	20.01	145.61	0.02	0.02	815	43122		
			13:18:14	44.16	20.01	145.59	0.02	0.02	815	46307		
			13:18:15	44.15	20.01	145.65	0.02	0.02	815	44054		
			13:18:16	44.16	20.01	145.67	0.02	0.02	815	46839		
			13:18:17	44.16	20.01	145.69	0.02	0.02	815	43583		
			13:18:18	44.18	20.01	145.71	0.02	0.02	815	46571		
			13:18:19	44.15	20.01	145.73	0.02	0.02	815	45278		
			13:18:20	44.12	20.01	145.78	0.02	0.02	815	46839		
			13:18:21	44.15	20.01	145.80	0.02	0.02	815	39563		
			13:18:22	44.19	20.01	145.84	0.02	0.02	815	43583		
			13:18:23	44.17	20.01	145.75	0.02	0.02	815	47941		
			13:18:24	44.20	20.01	145.75	0.02	0.02	815	44536		
			13:18:25	44.18	20.01	145.75	0.02	0.02	815	43583		
			13:18:26	44.17	20.01	145.73	0.02	0.02	815	45531		
			13:18:27	44.18	20.01	145.65	0.02	0.02	815	46307		
			13:18:28	44.17	20.01	145.71	0.02	0.02	815	42670		
			13:18:29	44.18	20.01	145.75	0.02	0.02	815	40347		
			13:18:30	44.18	20.01	145.75	0.02	0.02	815	45028		
			13:18:31	44.20	20.01	145.85	0.02	0.02	815	44054		
			13:18:32	44.28	20.01	145.78	0.02	0.02	815	44536		
			13:18:33	44.27	20.01	145.78	0.02	0.02	815	42670		
			13:18:34	44.26	20.01	145.82	0.02	0.02	815	45028		
			13:18:35	44.22	20.01	145.84	0.02	0.02	815	41795		
			13:18:36	44.26	20.01	145.82	0.02	0.02	815	44054		
			13:18:37	44.23	20.01	145.84	0.02	0.02	815	42228		
			13:18:38	44.24	20.01	145.81	0.02	0.02	815	45531		
			13:18:39	44.26	20.01	145.73	0.02	0.02	815	45028		
			13:18:40	44.26	20.01	145.67	0.02	0.02	815	45028		
			13:18:41	44.23	20.01	145.71	0.02	0.02	815	49096		
			13:18:42	44.25	20.01	145.80	0.02	0.02	815	44054		

**TABLE D-27**

Profile PRO-21 on September 22, 2022 (1307-1319 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

18	Instantaneous Minimum Dilution in Profile
30	Minimum Average Dilution in Profile
54	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:18:43	44.17	20.01	145.75	0.02	0.02	815	47384		
			13:18:44	44.28	20.01	145.68	0.02	0.02	815	41582		
			13:18:45	44.15	20.01	145.71	0.02	0.02	815	41795		
			13:18:46	44.31	20.01	145.63	0.02	0.02	815	44536		
			13:18:47	44.15	20.01	145.65	0.02	0.02	815	42670		
			13:18:48	44.32	20.01	145.63	0.02	0.02	815	42228		
			13:18:49	44.17	20.01	145.63	0.02	0.02	815	50938		
			13:18:50	44.24	20.01	145.65	0.02	0.02	815	42228		
			13:18:51	44.23	20.01	145.63	0.02	0.02	815	46571		
			13:18:52	44.26	20.01	145.63	0.02	0.02	815	42010		
			13:18:53	44.22	20.01	145.63	0.02	0.02	815	44536		
			13:18:54	44.29	20.01	145.61	0.02	0.02	815	49695		
			13:18:55	44.21	20.01	145.54	0.02	0.02	815	47110		
			13:18:56	44.22	20.01	145.52	0.02	0.02	815	42448		
			13:18:57	44.23	20.01	145.48	0.02	0.02	815	42010		
			13:18:58	44.25	20.01	145.46	0.02	0.02	815	45531		
			13:18:59	44.23	20.01	145.46	0.02	0.02	815	44054		
			13:19:00	44.26	20.01	145.48	0.02	0.02	815	47110		
			13:19:01	44.19	20.01	145.37	0.02	0.02	815	46045		
			13:19:02	44.26	20.01	145.41	0.02	0.02	815	42670		
			13:19:03	44.27	20.01	144.96	0.02	0.02	815	47384		
			13:19:04	44.22	20.02	145.06	0.02	0.02	815	44054		
			13:19:05	44.24	20.01	145.26	0.02	0.02	815	42670		
			13:19:06	44.23	20.01	145.33	0.02	0.02	815	44054		
			13:19:07	44.22	20.01	145.33	0.02	0.02	815	43583		
			13:19:08	44.23	20.01	145.31	0.02	0.02	815	45531		
			13:19:09	44.26	20.01	145.25	0.02	0.02	815	45531		
			13:19:10	44.24	20.02	145.15	0.02	0.02	815	46839		
			13:19:11	44.19	20.02	145.04	0.02	0.02	815	45028		
			13:19:12	44.28	20.02	144.98	0.02	0.02	815	41371		
			13:19:13	44.17	20.02	144.87	0.02	0.02	815	44054		
			13:19:14	44.18	20.02	144.89	0.02	0.02	815	43583		
			13:19:15	44.16	20.02	144.94	0.02	0.02	815	41371		
			13:19:16	44.19	20.02	145.02	0.02	0.02	815	42010		
			13:19:17	44.20	20.02	145.13	0.02	0.02	815	45028		
			13:19:18	44.26	20.02	145.14	0.02	0.02	815	39951		
			13:19:19	44.24	20.02	145.32	0.02	0.02	815	42228		
			13:19:20	44.24	20.01	145.52	0.02	0.02	815	44536		
			13:19:21	44.23	20.01	145.63	0.02	0.02	815	41582		

**TABLE D-27**

Profile PRO-21 on September 22, 2022 (1307-1319 hours PDT) located at North Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

18	Instantaneous Minimum Dilution in Profile
30	Minimum Average Dilution in Profile
54	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:19:22	44.22	20.01	145.65	0.02	0.02	815	44536		
			13:19:23	44.21	20.01	145.80	0.02	0.02	815	47384		
			13:19:24	44.23	20.01	145.73	0.02	0.02	815	44054		
			13:19:25	44.21	20.01	145.77	0.02	0.02	815	44054		
			13:19:26	44.24	20.01	145.80	0.02	0.02	815	46307		
			13:19:27	44.08	20.01	145.82	0.02	0.02	815	47661		
			13:19:28	44.12	20.01	145.80	0.02	0.02	815	42895		
			13:19:29	44.05	20.01	145.99	0.02	0.02	815	44054		
			13:19:30	44.13	20.01	146.14	0.02	0.02	815	45278		
			13:19:31	44.17	20.01	146.35	0.02	0.02	815	45028		
			13:19:32	44.18	20.01	146.28	0.02	0.02	815	42010		
			13:19:33	44.21	20.01	145.99	0.02	0.02	815	45028		
			13:19:34	44.12	20.01	145.65	0.02	0.02	815	39951		



**TABLE D-28**

Profile PRO-22 on September 22, 2022 (1326-1337 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

113	Instantaneous Minimum Dilution in Profile
146	Minimum Average Dilution in Profile
168	Plume Average Dilution Detected
942	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-22 (North Mixing Zone Boundary - 242 ft from Diffuser)	48 ft	0.12 m/sec 354 deg. (mag.) Late Ebb Tide	13:26:37	2.39	20.02	144.65	0.02	0.02	843	45080	No plume detected near surface	
			13:26:38	2.41	20.01	144.83	0.02	0.02	843	39764		
			13:26:39	2.45	20.01	144.91	0.02	0.02	843	39393		
			13:26:40	2.39	20.02	144.91	0.07	0.07	843	11974		
			13:26:41	2.35	20.02	144.89	0.02	0.02	843	44603		
			13:26:42	2.48	20.02	144.86	0.02	0.02	843	43231		
			13:26:43	2.43	20.01	144.84	0.02	0.02	843	44603		
			13:26:44	2.46	20.01	144.89	0.02	0.02	843	45080		
			13:26:45	2.47	19.99	144.96	0.02	0.02	843	47898		
			13:26:46	2.48	20.00	144.87	0.02	0.02	843	45568		
			13:26:47	2.38	20.01	145.00	0.02	0.02	843	45080		
			13:26:48	2.21	20.02	144.94	0.02	0.02	843	50179		
			13:26:49	2.11	20.02	145.00	0.02	0.02	843	43231		
			13:26:50	2.17	20.02	144.96	0.02	0.02	843	43454		
			13:26:51	2.10	20.02	144.94	0.02	0.02	843	46066		
			13:26:52	2.13	20.01	144.91	0.02	0.02	843	47095		
			13:26:53	2.11	20.03	144.87	0.02	0.02	843	42150		
			13:26:54	2.10	20.02	144.79	0.02	0.02	843	43679		
			13:26:55	2.10	20.02	144.81	0.02	0.02	843	44136		
			13:26:56	2.11	20.02	144.73	0.02	0.02	843	44603		
			13:26:57	2.16	20.02	144.77	0.02	0.02	843	46066		
			13:26:58	2.11	20.01	144.68	0.02	0.02	843	47360		
			13:26:59	2.11	20.01	144.67	0.02	0.02	843	45568		
			13:27:00	2.13	20.01	144.63	0.02	0.02	843	43679		
			13:27:01	2.13	20.01	144.61	0.02	0.02	843	45568		
			13:27:02	2.12	20.01	144.52	0.02	0.02	843	46066		
			13:27:03	2.10	20.00	144.50	0.02	0.02	843	42362		
			13:27:04	2.14	20.00	144.43	0.02	0.02	843	42150		
13:27:05	2.14	19.99	144.48	0.02	0.02	843	43679					
13:27:06	2.13	19.99	144.46	0.02	0.02	843	42792					
13:27:07	2.15	19.98	144.52	0.02	0.02	843	44603					
13:27:08	2.38	20.00	144.67	0.02	0.02	843	49012					
13:27:09	2.46	20.02	144.56	0.02	0.02	843	45568					
13:27:10	2.46	20.01	144.52	0.02	0.02	843	45568					
13:27:11	2.47	19.94	144.60	0.02	0.02	843	44603					
13:27:12	2.65	19.98	144.48	0.02	0.02	843	45568					
13:27:13	2.87	20.03	144.20	0.03	0.03	843	30000					
13:27:14	4.13	20.05	144.41	0.02	0.02	843	47360					

**TABLE D-28**

Profile PRO-22 on September 22, 2022 (1326-1337 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

113	Instantaneous Minimum Dilution in Profile
146	Minimum Average Dilution in Profile
168	Plume Average Dilution Detected
942	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:27:15	7.16	20.06	145.08	0.02	0.02	843	46833		No plume detected at 7-8 ft
			13:27:16	7.83	20.04	144.98	0.02	0.02	843	45080		
			13:27:17	7.99	20.03	144.94	0.02	0.02	843	43231		
			13:27:18	8.03	20.03	144.98	0.02	0.02	843	42792		
			13:27:19	8.03	20.04	145.06	0.02	0.02	843	47095		
			13:27:20	7.88	20.04	145.19	0.02	0.02	843	46066		
			13:27:21	7.80	20.04	145.17	0.02	0.02	843	47898		
			13:27:22	7.70	20.05	144.96	0.02	0.02	843	46066		
			13:27:23	7.73	20.05	144.43	0.02	0.02	843	47360		
			13:27:24	7.69	20.05	144.70	0.02	0.02	843	42576		
			13:27:25	7.71	20.05	144.91	0.02	0.02	843	44136		
			13:27:26	7.71	20.05	144.91	0.02	0.02	843	44136		
			13:27:27	7.70	20.05	145.08	0.02	0.02	843	42792		
			13:27:28	7.67	20.05	145.22	0.02	0.02	843	45568		
			13:27:29	7.70	20.05	145.25	0.02	0.02	843	49298		
			13:27:30	7.69	20.04	145.21	0.02	0.02	843	45080		
			13:27:31	7.72	20.05	144.91	0.02	0.02	843	45568		
			13:27:32	7.70	20.05	144.03	0.02	0.02	843	45080		
			13:27:33	7.70	20.06	141.72	0.02	0.02	843	45080		
			13:27:34	7.71	20.06	140.48	0.02	0.02	843	47627		
			13:27:35	7.63	20.07	140.92	0.02	0.02	843	45568		
			13:27:36	7.69	20.07	141.24	0.02	0.02	843	40922		
			13:27:37	7.70	20.08	139.85	0.02	0.02	843	46575		
			13:27:38	7.78	20.08	140.72	0.02	0.02	843	42150		
			13:27:39	7.95	20.08	141.46	0.02	0.02	843	50783		
			13:27:40	8.05	20.07	141.01	0.02	0.02	843	47095		
			13:27:41	8.20	20.06	139.62	0.02	0.02	843	47095		
			13:27:42	8.83	20.07	140.11	0.02	0.02	843	46833		
			13:27:43	11.67	20.07	144.19	0.02	0.02	843	43679		
			13:27:44	13.32	20.04	145.29	0.02	0.02	843	47095		
			13:27:45	13.66	20.04	145.04	0.02	0.02	843	45568	No plume detected at 13-14 ft	
			13:27:46	13.67	20.04	145.08	0.02	0.02	843	43906		
			13:27:47	13.75	20.04	145.13	0.02	0.02	843	48448		
			13:27:48	13.74	20.04	145.42	0.02	0.02	843	48448		
			13:27:49	13.66	20.04	145.65	0.02	0.02	843	42792		
			13:27:50	13.67	20.03	145.86	0.02	0.02	843	49298		
			13:27:51	13.64	20.03	146.06	0.02	0.02	843	45568		
			13:27:52	13.59	20.03	146.19	0.02	0.02	843	42362		

**TABLE D-28**

Profile PRO-22 on September 22, 2022 (1326-1337 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

113	Instantaneous Minimum Dilution in Profile
146	Minimum Average Dilution in Profile
168	Plume Average Dilution Detected
942	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:27:53	13.56	20.03	146.14	0.02	0.02	843	50783		
			13:27:54	13.52	20.03	145.90	0.02	0.02	843	45568		
			13:27:55	13.61	20.03	145.73	0.02	0.02	843	44136		
			13:27:56	13.69	20.04	145.42	0.02	0.02	843	42792		
			13:27:57	13.69	20.04	145.35	0.02	0.02	843	43679		
			13:27:58	13.78	20.04	145.65	0.02	0.02	843	42362		
			13:27:59	13.66	20.04	145.63	0.02	0.02	843	49588		
			13:28:00	13.68	20.04	145.73	0.02	0.02	843	48171		
			13:28:01	13.58	20.04	145.31	0.02	0.02	843	46066		
			13:28:02	13.48	20.04	145.16	0.02	0.02	843	43454		
			13:28:03	13.43	20.05	144.87	0.02	0.02	843	42792		
			13:28:04	13.52	20.05	144.96	0.02	0.02	843	43231		
			13:28:05	13.57	20.05	145.00	0.02	0.02	843	45568		
			13:28:06	13.58	20.05	144.91	0.02	0.02	843	44603		
			13:28:07	13.65	20.05	144.98	0.02	0.02	843	47095		
			13:28:08	13.60	20.05	144.91	0.02	0.02	843	46066		
			13:28:09	13.78	20.05	145.13	0.02	0.02	843	45080		
			13:28:10	14.07	20.04	145.54	0.02	0.02	843	44136		
			13:28:11	16.61	20.04	146.22	0.87	0.40	843	2113	2414	Plume traces detected at 19 ft
			13:28:12	19.40	20.03	146.43	0.31	0.31	843	2715		
			13:28:13	19.93	20.03	146.30	0.02	0.02	843	43231		
			13:28:14	20.02	20.03	146.28	0.35	0.35	843	2441	2260	Plume traces detected at 19 ft
			13:28:15	20.01	20.03	146.40	0.87	0.41	843	2079		
			13:28:16	20.03	20.03	146.30	0.05	0.05	843	15966		
			13:28:17	19.98	20.03	146.20	0.02	0.02	843	47360		
			13:28:18	20.01	20.03	145.80	0.02	0.02	843	42150		
			13:28:19	19.88	20.03	145.65	0.02	0.02	843	47095		
			13:28:20	19.95	20.03	145.39	0.02	0.02	843	43454		
			13:28:21	19.88	20.03	145.63	0.02	0.02	843	48728		
			13:28:22	19.98	20.03	145.42	0.02	0.02	843	41733		
			13:28:23	19.90	20.03	145.52	0.02	0.02	843	47627		
			13:28:24	19.92	20.03	145.27	0.02	0.02	843	43231		
			13:28:25	19.95	20.04	145.65	0.02	0.02	843	47627		
			13:28:26	19.91	20.03	145.82	0.02	0.02	843	44136		
			13:28:27	19.95	20.03	145.50	0.02	0.02	843	42150		
			13:28:28	19.95	20.03	145.32	0.02	0.02	843	47627		
			13:28:29	19.95	20.03	145.42	0.02	0.02	843	46575		
			13:28:30	19.95	20.03	145.92	0.02	0.02	843	44136		

**TABLE D-28**

Profile PRO-22 on September 22, 2022 (1326-1337 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

113	Instantaneous Minimum Dilution in Profile
146	Minimum Average Dilution in Profile
168	Plume Average Dilution Detected
942	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:28:31	19.88	20.03	146.00	0.02	0.02	843	44603		Plume traces detected at 19 ft
			13:28:32	19.93	20.03	146.16	0.02	0.02	843	42792		
			13:28:33	19.86	20.03	146.37	0.02	0.02	843	45080		
			13:28:34	19.86	20.03	146.95	0.24	0.24	843	3491	2455	
			13:28:35	19.86	20.03	147.03	0.71	0.26	843	3226		
			13:28:36	19.83	20.03	147.10	0.91	0.44	843	1931		
			13:28:37	19.88	20.03	147.12	1.03	0.54	843	1550		
			13:28:38	19.83	20.03	147.14	0.87	0.41	843	2075		
			13:28:39	19.83	20.03	147.20	0.46	0.04	843	22948		
			13:28:40	19.85	20.03	147.47	1.17	0.67	843	1259		
			13:28:41	19.86	20.04	147.65	1.85	1.28	843	657	649	Plume traces detected at 19 ft
			13:28:42	19.84	20.04	147.41	2.58	1.94	843	435		
			13:28:43	19.94	20.03	147.18	2.75	2.09	843	403		
			13:28:44	19.91	20.03	147.01	1.63	1.08	843	780		
			13:28:45	19.91	20.03	146.99	1.47	0.94	843	895		
			13:28:46	19.86	20.03	146.78	1.71	1.16	843	727		
			13:28:47	19.88	20.03	146.26	0.39	0.39	843	2140		
			13:28:48	19.86	20.04	145.54	0.02	0.02	843	45568		
			13:28:49	19.85	20.04	145.30	0.02	0.02	843	40529		
			13:28:50	19.86	20.04	145.32	0.02	0.02	843	45568		
			13:28:51	19.91	20.04	145.17	0.02	0.02	843	43010		
			13:28:52	19.90	20.04	145.08	0.02	0.02	843	46575		
			13:28:53	19.89	20.04	145.11	0.02	0.02	843	42150		
			13:28:54	19.90	20.04	145.17	0.02	0.02	843	47095		
			13:28:55	19.89	20.04	145.02	0.02	0.02	843	49012		
			13:28:56	19.94	20.04	144.87	0.02	0.02	843	47898		
			13:28:57	19.94	20.04	144.94	0.02	0.02	843	45568		
			13:28:58	19.94	20.04	144.96	0.02	0.02	843	48728		
			13:28:59	19.93	20.04	145.06	0.02	0.02	843	48728		
			13:29:00	19.96	20.04	145.33	0.02	0.02	843	45080		
			13:29:01	19.89	20.04	145.38	0.02	0.02	843	42792		
			13:29:02	19.96	20.04	145.61	0.02	0.02	843	45080		
			13:29:03	19.92	20.03	145.59	0.02	0.02	843	49588		
			13:29:04	19.91	20.03	145.61	0.02	0.02	843	47898		
			13:29:05	19.95	20.03	145.61	0.02	0.02	843	44136		
			13:29:06	19.98	20.03	145.54	0.02	0.02	843	42576		
			13:29:07	19.90	20.03	145.54	0.02	0.02	843	47095		
			13:29:08	20.25	20.03	145.37	0.02	0.02	843	46066		

**TABLE D-28**

Profile PRO-22 on September 22, 2022 (1326-1337 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

113	Instantaneous Minimum Dilution in Profile
146	Minimum Average Dilution in Profile
168	Plume Average Dilution Detected
942	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:29:09	20.61	20.04	145.39	0.02	0.02	843	43454		No plume detected at 25 ft
			13:29:10	22.90	20.03	145.39	0.02	0.02	843	45568		
			13:29:11	24.85	20.03	145.25	0.02	0.02	843	44136		
			13:29:12	25.20	20.03	145.27	0.02	0.02	843	47095		
			13:29:13	25.40	20.03	145.36	0.02	0.02	843	48171		
			13:29:14	25.41	20.03	145.35	0.02	0.02	843	44840		
			13:29:15	25.39	20.03	145.27	0.02	0.02	843	49298		
			13:29:16	25.39	20.03	145.20	0.02	0.02	843	47095		
			13:29:17	25.32	20.03	145.25	0.02	0.02	843	47627		
			13:29:18	25.45	20.03	145.40	0.02	0.02	843	45568		
			13:29:19	25.41	20.03	145.42	0.02	0.02	843	41324		
			13:29:20	25.43	20.03	145.38	0.02	0.02	843	42792		
			13:29:21	25.35	20.03	145.23	0.02	0.02	843	46066		
			13:29:22	25.34	20.03	145.23	0.02	0.02	843	49588		
			13:29:23	25.33	20.04	145.12	0.02	0.02	843	52037		
			13:29:24	25.30	20.04	145.15	0.02	0.02	843	42150		
			13:29:25	25.30	20.04	145.13	0.02	0.02	843	47095		
			13:29:26	25.32	20.04	145.13	0.02	0.02	843	41324		
			13:29:27	25.31	20.04	145.08	0.02	0.02	843	43679		
			13:29:28	25.31	20.04	145.15	0.02	0.02	843	45568		
			13:29:29	25.31	20.04	145.14	0.02	0.02	843	45568		
			13:29:30	25.27	20.04	145.06	0.02	0.02	843	46066		
			13:29:31	25.30	20.04	145.13	0.02	0.02	843	43231		
			13:29:32	25.27	20.04	145.27	0.02	0.02	843	45080		
			13:29:33	25.33	20.04	145.40	0.02	0.02	843	43231		
			13:29:34	25.34	20.04	145.44	0.02	0.02	843	46575		
			13:29:35	25.29	20.04	145.46	0.02	0.02	843	44136		
			13:29:36	25.31	20.03	145.47	0.02	0.02	843	48728		
			13:29:37	25.33	20.03	145.52	0.02	0.02	843	44136		
			13:29:38	25.29	20.03	145.52	0.02	0.02	843	44603		
			13:29:39	25.27	20.03	145.56	0.02	0.02	843	44603		
			13:29:40	25.36	20.03	145.59	0.02	0.02	843	44136		
			13:29:41	25.32	20.03	145.59	0.02	0.02	843	50179		
			13:29:42	25.34	20.03	145.54	0.02	0.02	843	49298		
			13:29:43	25.33	20.03	145.47	0.02	0.02	843	45080		
			13:29:44	25.35	20.03	145.44	0.02	0.02	843	46066		
			13:29:45	25.34	20.03	145.37	0.02	0.02	843	49588		
			13:29:46	25.35	20.03	145.37	0.02	0.02	843	42792		

**TABLE D-28**

Profile PRO-22 on September 22, 2022 (1326-1337 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

113	Instantaneous Minimum Dilution in Profile
146	Minimum Average Dilution in Profile
168	Plume Average Dilution Detected
942	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:29:47	25.30	20.03	145.34	0.02	0.02	843	46575		
			13:29:48	25.32	20.03	145.33	0.02	0.02	843	48448		
			13:29:49	25.34	20.03	145.34	0.02	0.02	843	46575		
			13:29:50	25.32	20.03	145.32	0.02	0.02	843	44603		
			13:29:51	25.32	20.03	145.30	0.02	0.02	843	50783		
			13:29:52	25.35	20.03	145.37	0.02	0.02	843	46066		
			13:29:53	25.34	20.03	145.34	0.02	0.02	843	46066		
			13:29:54	25.33	20.03	145.38	0.02	0.02	843	45080		
			13:29:55	25.35	20.03	145.44	0.02	0.02	843	47095		
			13:29:56	25.32	20.03	145.54	0.02	0.02	843	42792		
			13:29:57	25.36	20.03	145.61	0.02	0.02	843	47898		
			13:29:58	25.37	20.03	145.56	0.02	0.02	843	47095		
			13:29:59	25.35	20.03	145.63	0.06	0.06	843	13234		
			13:30:00	25.41	20.03	145.61	0.02	0.02	843	48728		
			13:30:01	25.50	20.03	145.63	0.02	0.02	843	44603		
			13:30:02	25.64	20.03	145.47	0.02	0.02	843	46066		
			13:30:03	25.99	20.03	145.44	0.02	0.02	843	42576		
			13:30:04	26.75	20.03	145.33	0.72	0.27	843	3151		
			13:30:05	29.70	20.03	145.52	0.02	0.02	843	45568		
			13:30:06	30.89	20.03	145.54	0.02	0.02	843	47627		
			13:30:07	30.95	20.03	145.52	0.02	0.02	843	49588		
			13:30:08	30.95	20.03	145.44	0.02	0.02	843	44136		
			13:30:09	31.06	20.03	145.42	0.02	0.02	843	50179		
			13:30:10	31.03	20.03	145.37	0.02	0.02	843	47627		
			13:30:11	30.96	20.03	145.38	0.02	0.02	843	45568		
			13:30:12	31.01	20.03	145.42	0.02	0.02	843	47095		
			13:30:13	31.04	20.03	145.46	0.02	0.02	843	45568		
			13:30:14	31.00	20.03	145.52	0.02	0.02	843	47095		
			13:30:15	31.01	20.03	145.61	0.02	0.02	843	45080		
			13:30:16	31.04	20.03	145.66	0.02	0.02	843	49012		
			13:30:17	31.05	20.03	145.73	0.02	0.02	843	41324		
			13:30:18	31.03	20.03	145.78	0.02	0.02	843	48448		
			13:30:19	31.03	20.03	145.73	0.02	0.02	843	47627		
			13:30:20	31.05	20.03	145.75	0.02	0.02	843	45568		
			13:30:21	31.00	20.03	145.71	0.02	0.02	843	44136		
			13:30:22	31.00	20.03	145.71	0.02	0.02	843	44603		
			13:30:23	31.07	20.03	145.73	0.02	0.02	843	45568		
			13:30:24	31.01	20.03	145.71	0.02	0.02	843	43010		

No plume detected at 30 ft

**TABLE D-28**

Profile PRO-22 on September 22, 2022 (1326-1337 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

113	Instantaneous Minimum Dilution in Profile
146	Minimum Average Dilution in Profile
168	Plume Average Dilution Detected
942	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:30:25	31.04	20.03	145.67	0.02	0.02	843	42576		
			13:30:26	30.98	20.03	145.61	0.02	0.02	843	45080		
			13:30:27	31.05	20.03	145.59	0.02	0.02	843	44603		
			13:30:28	31.01	20.03	145.56	0.02	0.02	843	47095		
			13:30:29	31.05	20.04	145.56	0.02	0.02	843	48448		
			13:30:30	31.03	20.03	145.56	0.02	0.02	843	43679		
			13:30:31	31.01	20.03	145.56	0.02	0.02	843	43679		
			13:30:32	30.99	20.03	145.65	0.02	0.02	843	42150		
			13:30:33	31.01	20.03	145.80	0.02	0.02	843	44136		
			13:30:34	30.96	20.03	145.90	0.02	0.02	843	45080		
			13:30:35	30.97	20.03	145.86	0.02	0.02	843	46066		
			13:30:36	31.06	20.03	145.96	0.02	0.02	843	43454		
			13:30:37	31.08	20.03	145.90	0.02	0.02	843	47360		
			13:30:38	31.04	20.03	145.90	0.02	0.02	843	45568		
			13:30:39	31.05	20.03	145.88	0.02	0.02	843	45080		
			13:30:40	31.04	20.03	145.80	0.02	0.02	843	43010		
			13:30:41	31.04	20.03	145.71	0.02	0.02	843	46066		
			13:30:42	31.05	20.03	145.65	0.02	0.02	843	48448		
			13:30:43	31.04	20.03	145.68	0.02	0.02	843	45568		
			13:30:44	31.02	20.03	145.50	0.02	0.02	843	47898		
			13:30:45	31.06	20.03	145.48	0.02	0.02	843	46066		
			13:30:46	31.08	20.04	145.50	0.02	0.02	843	46066		
			13:30:47	31.04	20.03	145.59	0.02	0.02	843	45568		
			13:30:48	31.03	20.03	145.69	0.02	0.02	843	44136		
			13:30:49	30.97	20.03	145.69	0.02	0.02	843	43679		
			13:30:50	31.13	20.03	145.71	0.02	0.02	843	46066		
			13:30:51	31.02	20.03	145.75	0.02	0.02	843	45080		
			13:30:52	31.35	20.03	145.69	0.02	0.02	843	45080		
			13:30:53	32.58	20.03	145.79	0.02	0.02	843	43679		
			13:30:54	35.62	20.03	147.53	1.56	1.02	843	824		
			13:30:55	36.46	20.03	147.10	2.20	1.59	843	530	765	Plume traces detected at 36 ft
			13:30:56	36.60	20.03	147.16	1.69	1.14	843	741		
			13:30:57	36.60	20.03	147.03	1.40	0.87	843	964		
			13:30:58	36.64	20.03	146.68	1.21	0.71	843	1191		
			13:30:59	36.69	20.03	146.64	1.55	1.01	843	831		
			13:31:00	36.67	20.03	146.62	1.00	0.52	843	1635		
			13:31:01	36.57	20.03	146.66	0.54	0.10	843	8282		
			13:31:02	36.47	20.03	146.64	0.90	0.43	843	1982		

**TABLE D-28**

Profile PRO-22 on September 22, 2022 (1326-1337 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

113	Instantaneous Minimum Dilution in Profile
146	Minimum Average Dilution in Profile
168	Plume Average Dilution Detected
942	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:31:03	36.34	20.02	146.65	0.86	0.39	843	2141		
			13:31:04	36.38	20.02	146.64	1.42	0.90	843	937		
			13:31:05	36.36	20.02	146.64	1.24	0.74	843	1147		
			13:31:06	36.36	20.02	146.64	1.12	0.63	843	1340		
			13:31:07	36.45	20.02	146.66	1.18	0.68	843	1238		
			13:31:08	36.45	20.02	146.70	1.37	0.85	843	989		
			13:31:09	36.42	20.02	146.66	0.80	0.34	843	2465		
			13:31:10	36.41	20.02	146.64	1.15	0.65	843	1299		
			13:31:11	36.34	20.02	146.64	0.79	0.33	843	2524		
			13:31:12	36.29	20.02	146.62	1.06	0.58	843	1464		
			13:31:13	36.33	20.02	146.64	1.11	0.61	843	1373		
			13:31:14	36.40	20.02	146.66	1.11	0.62	843	1363		
			13:31:15	36.36	20.02	146.66	1.56	1.02	843	829	1187	Plume traces detected at 36 ft
			13:31:16	36.38	20.02	146.67	2.18	1.58	843	535		
			13:31:17	36.33	20.02	146.66	0.89	0.42	843	2021		
			13:31:18	36.36	20.02	146.64	0.95	0.47	843	1780		
			13:31:19	36.34	20.02	146.68	0.89	0.42	843	2021		
			13:31:20	36.36	20.02	146.62	1.06	0.57	843	1468		
			13:31:21	36.33	20.02	146.70	0.92	0.45	843	1887		
			13:31:22	36.39	20.02	146.70	0.73	0.28	843	3031		
			13:31:23	36.43	20.02	146.63	0.81	0.35	843	2421		
			13:31:24	36.40	20.02	146.66	1.57	1.03	843	821		
			13:31:25	36.39	20.02	146.64	1.16	0.66	843	1277	1302	Plume traces detected at 36 ft
			13:31:26	36.35	20.02	146.62	1.00	0.52	843	1620		
			13:31:27	36.41	20.02	146.62	1.05	0.57	843	1489		
			13:31:28	36.37	20.02	146.64	0.98	0.50	843	1698		
			13:31:29	36.39	20.02	146.69	1.20	0.70	843	1208		
			13:31:30	36.35	20.02	146.57	1.01	0.53	843	1589		
			13:31:31	36.40	20.02	146.66	1.10	0.61	843	1381		
			13:31:32	36.35	20.02	146.68	0.78	0.32	843	2639		
			13:31:33	36.37	20.02	146.70	0.84	0.37	843	2256		
			13:31:34	36.39	20.02	146.78	1.01	0.52	843	1606		
			13:31:35	36.37	20.03	146.82	1.89	1.32	843	641		
			13:31:36	36.37	20.03	146.82	2.71	2.05	843	411		
			13:31:37	36.41	20.03	147.05	2.85	2.18	843	387	546	Plume detected at 36 ft
			13:31:38	36.41	20.03	147.05	2.72	2.06	843	408		
			13:31:39	36.38	20.03	147.05	2.27	1.66	843	507		
			13:31:40	36.37	20.03	147.18	1.89	1.32	843	639		



**TABLE D-28**

Profile PRO-22 on September 22, 2022 (1326-1337 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

113	Instantaneous Minimum Dilution in Profile
146	Minimum Average Dilution in Profile
168	Plume Average Dilution Detected
942	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:31:41	36.36	20.03	147.07	1.91	1.34	843	630		
			13:31:42	36.29	20.03	146.88	1.68	1.13	843	744		
			13:31:43	36.37	20.03	146.95	1.26	0.75	843	1117		
			13:31:44	36.34	20.03	147.16	1.12	0.63	843	1336		
			13:31:45	36.37	20.03	147.37	1.67	1.12	843	755		
			13:31:46	36.36	20.03	147.46	2.31	1.70	843	497		
			13:31:47	36.35	20.03	147.48	2.78	2.11	843	399		
			13:31:48	36.33	20.03	147.18	2.72	2.06	843	409		
			13:31:49	36.32	20.03	146.94	2.55	1.91	843	441	586	Plume detected at 36 ft
			13:31:50	36.34	20.03	146.79	1.76	1.20	843	701		
			13:31:51	36.29	20.03	146.76	2.60	1.95	843	432		
			13:31:52	36.32	20.03	146.85	1.75	1.19	843	708		
			13:31:53	36.33	20.03	146.93	1.73	1.17	843	719		
			13:31:54	36.35	20.03	146.86	2.06	1.47	843	572		
			13:31:55	36.31	20.03	146.31	1.58	1.04	843	812		
			13:31:56	36.31	20.03	145.41	0.02	0.02	843	45568		
			13:31:57	36.32	20.03	145.08	0.02	0.02	843	43679		
			13:31:58	36.31	20.03	144.77	0.02	0.02	843	43454		
			13:31:59	36.29	20.03	144.98	0.02	0.02	843	47898		
			13:32:00	36.30	20.03	144.87	0.02	0.02	843	46575		
			13:32:01	36.28	20.03	144.77	0.02	0.02	843	41324		
			13:32:02	36.27	20.03	144.84	0.02	0.02	843	47898		
			13:32:03	36.27	20.03	144.91	0.02	0.02	843	49298		
			13:32:04	36.19	20.03	145.27	0.02	0.02	843	45080		
			13:32:05	36.31	20.03	144.96	0.02	0.02	843	46575		
			13:32:06	36.31	20.03	145.11	0.02	0.02	843	44136		
			13:32:07	36.34	20.03	145.06	0.02	0.02	843	45568		
			13:32:08	36.28	20.03	144.96	0.02	0.02	843	46575		
			13:32:09	36.30	20.03	144.78	0.02	0.02	843	44603		
			13:32:10	36.26	20.03	144.60	0.02	0.02	843	44603		
			13:32:11	36.29	20.03	144.70	0.02	0.02	843	47627		
			13:32:12	36.21	20.03	145.00	0.47	0.05	843	17916		
			13:32:13	36.29	20.03	145.23	0.39	0.39	843	2168		
			13:32:14	36.25	20.03	145.32	0.66	0.22	843	3864		
			13:32:15	36.28	20.03	145.32	0.08	0.08	843	11078		
			13:32:16	36.26	20.03	145.45	0.53	0.10	843	8364		
			13:32:17	36.30	20.03	145.71	0.75	0.29	843	2866		
			13:32:18	36.26	20.03	145.65	0.55	0.11	843	7490		

**TABLE D-28**

Profile PRO-22 on September 22, 2022 (1326-1337 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

113	Instantaneous Minimum Dilution in Profile
146	Minimum Average Dilution in Profile
168	Plume Average Dilution Detected
942	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:32:19	36.34	20.03	145.59	0.64	0.20	843	4280		
			13:32:20	36.27	20.03	145.78	0.42	0.42	843	2024		
			13:32:21	36.34	20.04	146.24	1.08	0.59	843	1421		
			13:32:22	36.33	20.04	146.33	1.05	0.57	843	1491		
			13:32:23	36.29	20.04	146.12	0.07	0.07	843	12489		
			13:32:24	36.34	20.04	145.75	0.02	0.02	843	46575		
			13:32:25	36.34	20.03	145.24	0.02	0.02	843	46575		
			13:32:26	36.35	20.03	144.91	0.02	0.02	843	44136		
			13:32:27	36.40	20.03	144.75	0.02	0.02	843	47627		
			13:32:28	36.35	20.03	144.83	0.02	0.02	843	45080		
			13:32:29	36.37	20.03	145.20	0.02	0.02	843	45080		
			13:32:30	36.39	20.03	145.39	0.02	0.02	843	48448		
			13:32:31	36.37	20.03	146.00	0.09	0.09	843	9504		
			13:32:32	36.35	20.04	146.57	0.63	0.19	843	4503		
			13:32:33	36.35	20.04	146.45	1.44	0.92	843	919		
			13:32:34	36.41	20.04	146.49	0.49	0.06	843	14580		
			13:32:35	36.34	20.04	146.51	0.29	0.29	843	2861		
			13:32:36	36.35	20.03	146.16	0.02	0.02	843	42362		
			13:32:37	36.39	20.03	145.75	0.02	0.02	843	48728		
			13:32:38	36.38	20.03	145.71	0.02	0.02	843	47627		
			13:32:39	36.40	20.03	145.61	0.02	0.02	843	41733		
			13:32:40	36.36	20.03	145.54	0.02	0.02	843	52688		
			13:32:41	36.32	20.03	145.37	0.02	0.02	843	45568		
			13:32:42	36.35	20.03	145.34	0.02	0.02	843	42150		
			13:32:43	36.36	20.03	145.39	0.06	0.06	843	13360		
			13:32:44	36.30	20.03	145.82	0.84	0.37	843	2250		
			13:32:45	36.37	20.03	146.73	2.16	1.56	843	541		
			13:32:46	36.34	20.04	147.39	3.13	2.43	843	347		
			13:32:47	36.35	20.04	147.27	3.95	3.16	843	267		
			13:32:48	36.57	20.04	147.43	2.46	1.83	843	461	350	Plume detected at 36 ft
			13:32:49	36.68	20.04	147.67	2.99	2.30	843	366		
			13:32:50	36.71	20.04	147.87	4.38	3.55	843	237		
			13:32:51	36.83	20.04	147.62	4.21	3.39	843	248		
			13:32:52	36.65	20.04	147.55	3.22	2.51	843	335		
			13:32:53	36.72	20.04	146.91	1.09	0.60	843	1396		
			13:32:54	36.67	20.04	147.05	0.02	0.02	843	35272		
			13:32:55	36.69	20.04	146.62	0.02	0.02	843	48728		
			13:32:56	36.67	20.04	146.35	0.02	0.02	843	48448		

**TABLE D-28**

Profile PRO-22 on September 22, 2022 (1326-1337 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

113	Instantaneous Minimum Dilution in Profile
146	Minimum Average Dilution in Profile
168	Plume Average Dilution Detected
942	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:32:57	36.74	20.03	145.86	0.02	0.02	843	47095		
			13:32:58	36.67	20.03	146.03	0.02	0.02	843	43231		
			13:32:59	36.72	20.03	145.78	0.02	0.02	843	52037		
			13:33:00	36.68	20.03	145.67	0.02	0.02	843	47627		
			13:33:01	36.73	20.03	145.67	0.02	0.02	843	47095		
			13:33:02	36.74	20.03	145.90	0.02	0.02	843	47898		
			13:33:03	36.74	20.03	145.92	0.30	0.30	843	2820		
			13:33:04	36.71	20.03	145.94	1.25	0.75	843	1131		
			13:33:05	36.83	20.03	145.99	1.69	1.14	843	741		
			13:33:06	36.91	20.03	145.82	1.86	1.29	843	652		
			13:33:07	36.87	20.03	145.97	1.52	0.99	843	854		
			13:33:08	36.77	20.03	146.03	0.17	0.17	843	4836		
			13:33:09	36.69	20.03	146.02	0.02	0.02	843	42792		
			13:33:10	36.72	20.03	145.94	0.02	0.02	843	44603		
			13:33:11	36.76	20.03	145.71	0.02	0.02	843	46066		
			13:33:12	37.04	20.03	145.50	0.02	0.02	843	46066		
			13:33:13	37.87	20.03	145.57	0.02	0.02	843	49012		
			13:33:14	41.04	20.03	146.92	1.95	1.37	843	616		
			13:33:15	42.58	20.04	148.20	3.23	2.52	843	334		
			13:33:16	42.66	20.04	147.12	3.64	2.89	843	292		
			13:33:17	42.86	20.04	146.83	3.54	2.79	843	302		
			13:33:18	42.81	20.04	146.47	3.60	2.85	843	296		
			13:33:19	42.81	20.04	146.92	5.05	4.15	843	203		
			13:33:20	42.88	20.04	147.73	6.66	5.60	843	151		
			13:33:21	42.77	20.04	147.32	6.88	5.80	843	145		
			13:33:22	42.76	20.04	147.87	6.94	5.85	843	144		
			13:33:23	42.66	20.04	147.91	6.94	5.85	843	144		
			13:33:24	42.68	20.04	148.26	6.99	5.89	843	143		
			13:33:25	42.48	20.04	148.17	7.12	6.01	843	140		
			13:33:26	42.51	20.04	148.48	8.32	7.09	843	119		
			13:33:27	42.48	20.04	148.38	8.21	6.99	843	121	146	Plume measured at 42-43 ft
			13:33:28	42.51	20.04	148.48	8.45	7.20	843	117		
			13:33:29	42.47	20.04	148.59	8.56	7.30	843	115		
			13:33:30	42.51	20.04	148.61	8.77	7.49	843	113		
			13:33:31	42.48	20.04	148.54	7.56	6.40	843	132		
			13:33:32	42.48	20.04	148.46	7.45	6.31	843	134		
			13:33:33	42.51	20.04	148.37	7.12	6.01	843	140		
			13:33:34	42.51	20.04	148.37	7.08	5.98	843	141		

**TABLE D-28**

Profile PRO-22 on September 22, 2022 (1326-1337 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

113	Instantaneous Minimum Dilution in Profile
146	Minimum Average Dilution in Profile
168	Plume Average Dilution Detected
942	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:33:35	42.52	20.04	148.36	6.78	5.71	843	148		
			13:33:36	42.51	20.04	148.37	6.45	5.41	843	156		
			13:33:37	42.53	20.04	148.42	5.41	4.48	843	188		
			13:33:38	42.57	20.04	148.42	4.67	3.81	843	221		
			13:33:39	42.50	20.04	148.34	3.47	2.74	843	308		
			13:33:40	42.54	20.04	148.10	3.14	2.44	843	345		
			13:33:41	42.53	20.04	147.59	2.71	2.05	843	411		
			13:33:42	42.52	20.04	147.18	2.74	2.08	843	406		
			13:33:43	42.57	20.04	147.10	3.10	2.40	843	351		
			13:33:44	42.55	20.04	147.14	2.68	2.03	843	415		
			13:33:45	42.56	20.04	147.07	1.90	1.32	843	637		
			13:33:46	42.54	20.04	146.86	1.86	1.29	843	654		
			13:33:47	42.57	20.04	146.57	2.22	1.62	843	521		
			13:33:48	42.51	20.04	146.52	1.81	1.24	843	678		
			13:33:49	42.55	20.04	146.34	1.92	1.34	843	628		
			13:33:50	42.50	20.04	146.28	2.13	1.53	843	550		
			13:33:51	42.49	20.04	146.30	1.25	0.74	843	1134		
			13:33:52	42.57	20.04	146.13	0.67	0.22	843	3773		
			13:33:53	42.62	20.04	146.14	1.36	0.84	843	1002		
			13:33:54	42.75	20.04	146.17	2.17	1.57	843	537		
			13:33:55	42.84	20.04	146.11	2.23	1.62	843	520		
			13:33:56	42.81	20.04	146.16	1.27	0.76	843	1103		
			13:33:57	42.84	20.04	146.21	1.06	0.57	843	1483		
			13:33:58	42.78	20.04	146.23	0.88	0.41	843	2061		
			13:33:59	42.84	20.04	146.16	0.78	0.32	843	2605		
			13:34:00	42.82	20.04	146.10	1.66	1.11	843	759		
			13:34:01	42.80	20.04	146.09	1.70	1.15	843	733		
			13:34:02	42.81	20.04	146.03	2.21	1.60	843	525		
			13:34:03	42.85	20.04	145.92	1.48	0.95	843	887		
			13:34:04	42.78	20.04	145.86	1.08	0.59	843	1420		
			13:34:05	42.76	20.04	145.88	1.43	0.90	843	934		
			13:34:06	42.78	20.04	145.57	0.44	0.01	843	68367		
			13:34:07	42.82	20.04	145.37	0.33	0.33	843	2579		
			13:34:08	42.77	20.04	145.47	0.08	0.08	843	10498		
			13:34:09	42.74	20.04	145.54	2.73	2.07	843	407		
			13:34:10	42.84	20.04	145.82	6.97	5.87	843	144		
			13:34:11	42.87	20.04	147.53	7.97	6.78	843	124		
			13:34:12	42.74	20.04	147.95	7.86	6.68	843	126		

**TABLE D-28**

Profile PRO-22 on September 22, 2022 (1326-1337 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

113	Instantaneous Minimum Dilution in Profile
146	Minimum Average Dilution in Profile
168	Plume Average Dilution Detected
942	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:34:13	42.73	20.04	147.72	7.74	6.56	843	128		
			13:34:14	42.88	20.04	148.36	7.64	6.48	843	130		
			13:34:15	42.91	20.04	148.34	7.75	6.58	843	128		
			13:34:16	42.69	20.04	147.94	7.84	6.65	843	127		
			13:34:17	42.83	20.04	148.98	7.58	6.42	843	131		
			13:34:18	42.99	20.04	148.90	7.92	6.73	843	125	165	Main body of discharge plume at 42-43 ft
			13:34:19	42.75	20.04	148.67	7.32	6.19	843	136		
			13:34:20	42.64	20.04	148.48	7.07	5.96	843	141		
			13:34:21	42.98	20.04	148.71	6.49	5.44	843	155		
			13:34:22	42.92	20.04	148.61	6.61	5.56	843	152		
			13:34:23	42.60	20.04	148.52	6.48	5.44	843	155		
			13:34:24	42.84	20.04	148.50	6.92	5.83	843	145		
			13:34:25	43.00	20.04	148.44	6.29	5.27	843	160		
			13:34:26	42.74	20.04	148.42	6.46	5.41	843	156		
			13:34:27	42.82	20.04	148.50	6.79	5.71	843	148		
			13:34:28	42.94	20.04	148.52	6.87	5.79	843	146		
			13:34:29	42.74	20.04	148.42	7.10	5.99	843	141		
			13:34:30	42.93	20.04	148.50	7.37	6.23	843	135		
			13:34:31	42.85	20.04	148.50	7.62	6.46	843	131		
			13:34:32	42.65	20.04	148.61	7.54	6.39	843	132		
			13:34:33	42.96	20.04	148.71	7.46	6.32	843	133		
			13:34:34	42.91	20.04	148.77	7.16	6.04	843	139		
			13:34:35	42.60	20.04	148.71	6.52	5.47	843	154		
			13:34:36	42.96	20.04	148.94	6.37	5.34	843	158		
			13:34:37	42.93	20.04	148.84	6.54	5.49	843	154		
			13:34:38	42.69	20.04	148.84	6.93	5.84	843	144		
			13:34:39	42.91	20.04	148.84	8.01	6.81	843	124		
			13:34:40	42.76	20.04	148.87	7.74	6.57	843	128		
			13:34:41	42.77	20.04	148.84	7.55	6.40	843	132		
			13:34:42	43.00	20.04	148.73	6.27	5.25	843	161		
			13:34:43	42.64	20.04	148.80	6.38	5.35	843	158		
			13:34:44	42.87	20.04	148.61	6.01	5.01	843	168		
			13:34:45	42.98	20.04	148.54	5.99	5.00	843	169		
			13:34:46	42.72	20.04	148.65	6.19	5.17	843	163		
			13:34:47	42.96	20.04	148.30	5.78	4.80	843	175		
			13:34:48	42.71	20.04	148.37	5.82	4.84	843	174		
			13:34:49	42.89	20.04	148.34	5.62	4.67	843	181		
			13:34:50	42.95	20.04	148.23	5.69	4.73	843	178		

**TABLE D-28**

Profile PRO-22 on September 22, 2022 (1326-1337 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

113	Instantaneous Minimum Dilution in Profile
146	Minimum Average Dilution in Profile
168	Plume Average Dilution Detected
942	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:34:51	42.62	20.04	148.36	5.87	4.89	843	172		
			13:34:52	42.97	20.04	148.35	6.47	5.43	843	155		
			13:34:53	42.78	20.04	148.42	6.94	5.85	843	144		
			13:34:54	42.84	20.04	148.52	6.95	5.86	843	144		
			13:34:55	42.94	20.04	148.56	6.96	5.87	843	144		
			13:34:56	42.62	20.04	148.59	6.85	5.76	843	146		
			13:34:57	43.07	20.04	148.71	6.73	5.66	843	149		
			13:34:58	42.67	20.04	148.61	7.35	6.22	843	136		
			13:34:59	42.92	20.04	148.71	6.64	5.58	843	151		
			13:35:00	42.76	20.04	148.75	7.12	6.01	843	140		
			13:35:01	42.73	20.04	149.04	7.16	6.05	843	139		
			13:35:02	43.06	20.04	149.28	7.53	6.38	843	132		
			13:35:03	42.57	20.04	149.04	7.54	6.39	843	132		
			13:35:04	43.03	20.04	149.23	7.51	6.36	843	133		
			13:35:05	42.62	20.04	149.17	7.83	6.65	843	127		
			13:35:06	42.99	20.04	148.73	7.98	6.78	843	124		
			13:35:07	42.87	20.04	148.72	8.33	7.09	843	119		
			13:35:08	42.68	20.04	148.93	8.35	7.12	843	118		
			13:35:09	42.97	20.04	148.54	7.68	6.51	843	129		
			13:35:10	42.63	20.04	148.65	7.39	6.25	843	135		
			13:35:11	43.20	20.04	148.50	7.20	6.09	843	139		
			13:35:12	42.52	20.04	148.65	7.15	6.04	843	140		
			13:35:13	43.12	20.04	148.86	6.95	5.85	843	144		
			13:35:14	42.74	20.04	148.80	6.94	5.85	843	144		
			13:35:15	43.05	20.04	148.75	7.17	6.06	843	139		
			13:35:16	42.75	20.04	148.71	6.77	5.70	843	148		
			13:35:17	42.85	20.04	148.54	6.85	5.76	843	146		
			13:35:18	42.88	20.04	148.52	6.56	5.50	843	153		
			13:35:19	42.80	20.04	148.46	6.57	5.52	843	153		
			13:35:20	42.95	20.04	148.44	6.35	5.32	843	159		
			13:35:21	42.68	20.04	148.65	6.10	5.09	843	166		
			13:35:22	42.98	20.04	148.69	6.17	5.16	843	163		
			13:35:23	42.74	20.04	148.65	6.36	5.33	843	158		
			13:35:24	43.03	20.04	148.86	6.37	5.34	843	158		
			13:35:25	42.66	20.04	148.81	6.54	5.49	843	154		
			13:35:26	43.06	20.04	148.97	6.85	5.76	843	146		
			13:35:27	42.68	20.04	148.92	7.11	6.00	843	141		
			13:35:28	43.09	20.04	148.90	7.56	6.41	843	132		

**TABLE D-28**

Profile PRO-22 on September 22, 2022 (1326-1337 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

113	Instantaneous Minimum Dilution in Profile
146	Minimum Average Dilution in Profile
168	Plume Average Dilution Detected
942	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:35:29	42.56	20.04	148.92	7.48	6.33	843	133		
			13:35:30	43.05	20.04	148.71	7.54	6.39	843	132		
			13:35:31	42.69	20.04	148.83	7.85	6.66	843	126		
			13:35:32	43.12	20.04	148.52	7.43	6.29	843	134		
			13:35:33	42.60	20.04	148.69	7.37	6.24	843	135		
			13:35:34	43.11	20.04	149.00	7.16	6.04	843	139		
			13:35:35	42.62	20.04	148.90	7.38	6.24	843	135		
			13:35:36	43.24	20.04	148.92	7.60	6.44	843	131		
			13:35:37	42.51	20.04	148.94	7.67	6.50	843	130		
			13:35:38	43.16	20.04	148.83	7.43	6.29	843	134		
			13:35:39	42.54	20.04	148.90	7.42	6.27	843	134		
			13:35:40	43.24	20.04	148.84	7.13	6.02	843	140		
			13:35:41	42.59	20.04	148.98	7.03	5.93	843	142		
			13:35:42	43.14	20.04	148.97	7.38	6.25	843	135		
			13:35:43	42.62	20.04	148.82	7.46	6.31	843	134		
			13:35:44	43.16	20.04	148.71	7.01	5.91	843	143		
			13:35:45	42.68	20.04	148.65	6.88	5.79	843	146		
			13:35:46	43.03	20.04	148.50	6.55	5.50	843	153		
			13:35:47	42.62	20.04	148.49	6.60	5.55	843	152		
			13:35:48	43.06	20.04	148.28	6.17	5.16	843	163		
			13:35:49	42.81	20.04	148.16	5.93	4.94	843	170		
			13:35:50	42.94	20.04	148.04	4.94	4.05	843	208		
			13:35:51	42.77	20.04	147.84	5.04	4.14	843	204		
			13:35:52	42.95	20.03	147.85	4.77	3.90	843	216		
			13:35:53	42.97	20.04	148.04	4.72	3.85	843	219		
			13:35:54	42.83	20.04	148.15	5.01	4.12	843	205		
			13:35:55	42.99	20.04	148.11	4.72	3.86	843	219		
			13:35:56	42.74	20.04	148.11	5.18	4.27	843	198		
			13:35:57	43.14	20.04	148.14	5.34	4.41	843	191		
			13:35:58	42.66	20.04	148.17	4.79	3.92	843	215		
			13:35:59	43.05	20.04	148.11	4.89	4.01	843	210		
			13:36:00	42.71	20.03	148.04	4.90	4.02	843	210		
			13:36:01	43.09	20.03	148.15	4.49	3.65	843	231		
			13:36:02	42.79	20.03	148.11	4.67	3.81	843	221		
			13:36:03	42.84	20.03	148.18	4.91	4.03	843	209		
			13:36:04	42.78	20.03	148.07	4.80	3.93	843	215		
			13:36:05	42.88	20.03	148.08	4.64	3.78	843	223		
			13:36:06	42.99	20.03	148.15	4.50	3.66	843	230		

**TABLE D-28**

Profile PRO-22 on September 22, 2022 (1326-1337 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

113	Instantaneous Minimum Dilution in Profile
146	Minimum Average Dilution in Profile
168	Plume Average Dilution Detected
942	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:36:07	42.79	20.03	148.15	4.65	3.79	843	222		
			13:36:08	42.91	20.03	148.11	4.38	3.55	843	238		
			13:36:09	42.91	20.04	148.13	5.11	4.21	843	200		
			13:36:10	42.96	20.03	148.15	4.56	3.72	843	227		
			13:36:11	42.92	20.04	148.04	4.85	3.97	843	212		
			13:36:12	42.86	20.03	148.11	4.98	4.09	843	206		
			13:36:13	42.95	20.03	148.11	4.95	4.06	843	208		
			13:36:14	42.93	20.03	148.11	4.81	3.94	843	214		
			13:36:15	42.96	20.03	148.06	4.46	3.63	843	232		
			13:36:16	42.82	20.03	148.03	4.83	3.96	843	213		
			13:36:17	42.86	20.03	148.02	4.48	3.64	843	231		
			13:36:18	42.97	20.03	148.06	4.94	4.05	843	208		
			13:36:19	42.91	20.03	148.02	4.85	3.97	843	212		
			13:36:20	42.85	20.03	148.04	4.39	3.56	843	237		
			13:36:21	42.85	20.03	148.17	4.89	4.01	843	210		
			13:36:22	42.88	20.03	148.17	5.40	4.47	843	189		
			13:36:23	42.99	20.03	148.11	5.34	4.41	843	191		
			13:36:24	42.85	20.03	148.19	5.27	4.35	843	194		
			13:36:25	42.81	20.03	148.25	5.47	4.53	843	186		
			13:36:26	42.89	20.03	148.29	5.24	4.32	843	195	199	
			13:36:27	42.91	20.03	148.30	4.99	4.10	843	206		
			13:36:28	42.92	20.03	148.33	5.00	4.11	843	205		
			13:36:29	42.81	20.03	148.32	5.14	4.23	843	199		
			13:36:30	42.92	20.04	148.39	5.03	4.14	843	204		
			13:36:31	42.96	20.04	148.38	5.36	4.43	843	190		
			13:36:32	42.97	20.04	148.54	5.52	4.58	843	184		
			13:36:33	42.85	20.04	148.48	5.18	4.27	843	198		
			13:36:34	42.87	20.04	148.54	5.25	4.33	843	195		
			13:36:35	42.95	20.04	148.63	5.00	4.11	843	205		
			13:36:36	42.94	20.04	148.60	4.74	3.87	843	218		
			13:36:37	42.87	20.04	148.54	5.36	4.43	843	190		
			13:36:38	42.83	20.04	148.56	5.66	4.70	843	179		
			13:36:39	42.88	20.04	148.46	5.50	4.56	843	185		
			13:36:40	42.93	20.04	148.50	5.67	4.71	843	179		
			13:36:41	42.84	20.04	148.67	5.70	4.73	843	178		
			13:36:42	42.81	20.04	148.71	6.56	5.50	843	153		
			13:36:43	42.86	20.04	148.73	6.64	5.58	843	151		
			13:36:44	42.90	20.04	148.98	6.75	5.68	843	148		



**TABLE D-28**

Profile PRO-22 on September 22, 2022 (1326-1337 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

113	Instantaneous Minimum Dilution in Profile
146	Minimum Average Dilution in Profile
168	Plume Average Dilution Detected
942	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:36:45	42.88	20.04	148.98	6.50	5.45	843	155	161	
			13:36:46	42.81	20.04	149.05	7.18	6.07	843	139		
			13:36:47	42.84	20.04	149.00	6.83	5.74	843	147		
			13:36:48	42.89	20.04	148.92	6.65	5.59	843	151		
			13:36:49	42.90	20.04	148.79	6.62	5.56	843	152		
			13:36:50	42.80	20.04	148.97	7.09	5.98	843	141		
			13:36:51	42.85	20.04	148.96	7.22	6.10	843	138		
			13:36:52	42.88	20.04	148.92	7.23	6.11	843	138		
			13:36:53	42.88	20.04	148.88	6.62	5.56	843	152		
			13:36:54	42.83	20.04	148.78	6.29	5.27	843	160		
			13:36:55	42.81	20.04	148.68	6.00	5.01	843	168		
			13:36:56	42.86	20.04	148.69	6.07	5.06	843	166		
			13:36:57	42.90	20.04	148.67	6.20	5.18	843	163		
			13:36:58	42.85	20.04	148.80	6.36	5.33	843	158		
			13:36:59	42.83	20.04	148.82	6.25	5.23	843	161		
			13:37:00	42.83	20.04	148.80	7.98	6.79	843	124		
			13:37:01	42.89	20.04	148.87	6.44	5.40	843	156		
			13:37:02	42.88	20.04	148.90	7.06	5.95	843	142		
			13:37:03	42.82	20.04	148.82	6.71	5.64	843	149		
			13:37:04	42.81	20.04	148.78	6.44	5.40	843	156		
			13:37:05	42.86	20.04	148.86	6.69	5.63	843	150		
			13:37:06	42.90	20.04	148.69	6.58	5.53	843	152		
			13:37:07	42.79	20.04	148.00	4.21	3.40	843	248		
			13:37:08	42.82	20.04	147.47	2.80	2.13	843	396		
			13:37:09	42.88	20.04	146.90	2.14	1.54	843	547		
			13:37:10	42.91	20.04	146.66	1.86	1.29	843	652		
			13:37:11	42.82	20.04	146.68	1.11	0.62	843	1358		
			13:37:12	42.78	20.04	146.70	1.77	1.21	843	695		
			13:37:13	42.89	20.04	146.72	2.43	1.80	843	468		
			13:37:14	42.83	20.04	146.81	2.30	1.69	843	500		
			13:37:15	42.82	20.04	146.82	2.25	1.64	843	515		
			13:37:16	42.84	20.04	147.02	2.03	1.45	843	583		
			13:37:17	42.83	20.04	147.69	2.63	1.98	843	426		
			13:37:18	42.82	20.04	148.06	4.37	3.54	843	238		
			13:37:19	42.78	20.04	148.18	5.63	4.67	843	180		
			13:37:20	42.70	20.04	148.42	6.17	5.16	843	164		

**TABLE D-29**

Profile PRO-23 on September 22, 2022 (1348-1401 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

<b>100</b>	<b>Instantaneous Minimum Dilution in Profile</b>
<b>134</b>	<b>Minimum Average Dilution in Profile</b>
<b>671</b>	<b>Plume Average Dilution Detected</b>
<b>1550</b>	<b>Profile Average Dilution</b>

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-23 (North Mixing Zone Boundary - 242 ft from Diffuser) during Ebb Tide Reversal to Flood Tide	48 ft	0.05 m/sec 150 deg. (mag.) Early Flood Tide	13:48:51	0.69	19.95	57.74	5.80	4.83	837	173	134	Plume measured in surface waters during tidal reversal to flood tide
			13:48:52	1.17	20.03	142.76	5.78	4.81	837	174		
			13:48:53	1.52	20.06	143.19	5.66	4.70	837	178		
			13:48:54	1.85	20.06	142.86	6.22	5.20	837	161		
			13:48:55	1.95	20.02	142.71	6.78	5.70	837	147		
			13:48:56	2.08	20.02	142.65	7.90	6.71	837	125		
			13:48:57	2.05	19.97	142.59	8.11	6.90	837	121		
			13:48:58	2.11	19.97	142.61	6.78	5.70	837	147		
			13:48:59	2.08	20.01	143.05	6.88	5.79	837	144		
			13:49:00	2.02	20.02	143.01	6.44	5.40	837	155		
			13:49:01	1.94	20.03	143.07	6.99	5.89	837	142		
			13:49:02	1.77	20.00	142.97	7.12	6.01	837	139		
			13:49:03	1.72	19.99	142.80	7.70	6.53	837	128		
			13:49:04	1.75	19.95	142.82	8.33	7.10	837	118		
			13:49:05	1.81	19.95	142.78	8.50	7.25	837	115		
			13:49:06	1.74	19.91	142.73	8.16	6.94	837	121		
			13:49:07	1.78	19.92	142.69	8.22	7.00	837	120		
			13:49:08	1.76	19.88	142.63	8.78	7.50	837	112		
			13:49:09	1.78	19.87	142.61	9.13	7.81	837	107		
			13:49:10	1.75	19.85	142.55	9.17	7.85	837	107		
			13:49:11	1.74	19.85	142.56	9.36	8.02	837	104		
			13:49:12	1.77	19.85	142.52	9.67	8.30	837	101		
			13:49:13	1.78	19.84	142.52	9.79	8.41	837	100		
			13:49:14	1.73	19.83	142.47	9.56	8.20	837	102		
			13:49:15	1.75	19.83	142.47	9.43	8.08	837	104		
			13:49:16	1.83	19.81	142.48	7.90	6.71	837	125		
			13:49:17	1.78	19.78	142.56	8.11	6.90	837	121		
			13:49:18	1.77	19.76	142.44	7.85	6.66	837	126		
			13:49:19	1.79	19.76	142.50	7.90	6.71	837	125		
13:49:20	1.82	19.76	142.55	8.11	6.90	837	121					
13:49:21	1.81	19.75	142.48	7.78	6.60	837	127					
13:49:22	1.87	19.75	142.50	9.36	8.02	837	104					
13:49:23	1.89	19.75	142.47	9.67	8.30	837	101					
13:49:24	1.90	19.77	142.51	9.79	8.41	837	100					
13:49:25	1.89	19.77	142.44	9.56	8.20	837	102					
13:49:26	2.02	19.85	142.42	9.43	8.08	837	104					
13:49:27	2.23	19.93	142.59	6.34	5.31	837	158					
13:49:28	2.31	19.98	142.61	6.89	5.80	837	144					
13:49:29	2.24	20.01	142.73	6.95	5.86	837	143					

**TABLE D-29**

Profile PRO-23 on September 22, 2022 (1348-1401 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

100	Instantaneous Minimum Dilution in Profile
134	Minimum Average Dilution in Profile
671	Plume Average Dilution Detected
1550	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:49:30	2.20	20.02	142.78	7.12	6.01	837	139		
			13:49:31	2.29	20.03	142.92	7.85	6.66	837	126		
			13:49:32	2.23	20.03	142.97	7.90	6.71	837	125		
			13:49:33	2.16	20.04	143.03	8.11	6.90	837	121		
			13:49:34	2.19	20.04	143.11	7.85	6.66	837	126		
			13:49:35	2.20	20.05	143.09	7.90	6.71	837	125		
			13:49:36	2.18	20.05	143.05	8.11	6.90	837	121		
			13:49:37	2.14	20.05	143.68	7.78	6.60	837	127		
			13:49:38	2.08	20.05	144.03	4.67	3.81	837	220		
			13:49:39	2.07	20.04	144.07	7.87	6.68	837	125		
			13:49:40	2.07	20.04	144.12	7.65	6.49	837	129		
			13:49:41	2.10	20.04	144.31	7.32	6.19	837	135		
			13:49:42	2.17	20.04	144.48	7.53	6.38	837	131		
			13:49:43	2.18	20.04	144.50	6.87	5.79	837	145		
			13:49:44	2.16	20.04	144.52	6.77	5.70	837	147		
			13:49:45	2.15	20.04	144.55	6.75	5.68	837	147		
			13:49:46	2.14	20.04	144.67	7.87	6.68	837	125		
			13:49:47	2.23	20.04	144.63	7.65	6.49	837	129		
			13:49:48	2.21	20.04	144.46	7.32	6.19	837	135		
			13:49:49	2.20	20.04	144.33	7.53	6.38	837	131		
			13:49:50	2.22	20.04	144.18	6.87	5.79	837	145		
			13:49:51	2.22	20.04	144.24	6.77	5.70	837	147		
			13:49:52	2.24	20.04	144.07	6.75	5.68	837	147		
			13:49:53	2.16	20.04	144.12	6.78	5.70	837	147		
			13:49:54	2.21	20.04	144.03	5.98	4.99	837	168		
			13:49:55	2.23	20.04	144.05	7.87	6.68	837	125		
			13:49:56	2.16	20.04	144.12	7.65	6.49	837	129		
			13:49:57	2.18	20.04	144.07	7.32	6.19	837	135		
			13:49:58	2.21	20.04	144.06	7.53	6.38	837	131		
			13:49:59	2.19	20.04	143.95	6.87	5.79	837	145		
			13:50:00	2.17	20.04	144.02	6.77	5.70	837	147		
			13:50:01	2.14	20.04	143.97	6.75	5.68	837	147		
			13:50:02	2.23	20.04	144.23	6.78	5.70	837	147		
			13:50:03	2.13	20.04	144.47	5.98	4.99	837	168		
			13:50:04	2.16	20.04	144.20	6.87	5.79	837	145		
			13:50:05	2.13	20.04	144.22	6.77	5.70	837	147		
			13:50:06	2.18	20.04	144.41	6.75	5.68	837	147		
			13:50:07	2.16	20.04	144.52	6.78	5.70	837	147		
			13:50:08	2.08	20.04	144.72	5.98	4.99	837	168		

**TABLE D-29**

Profile PRO-23 on September 22, 2022 (1348-1401 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

100	Instantaneous Minimum Dilution in Profile
134	Minimum Average Dilution in Profile
671	Plume Average Dilution Detected
1550	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:50:09	2.15	20.04	144.83	7.87	6.68	837	125		
			13:50:10	2.18	20.04	144.87	7.65	6.49	837	129		
			13:50:11	2.16	20.04	144.85	7.32	6.19	837	135		
			13:50:12	2.21	20.04	144.84	7.53	6.38	837	131		
			13:50:13	2.61	20.04	144.74	6.87	5.79	837	145		
			13:50:14	4.31	20.04	144.77	6.77	5.70	837	147		
			13:50:15	5.10	20.04	145.06	1.73	1.18	837	712		
			13:50:16	5.23	20.04	144.96	1.66	1.11	837	752		
			13:50:17	5.29	20.04	145.00	1.45	0.92	837	911	816	Plume traces detected at 5 ft
			13:50:18	5.28	20.04	144.82	1.46	0.93	837	897		
			13:50:19	5.18	20.04	144.51	1.57	1.03	837	809		
			13:50:20	5.17	20.04	144.43	1.09	0.60	837	1396		
			13:50:21	5.23	20.04	144.48	1.26	0.75	837	1115		
			13:50:22	5.12	20.04	144.33	0.96	0.48	837	1742		
			13:50:23	5.02	20.04	144.29	0.90	0.43	837	1947		
			13:50:24	5.01	20.04	144.27	0.66	0.21	837	3908		
			13:50:25	5.05	20.04	144.24	0.61	0.16	837	5086		
			13:50:26	5.06	20.04	144.22	0.66	0.21	837	3936		
			13:50:27	5.06	20.04	144.18	0.43	0.43	837	1947		
			13:50:28	4.98	20.04	144.12	0.27	0.27	837	3115		
			13:50:29	4.93	20.04	144.07	0.78	0.32	837	2600		
			13:50:30	4.90	20.04	143.98	1.54	1.01	837	831		
			13:50:31	4.91	20.04	143.98	1.25	0.74	837	1125	3053	Plume traces detected at 5 ft
			13:50:32	4.89	20.04	144.00	0.65	0.21	837	4052		
			13:50:33	4.89	20.04	143.95	0.78	0.32	837	2584		
			13:50:34	4.92	20.05	144.00	0.19	0.19	837	4440		
			13:50:35	4.88	20.04	144.00	1.12	0.62	837	1345		
			13:50:36	4.88	20.05	143.98	0.58	0.14	837	5858		
			13:50:37	4.88	20.05	143.99	0.66	0.22	837	3840		
			13:50:38	4.83	20.05	144.03	1.04	0.56	837	1502		
			13:50:39	4.84	20.05	143.76	1.04	0.56	837	1499		
			13:50:40	4.84	20.05	143.68	0.82	0.35	837	2371		
			13:50:41	4.88	20.05	143.49	0.40	0.40	837	2119		
			13:50:42	4.85	20.06	143.51	0.09	0.09	837	8971		
			13:50:43	4.89	20.06	143.55	0.16	0.16	837	5379		
			13:50:44	4.90	20.05	143.70	0.25	0.25	837	3307		
			13:50:45	4.90	20.06	143.55	0.63	0.18	837	4577		
			13:50:46	4.79	20.06	143.57	0.93	0.45	837	1846		
			13:50:47	4.87	20.06	143.53	0.57	0.13	837	6263		

**TABLE D-29**

Profile PRO-23 on September 22, 2022 (1348-1401 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

100	Instantaneous Minimum Dilution in Profile
134	Minimum Average Dilution in Profile
671	Plume Average Dilution Detected
1550	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured	Calibration-	Measured	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							Dye Conc. (ppb)	Corrected Dye Conc. (ppb)	Initial Dye Conc. (ppb)			
			13:50:48	4.87	20.06	143.38	0.02	0.02	837	43368		
			13:50:49	4.85	20.07	143.22	0.23	0.23	837	3600		
			13:50:50	4.83	20.07	143.21	0.37	0.37	837	2253		
			13:50:51	4.85	20.07	143.23	0.02	0.02	837	48103		
			13:50:52	4.86	20.07	143.20	0.02	0.02	837	45738		
			13:50:53	4.85	20.07	143.14	0.02	0.02	837	45243		
			13:50:54	4.85	20.07	143.23	0.06	0.06	837	14582		
			13:50:55	4.87	20.07	143.28	0.17	0.17	837	4844		
			13:50:56	4.88	20.06	143.34	0.02	0.02	837	46243		
			13:50:57	4.83	20.06	143.38	0.02	0.02	837	46243		
			13:50:58	4.83	20.06	143.49	0.16	0.16	837	5379		
			13:50:59	4.84	20.06	143.43	0.02	0.02	837	44759		
			13:51:00	4.83	20.06	143.47	0.02	0.02	837	44759		
			13:51:01	4.83	20.06	143.53	0.02	0.02	837	43144		
			13:51:02	4.77	20.06	143.57	0.02	0.02	837	45243		
			13:51:03	4.86	20.06	143.66	0.48	0.05	837	16156		
			13:51:04	4.85	20.06	143.64	0.02	0.02	837	41436		
			13:51:05	4.82	20.06	143.68	0.02	0.02	837	42704		
			13:51:06	4.85	20.06	143.76	0.04	0.04	837	22143		
			13:51:07	4.85	20.06	143.77	0.02	0.02	837	46243		
			13:51:08	4.84	20.06	143.79	0.10	0.10	837	8279		
			13:51:09	4.86	20.06	143.70	0.02	0.02	837	42487		
			13:51:10	4.86	20.06	143.59	0.02	0.02	837	44286		
			13:51:11	4.87	20.06	143.59	0.03	0.03	837	27900		
			13:51:12	4.86	20.06	143.51	0.02	0.02	837	43822		
			13:51:13	4.82	20.06	143.51	0.02	0.02	837	41850		
			13:51:14	4.83	20.06	143.59	0.02	0.02	837	46243		
			13:51:15	4.85	20.07	143.53	0.02	0.02	837	45738		
			13:51:16	4.85	20.07	143.47	0.02	0.02	837	44286		
			13:51:17	4.83	20.07	143.45	0.02	0.02	837	44759		
			13:51:18	4.82	20.07	143.51	0.02	0.02	837	45243		
			13:51:19	4.83	20.07	143.72	0.02	0.02	837	43368		
			13:51:20	4.78	20.06	143.72	0.02	0.02	837	43368		
			13:51:21	4.82	20.06	143.83	0.02	0.02	837	47022		
			13:51:22	4.92	20.05	143.79	0.02	0.02	837	44759		
			13:51:23	4.97	20.06	143.74	0.02	0.02	837	45243		
			13:51:24	5.08	20.06	143.68	0.09	0.09	837	8952		
			13:51:25	5.01	20.06	143.62	0.06	0.06	837	13632		
			13:51:26	5.13	20.06	143.91	0.04	0.04	837	22500		

**TABLE D-29**

Profile PRO-23 on September 22, 2022 (1348-1401 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

100	Instantaneous Minimum Dilution in Profile
134	Minimum Average Dilution in Profile
671	Plume Average Dilution Detected
1550	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:51:27	4.91	20.06	143.91	0.41	0.41	837	2031		
			13:51:28	4.85	20.05	143.87	0.49	0.06	837	13040		
			13:51:29	4.86	20.05	143.89	0.51	0.08	837	10158		
			13:51:30	4.82	20.05	143.93	0.50	0.07	837	12634		
			13:51:31	4.80	20.05	144.00	0.69	0.24	837	3496		
			13:51:32	4.80	20.05	144.20	0.46	0.03	837	24982		
			13:51:33	4.84	20.05	144.39	0.76	0.31	837	2723		
			13:51:34	4.82	20.05	144.41	0.62	0.18	837	4633		
			13:51:35	4.85	20.05	144.41	0.85	0.39	837	2154		
			13:51:36	4.80	20.05	144.35	1.12	0.63	837	1335		
			13:51:37	4.83	20.05	144.35	0.96	0.49	837	1720		
			13:51:38	4.86	20.05	144.54	0.90	0.43	837	1952		
			13:51:39	4.82	20.05	144.48	0.98	0.50	837	1681		
			13:51:40	4.82	20.05	144.46	0.63	0.18	837	4543		
			13:51:41	4.87	20.05	144.44	1.08	0.59	837	1416		
			13:51:42	4.83	20.05	144.60	1.24	0.73	837	1143	2162	Plume traces at 5 ft
			13:51:43	4.77	20.05	144.68	1.18	0.68	837	1230		
			13:51:44	4.90	20.05	144.60	1.08	0.59	837	1416		
			13:51:45	4.98	20.05	144.43	1.01	0.53	837	1577		
			13:51:46	5.21	20.05	144.43	0.36	0.36	837	2345		
			13:51:47	5.19	20.05	144.52	0.82	0.36	837	2340		
			13:51:48	5.24	20.05	144.53	0.86	0.39	837	2126		
			13:51:49	5.43	20.05	144.50	1.36	0.84	837	991		
			13:51:50	5.44	20.05	144.60	0.66	0.21	837	3942		
			13:51:51	5.70	20.05	144.67	0.94	0.46	837	1815		
			13:51:52	8.15	20.04	144.58	0.78	0.32	837	2581		
			13:51:53	10.24	20.05	144.52	1.59	1.05	837	796		
			13:51:54	10.53	20.05	144.58	0.95	0.47	837	1782		
			13:51:55	10.63	20.05	144.55	0.80	0.34	837	2455		
			13:51:56	10.65	20.05	144.60	0.60	0.16	837	5317		
			13:51:57	10.61	20.05	144.69	0.92	0.44	837	1889		
			13:51:58	10.44	20.04	144.73	1.00	0.52	837	1613		
			13:51:59	10.36	20.04	144.69	1.15	0.65	837	1281		
			13:52:00	10.37	20.04	144.65	1.06	0.57	837	1464		
			13:52:01	10.29	20.04	144.69	0.64	0.20	837	4232		
			13:52:02	10.27	20.05	144.67	0.41	0.41	837	2037		
			13:52:03	10.36	20.05	144.67	0.80	0.34	837	2483		
			13:52:04	10.38	20.05	144.64	0.86	0.40	837	2116		
			13:52:05	10.31	20.05	144.58	0.93	0.46	837	1832		

**TABLE D-29**

Profile PRO-23 on September 22, 2022 (1348-1401 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

100	Instantaneous Minimum Dilution in Profile
134	Minimum Average Dilution in Profile
671	Plume Average Dilution Detected
1550	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:52:06	10.29	20.05	144.65	1.20	0.69	837	1205	1747	Plume traces at 10 ft
			13:52:07	10.36	20.05	144.70	1.28	0.77	837	1088		
			13:52:08	10.36	20.05	144.73	1.13	0.63	837	1326		
			13:52:09	10.34	20.05	144.79	0.92	0.44	837	1890		
			13:52:10	10.31	20.05	144.81	0.65	0.20	837	4093		
			13:52:11	10.37	20.04	144.91	0.99	0.51	837	1629		
			13:52:12	10.30	20.04	144.87	0.84	0.38	837	2206		
			13:52:13	10.31	20.04	144.89	0.66	0.22	837	3854		
			13:52:14	10.34	20.04	144.81	0.42	0.42	837	2016		
			13:52:15	10.37	20.04	144.83	0.39	0.39	837	2124		
			13:52:16	10.33	20.04	144.87	0.94	0.47	837	1797	2076	Plume traces at 10 ft
			13:52:17	10.31	20.04	144.85	1.46	0.93	837	898		
			13:52:18	10.36	20.04	144.83	1.09	0.60	837	1401		
			13:52:19	10.34	20.04	144.87	0.89	0.42	837	2004		
			13:52:20	10.30	20.04	144.91	0.70	0.25	837	3297		
			13:52:21	10.33	20.04	144.89	1.05	0.56	837	1484		
			13:52:22	10.32	20.04	144.91	0.85	0.39	837	2158		
			13:52:23	10.35	20.04	144.87	1.23	0.73	837	1151		
			13:52:24	10.33	20.04	144.75	0.81	0.35	837	2391		
			13:52:25	10.30	20.04	144.68	0.76	0.31	837	2728		
			13:52:26	10.34	20.04	144.68	0.49	0.06	837	13791		
			13:52:27	10.31	20.04	144.58	0.97	0.49	837	1697		
			13:52:28	10.27	20.04	144.41	0.26	0.26	837	3180		
			13:52:29	10.35	20.04	144.32	0.74	0.29	837	2900		
			13:52:30	10.39	20.04	144.35	0.24	0.24	837	3536		
			13:52:31	10.25	20.04	144.35	0.08	0.08	837	10608		
			13:52:32	10.29	20.04	144.29	0.25	0.25	837	3332		
			13:52:33	10.31	20.04	144.27	0.18	0.18	837	4561		
			13:52:34	10.31	20.04	144.27	0.22	0.22	837	3782		
			13:52:35	10.29	20.04	144.24	0.38	0.38	837	2193		
			13:52:36	10.35	20.04	144.29	0.14	0.14	837	5829		
			13:52:37	10.38	20.04	144.33	0.03	0.03	837	26404		
			13:52:38	10.36	20.04	144.37	0.02	0.02	837	34875		
			13:52:39	10.28	20.04	144.37	0.05	0.05	837	15913		
			13:52:40	10.28	20.04	144.39	0.04	0.04	837	23315		
			13:52:41	10.37	20.04	144.35	0.15	0.15	837	5721		
			13:52:42	10.26	20.04	144.36	0.02	0.02	837	43822		
			13:52:43	10.26	20.04	144.33	0.32	0.32	837	2637		
			13:52:44	10.25	20.04	144.39	0.08	0.08	837	10109		

**TABLE D-29**

Profile PRO-23 on September 22, 2022 (1348-1401 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

100	Instantaneous Minimum Dilution in Profile
134	Minimum Average Dilution in Profile
671	Plume Average Dilution Detected
1550	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:52:45	10.29	20.04	144.35	0.43	0.01	837	140425		
			13:52:46	10.20	20.04	144.41	0.10	0.10	837	7994		
			13:52:47	10.15	20.04	144.46	0.02	0.02	837	46760		
			13:52:48	10.21	20.04	144.37	0.02	0.02	837	51037		
			13:52:49	10.21	20.04	144.28	0.03	0.03	837	25833		
			13:52:50	10.14	20.04	144.33	0.02	0.02	837	46760		
			13:52:51	10.18	20.04	144.29	0.05	0.05	837	15500		
			13:52:52	10.22	20.04	144.24	0.02	0.02	837	49821		
			13:52:53	10.17	20.04	144.24	0.02	0.02	837	42704		
			13:52:54	10.14	20.04	144.16	0.02	0.02	837	47557		
			13:52:55	10.26	20.04	144.16	0.02	0.02	837	44286		
			13:52:56	10.29	20.04	144.14	0.02	0.02	837	44286		
			13:52:57	10.28	20.03	144.12	0.02	0.02	837	43144		
			13:52:58	10.27	20.03	144.06	0.11	0.11	837	7714		
			13:52:59	10.27	20.03	143.98	0.02	0.02	837	47288		
			13:53:00	10.30	20.04	143.95	0.04	0.04	837	19510		
			13:53:01	10.28	20.04	143.93	0.02	0.02	837	44759		
			13:53:02	10.22	20.04	143.93	0.02	0.02	837	46243		
			13:53:03	10.41	20.04	143.86	0.02	0.02	837	43368		
			13:53:04	10.51	20.03	143.74	0.02	0.02	837	36872		
			13:53:05	10.56	20.03	143.79	0.02	0.02	837	46760		
			13:53:06	10.57	20.03	143.79	0.02	0.02	837	46243		
			13:53:07	10.61	20.03	143.98	0.02	0.02	837	47829		
			13:53:08	10.57	20.04	144.18	0.02	0.02	837	50422		
			13:53:09	10.54	20.04	144.13	0.13	0.13	837	6312		
			13:53:10	10.53	20.04	144.02	0.02	0.02	837	41850		
			13:53:11	10.64	20.04	144.06	0.02	0.02	837	42704		
			13:53:12	10.53	20.04	144.07	0.05	0.05	837	17293		
			13:53:13	10.48	20.04	144.16	0.02	0.02	837	45243		
			13:53:14	10.57	20.04	144.05	0.02	0.02	837	47288		
			13:53:15	10.58	20.04	144.05	0.02	0.02	837	46760		
			13:53:16	10.62	20.03	144.10	0.02	0.02	837	45243		
			13:53:17	10.61	20.03	144.18	0.08	0.08	837	10000		
			13:53:18	10.58	20.03	144.18	0.02	0.02	837	45243		
			13:53:19	10.50	20.03	144.27	0.02	0.02	837	45243		
			13:53:20	10.43	20.04	144.35	0.12	0.12	837	6822		
			13:53:21	10.42	20.04	144.33	0.02	0.02	837	45243		
			13:53:22	10.51	20.04	144.33	0.02	0.02	837	43368		
			13:53:23	10.46	20.04	144.39	0.08	0.08	837	10084		



**TABLE D-29**

Profile PRO-23 on September 22, 2022 (1348-1401 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

100	Instantaneous Minimum Dilution in Profile
134	Minimum Average Dilution in Profile
671	Plume Average Dilution Detected
1550	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:53:24	10.42	20.04	144.35	0.02	0.02	837	45738		
			13:53:25	10.50	20.04	144.46	0.07	0.07	837	12437		
			13:53:26	10.54	20.04	144.48	0.02	0.02	837	42487		
			13:53:27	10.41	20.04	144.41	0.05	0.05	837	18156		
			13:53:28	10.38	20.04	144.43	0.03	0.03	837	24985		
			13:53:29	10.25	20.04	144.41	0.02	0.02	837	46243		
			13:53:30	10.45	20.04	144.28	0.10	0.10	837	8567		
			13:53:31	10.39	20.04	144.35	0.15	0.15	837	5517		
			13:53:32	10.44	20.04	144.29	0.04	0.04	837	23445		
			13:53:33	10.70	20.04	144.50	0.02	0.02	837	47557		
			13:53:34	11.11	20.04	144.54	0.07	0.07	837	12327		
			13:53:35	13.51	20.04	144.12	0.02	0.02	837	42923		
			13:53:36	15.68	20.03	144.07	0.02	0.02	837	39112		
			13:53:37	16.08	20.03	144.14	0.03	0.03	837	24121		
			13:53:38	16.12	20.03	144.18	0.02	0.02	837	43822		
			13:53:39	16.10	20.03	144.16	0.12	0.12	837	6900		
			13:53:40	16.11	20.03	144.10	0.02	0.02	837	47829		
			13:53:41	16.16	20.03	144.12	0.02	0.02	837	42923		
			13:53:42	16.22	20.03	144.06	0.02	0.02	837	43822		
			13:53:43	16.10	20.03	144.12	0.02	0.02	837	42487		
			13:53:44	16.14	20.03	144.13	0.02	0.02	837	47557		
			13:53:45	16.04	20.03	144.03	0.02	0.02	837	43822		
			13:53:46	15.78	20.03	144.05	0.02	0.02	837	49821		
			13:53:47	15.72	20.03	143.98	0.05	0.05	837	17329		
			13:53:48	15.77	20.03	144.06	0.02	0.02	837	47288		
			13:53:49	15.79	20.03	144.05	0.02	0.02	837	45738		
			13:53:50	15.77	20.03	144.10	0.02	0.02	837	43368		
			13:53:51	15.71	20.03	144.10	0.13	0.13	837	6638		
			13:53:52	15.79	20.03	144.10	0.02	0.02	837	45243		
			13:53:53	15.81	20.03	143.98	0.02	0.02	837	46760		
			13:53:54	15.92	20.03	143.82	0.02	0.02	837	43822		
			13:53:55	15.83	20.02	143.55	0.02	0.02	837	46243		
			13:53:56	15.88	20.02	143.43	0.02	0.02	837	45243		
			13:53:57	15.88	20.02	143.33	0.02	0.02	837	48382		
			13:53:58	15.85	20.02	143.28	0.02	0.02	837	41850		
			13:53:59	15.85	20.02	143.33	0.02	0.02	837	46243		
			13:54:00	15.91	20.02	143.34	0.02	0.02	837	44759		
			13:54:01	15.90	20.02	143.25	0.02	0.02	837	44759		
			13:54:02	15.82	20.02	143.21	0.02	0.02	837	44286		

**TABLE D-29**

Profile PRO-23 on September 22, 2022 (1348-1401 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

100	Instantaneous Minimum Dilution in Profile
134	Minimum Average Dilution in Profile
671	Plume Average Dilution Detected
1550	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:54:03	15.81	20.02	143.23	0.02	0.02	837	46243		
			13:54:04	15.84	20.02	143.12	0.02	0.02	837	45738		
			13:54:05	15.83	20.02	143.01	0.02	0.02	837	42273		
			13:54:06	15.81	20.01	142.97	0.02	0.02	837	45738		
			13:54:07	15.83	20.01	143.07	0.02	0.02	837	45243		
			13:54:08	15.87	20.02	143.31	0.02	0.02	837	45738		
			13:54:09	15.87	20.02	143.70	0.02	0.02	837	43822		
			13:54:10	15.80	20.02	144.02	0.34	0.34	837	2482		
			13:54:11	15.84	20.02	144.28	0.89	0.42	837	1988		
			13:54:12	15.89	20.03	145.11	1.52	0.99	837	849		
			13:54:13	15.81	20.03	145.08	2.28	1.67	837	502		
			13:54:14	15.82	20.03	145.15	2.38	1.75	837	477		
			13:54:15	15.85	20.03	145.15	1.95	1.37	837	610		
			13:54:16	15.89	20.03	145.11	1.47	0.94	837	890	621	Measured plume at 15-16 ft
			13:54:17	15.80	20.03	144.89	1.90	1.33	837	630		
			13:54:18	15.82	20.03	144.45	2.14	1.55	837	542		
			13:54:19	15.87	20.03	144.33	2.08	1.49	837	563		
			13:54:20	15.86	20.03	144.41	2.30	1.68	837	497		
			13:54:21	15.79	20.03	144.29	1.86	1.29	837	648		
			13:54:22	15.83	20.03	144.33	1.19	0.69	837	1217		
			13:54:23	15.88	20.03	143.95	0.13	0.13	837	6399		
			13:54:24	15.81	20.03	143.45	0.02	0.02	837	45243		
			13:54:25	15.83	20.02	143.57	0.02	0.02	837	43368		
			13:54:26	15.86	20.02	143.55	0.38	0.38	837	2178		
			13:54:27	15.82	20.02	143.78	1.41	0.88	837	948		
			13:54:28	15.84	20.03	144.46	1.55	1.01	837	825		
			13:54:29	15.85	20.03	144.91	1.19	0.69	837	1215		
			13:54:30	15.87	20.03	144.27	1.23	0.73	837	1151		
			13:54:31	15.82	20.03	143.93	0.13	0.13	837	6409		
			13:54:32	15.82	20.03	143.51	0.02	0.02	837	41029		
			13:54:33	15.86	20.02	143.34	0.02	0.02	837	45738		
			13:54:34	15.89	20.02	143.28	0.02	0.02	837	44286		
			13:54:35	15.84	20.02	143.20	0.02	0.02	837	44521		
			13:54:36	15.84	20.02	143.25	0.02	0.02	837	43368		
			13:54:37	15.86	20.02	143.34	0.02	0.02	837	48947		
			13:54:38	15.89	20.03	143.36	0.02	0.02	837	43144		
			13:54:39	15.87	20.03	143.34	0.02	0.02	837	43368		
			13:54:40	15.86	20.03	143.36	0.02	0.02	837	44759		
			13:54:41	15.87	20.03	143.30	0.02	0.02	837	44286		

**TABLE D-29**

Profile PRO-23 on September 22, 2022 (1348-1401 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

100	Instantaneous Minimum Dilution in Profile
134	Minimum Average Dilution in Profile
671	Plume Average Dilution Detected
1550	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:54:42	15.90	20.02	143.34	0.02	0.02	837	43822		
			13:54:43	15.82	20.03	144.03	1.05	0.57	837	1478		
			13:54:44	15.83	20.03	144.74	2.16	1.56	837	538		
			13:54:45	15.89	20.04	145.20	2.92	2.24	837	374		
			13:54:46	15.81	20.04	145.51	3.32	2.60	837	322		
			13:54:47	15.88	20.04	145.65	3.68	2.92	837	286		
			13:54:48	15.86	20.04	145.63	3.80	3.03	837	276		
			13:54:49	16.16	20.04	145.50	3.41	2.68	837	312		
			13:54:50	16.05	20.04	145.63	2.97	2.29	837	365		
			13:54:51	16.16	20.04	145.19	2.87	2.20	837	381		
			13:54:52	16.07	20.04	145.43	2.79	2.13	837	394	600	Measured plume at 15-16 ft
			13:54:53	16.12	20.04	145.44	2.54	1.90	837	441		
			13:54:54	16.06	20.04	145.46	1.83	1.26	837	662		
			13:54:55	16.04	20.04	145.39	1.53	1.00	837	840		
			13:54:56	16.06	20.04	145.44	1.66	1.11	837	754		
			13:54:57	16.08	20.04	145.46	1.72	1.17	837	717		
			13:54:58	16.03	20.04	145.38	1.76	1.20	837	699		
			13:54:59	16.08	20.04	145.49	1.33	0.82	837	1025		
			13:55:00	16.10	20.04	145.23	1.23	0.73	837	1151		
			13:55:01	16.06	20.04	145.25	1.73	1.17	837	713		
			13:55:02	16.01	20.04	144.96	1.71	1.16	837	724		
			13:55:03	16.04	20.05	144.85	1.57	1.03	837	809		
			13:55:04	16.08	20.05	145.02	1.66	1.11	837	754		
			13:55:05	16.10	20.05	144.90	1.84	1.27	837	657		
			13:55:06	16.02	20.05	144.96	1.29	0.78	837	1079		
			13:55:07	16.06	20.05	144.66	1.30	0.78	837	1066		
			13:55:08	16.10	20.05	144.65	1.60	1.06	837	789		
			13:55:09	16.13	20.06	144.54	1.36	0.84	837	998	858	Measured plume at 15-16 ft
			13:55:10	16.04	20.05	144.79	1.61	1.07	837	785		
			13:55:11	16.13	20.05	144.63	2.11	1.51	837	553		
			13:55:12	16.09	20.05	144.77	1.42	0.89	837	939		
			13:55:13	16.09	20.05	144.81	1.53	0.99	837	845		
			13:55:14	16.08	20.05	144.94	1.48	0.95	837	885		
			13:55:15	16.12	20.05	144.83	1.18	0.68	837	1236		
			13:55:16	16.13	20.05	144.70	1.07	0.58	837	1439		
			13:55:17	16.07	20.05	144.70	1.42	0.89	837	935		
			13:55:18	16.08	20.05	144.68	1.92	1.34	837	623		
			13:55:19	16.11	20.05	144.46	1.89	1.32	837	635	811	Measured plume at 15-16 ft
			13:55:20	16.12	20.06	144.52	1.54	1.00	837	836		

**TABLE D-29**

Profile PRO-23 on September 22, 2022 (1348-1401 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

100	Instantaneous Minimum Dilution in Profile
134	Minimum Average Dilution in Profile
671	Plume Average Dilution Detected
1550	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:55:21	16.09	20.05	144.56	1.55	1.01	837	830		
			13:55:22	16.09	20.05	144.54	1.61	1.06	837	787		
			13:55:23	16.13	20.05	144.63	1.45	0.92	837	906		
			13:55:24	16.10	20.05	144.67	1.42	0.89	837	936		
			13:55:25	16.12	20.05	144.69	1.21	0.70	837	1190		
			13:55:26	16.10	20.05	144.72	1.07	0.59	837	1429		
			13:55:27	16.13	20.05	144.63	0.76	0.30	837	2771		
			13:55:28	16.12	20.05	144.73	0.88	0.41	837	2027		
			13:55:29	16.07	20.05	144.67	0.93	0.46	837	1835		
			13:55:30	16.03	20.05	144.67	1.27	0.76	837	1096		
			13:55:31	16.06	20.05	144.52	0.79	0.33	837	2540		
			13:55:32	16.04	20.05	144.58	0.94	0.46	837	1804		
			13:55:33	16.06	20.04	144.65	1.01	0.53	837	1585		
			13:55:34	16.05	20.04	144.63	0.67	0.22	837	3782		
			13:55:35	16.09	20.04	144.82	0.33	0.33	837	2538		
			13:55:36	16.08	20.03	144.60	0.07	0.07	837	12219		
			13:55:37	16.02	20.03	144.69	0.33	0.33	837	2512		
			13:55:38	16.09	20.04	144.52	0.54	0.11	837	7669		
			13:55:39	16.12	20.04	144.53	0.49	0.06	837	14567		
			13:55:40	16.11	20.04	144.29	0.39	0.39	837	2138		
			13:55:41	16.02	20.04	144.60	0.03	0.03	837	28664		
			13:55:42	16.11	20.03	144.74	0.07	0.07	837	12363		
			13:55:43	16.10	20.03	144.52	0.17	0.17	837	4805		
			13:55:44	16.02	20.03	144.41	0.45	0.03	837	29297		
			13:55:45	16.02	20.03	144.39	0.41	0.41	837	2027		
			13:55:46	16.05	20.03	144.30	0.80	0.34	837	2473		
			13:55:47	16.10	20.03	144.14	0.64	0.20	837	4224		
			13:55:48	16.03	20.03	144.33	0.11	0.11	837	7904		
			13:55:49	15.98	20.03	144.35	0.41	0.41	837	2020		
			13:55:50	16.07	20.03	144.31	0.36	0.36	837	2347		
			13:55:51	16.04	20.03	144.50	0.91	0.44	837	1909		
			13:55:52	16.01	20.03	144.58	0.99	0.51	837	1645		
			13:55:53	16.04	20.03	144.72	1.24	0.74	837	1137		
			13:55:54	16.04	20.03	145.02	1.40	0.88	837	953		
			13:55:55	16.05	20.03	144.87	1.22	0.72	837	1163		
			13:55:56	16.01	20.03	144.81	1.35	0.83	837	1004		
			13:55:57	16.05	20.03	144.65	1.12	0.63	837	1328		
			13:55:58	16.10	20.03	145.14	0.77	0.32	837	2657		
			13:55:59	16.03	20.03	145.38	1.06	0.57	837	1459		

**TABLE D-29**

Profile PRO-23 on September 22, 2022 (1348-1401 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

100	Instantaneous Minimum Dilution in Profile
134	Minimum Average Dilution in Profile
671	Plume Average Dilution Detected
1550	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:56:00	16.02	20.04	145.39	1.53	1.00	837	841		
			13:56:01	16.05	20.04	145.31	2.03	1.45	837	579		
			13:56:02	16.10	20.03	144.60	1.61	1.07	837	785	859	Measured plume at 15-16 ft
			13:56:03	16.04	20.03	144.41	1.55	1.01	837	828		
			13:56:04	16.07	20.03	144.35	1.83	1.27	837	660		
			13:56:05	16.08	20.03	144.16	0.28	0.28	837	2951		
			13:56:06	16.15	20.03	144.20	0.23	0.23	837	3582		
			13:56:07	16.23	20.03	144.22	0.17	0.17	837	5073		
			13:56:08	16.30	20.03	144.10	0.02	0.02	837	41029		
			13:56:09	16.38	20.03	144.00	0.02	0.02	837	47557		
			13:56:10	16.32	20.03	143.99	0.02	0.02	837	35923		
			13:56:11	16.30	20.03	143.95	0.02	0.02	837	42273		
			13:56:12	16.33	20.03	143.91	0.03	0.03	837	24985		
			13:56:13	16.38	20.03	143.95	0.03	0.03	837	24618		
			13:56:14	16.57	20.03	144.02	0.04	0.04	837	19929		
			13:56:15	17.11	20.03	143.97	0.08	0.08	837	10786		
			13:56:16	19.94	20.03	143.94	0.14	0.14	837	6013		
			13:56:17	21.68	20.02	144.24	0.27	0.27	837	3045		
			13:56:18	21.94	20.02	144.04	0.52	0.09	837	9251		
			13:56:19	21.92	20.02	144.00	0.24	0.24	837	3421		
			13:56:20	21.95	20.02	143.79	0.82	0.36	837	2337	4868	Plume traces at 22 ft
			13:56:21	22.00	20.02	143.64	0.56	0.13	837	6586		
			13:56:22	21.91	20.02	143.83	0.69	0.24	837	3420		
			13:56:23	21.93	20.02	143.81	0.45	0.03	837	31577		
			13:56:24	21.90	20.02	143.83	0.46	0.03	837	26621		
			13:56:25	22.00	20.02	143.87	0.52	0.08	837	9909		
			13:56:26	21.87	20.02	143.87	0.58	0.14	837	5844		
			13:56:27	21.73	20.02	143.83	0.36	0.36	837	2341		
			13:56:28	21.62	20.02	143.85	0.43	0.01	837	117443		
			13:56:29	21.67	20.02	143.83	0.69	0.24	837	3517		
			13:56:30	21.64	20.03	143.87	0.52	0.09	837	9673		
			13:56:31	21.62	20.03	143.94	0.02	0.02	837	44759		
			13:56:32	21.57	20.03	143.98	0.02	0.02	837	49235		
			13:56:33	21.63	20.03	143.95	0.02	0.02	837	49821		
			13:56:34	21.62	20.03	143.91	0.02	0.02	837	42060		
			13:56:35	21.60	20.03	143.95	0.02	0.02	837	44286		
			13:56:36	21.60	20.03	143.98	0.07	0.07	837	12437		
			13:56:37	21.63	20.03	144.00	0.11	0.11	837	7527		
			13:56:38	21.59	20.03	143.98	0.15	0.15	837	5698		

**TABLE D-29**

Profile PRO-23 on September 22, 2022 (1348-1401 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

100	Instantaneous Minimum Dilution in Profile
134	Minimum Average Dilution in Profile
671	Plume Average Dilution Detected
1550	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:56:39	21.53	20.03	143.93	0.02	0.02	837	45243		
			13:56:40	21.62	20.03	143.79	0.02	0.02	837	51037		
			13:56:41	21.68	20.03	143.83	0.02	0.02	837	45243		
			13:56:42	21.57	20.04	143.76	0.02	0.02	837	42923		
			13:56:43	21.62	20.04	143.79	0.02	0.02	837	43822		
			13:56:44	21.71	20.04	143.74	0.02	0.02	837	49235		
			13:56:45	21.64	20.05	143.59	0.02	0.02	837	47557		
			13:56:46	21.60	20.05	143.59	0.02	0.02	837	45738		
			13:56:47	21.59	20.05	143.36	0.02	0.02	837	44286		
			13:56:48	21.72	20.05	143.23	0.02	0.02	837	46243		
			13:56:49	21.62	20.05	143.11	0.02	0.02	837	43368		
			13:56:50	21.59	20.05	143.16	0.02	0.02	837	45243		
			13:56:51	21.62	20.05	143.14	0.02	0.02	837	44286		
			13:56:52	21.63	20.05	143.05	0.02	0.02	837	47829		
			13:56:53	21.61	20.05	142.99	0.02	0.02	837	49235		
			13:56:54	21.60	20.05	142.92	0.02	0.02	837	49235		
			13:56:55	21.63	20.05	142.85	0.02	0.02	837	51037		
			13:56:56	21.67	20.05	142.84	0.02	0.02	837	44286		
			13:56:57	21.63	20.05	142.84	0.02	0.02	837	42704		
			13:56:58	21.55	20.05	142.88	0.02	0.02	837	48103		
			13:56:59	21.63	20.05	142.82	0.02	0.02	837	44286		
			13:57:00	21.65	20.05	142.84	0.02	0.02	837	44286		
			13:57:01	21.58	20.06	142.84	0.02	0.02	837	52313		
			13:57:02	21.58	20.05	142.92	0.02	0.02	837	47288		
			13:57:03	21.63	20.05	143.07	0.02	0.02	837	45738		
			13:57:04	21.63	20.05	143.07	0.02	0.02	837	46243		
			13:57:05	21.61	20.04	143.03	0.02	0.02	837	44759		
			13:57:06	21.53	20.04	143.05	0.02	0.02	837	45243		
			13:57:07	21.61	20.04	142.97	0.02	0.02	837	46243		
			13:57:08	21.65	20.04	143.03	0.02	0.02	837	44759		
			13:57:09	21.59	20.04	143.02	0.02	0.02	837	48103		
			13:57:10	21.56	20.04	143.11	0.02	0.02	837	49821		
			13:57:11	21.65	20.04	143.05	0.02	0.02	837	48947		
			13:57:12	21.64	20.04	142.97	0.02	0.02	837	47022		
			13:57:13	21.58	20.05	142.86	0.02	0.02	837	43822		
			13:57:14	21.57	20.05	142.82	0.02	0.02	837	48663		
			13:57:15	21.66	20.05	142.82	0.02	0.02	837	46760		
			13:57:16	21.59	20.05	142.82	0.02	0.02	837	45243		
			13:57:17	21.61	20.06	142.76	0.02	0.02	837	48103		

**TABLE D-29**

Profile PRO-23 on September 22, 2022 (1348-1401 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

100	Instantaneous Minimum Dilution in Profile
134	Minimum Average Dilution in Profile
671	Plume Average Dilution Detected
1550	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			13:57:18	21.65	20.06	142.73	0.02	0.02	837	48382		
			13:57:19	21.67	20.06	142.69	0.02	0.02	837	45243		
			13:57:20	21.66	20.06	142.69	0.02	0.02	837	48382		
			13:57:21	21.65	20.06	142.69	0.02	0.02	837	45738		
			13:57:22	21.77	20.06	142.67	0.02	0.02	837	43144		
			13:57:23	21.99	20.06	142.78	0.02	0.02	837	43822		
			13:57:24	21.95	20.06	142.78	0.02	0.02	837	49235		
			13:57:25	21.95	20.06	142.84	0.02	0.02	837	44759		
			13:57:26	21.92	20.05	142.88	0.02	0.02	837	45738		
			13:57:27	21.91	20.05	143.01	0.02	0.02	837	44759		
			13:57:28	21.87	20.05	142.99	0.02	0.02	837	45738		
			13:57:29	22.06	20.05	142.97	0.02	0.02	837	44759		
			13:57:30	22.96	20.05	142.97	0.02	0.02	837	45738		
			13:57:31	26.02	20.05	143.11	0.02	0.02	837	49235		
			13:57:32	27.05	20.05	143.11	0.02	0.02	837	54351		
			13:57:33	27.26	20.05	143.09	0.02	0.02	837	44759		
			13:57:34	27.31	20.05	143.12	0.02	0.02	837	47288		
			13:57:35	27.43	20.05	143.01	0.02	0.02	837	44759		
			13:57:36	27.36	20.05	143.05	0.02	0.02	837	46243		
			13:57:37	27.33	20.05	143.00	0.02	0.02	837	46760		
			13:57:38	27.34	20.05	142.99	0.02	0.02	837	47829		
			13:57:39	27.43	20.05	143.01	0.02	0.02	837	43822		
			13:57:40	27.46	20.05	143.07	0.02	0.02	837	46500		
			13:57:41	27.38	20.05	143.16	0.02	0.02	837	49821		
			13:57:42	27.43	20.05	143.18	0.02	0.02	837	47557		
			13:57:43	27.45	20.05	143.17	0.02	0.02	837	48103		
			13:57:44	27.41	20.05	143.12	0.02	0.02	837	47557		
			13:57:45	27.44	20.05	143.17	0.02	0.02	837	47829		
			13:57:46	27.44	20.05	143.07	0.02	0.02	837	45243		
			13:57:47	27.43	20.05	143.03	0.02	0.02	837	44759		
			13:57:48	27.41	20.05	143.09	0.02	0.02	837	49235		
			13:57:49	27.45	20.05	143.05	0.02	0.02	837	47829		
			13:57:50	27.51	20.05	143.10	0.02	0.02	837	48103		
			13:57:51	27.43	20.05	143.07	0.02	0.02	837	49235		
			13:57:52	27.42	20.05	142.99	0.02	0.02	837	49235		
			13:57:53	27.31	20.05	143.07	0.02	0.02	837	44759		
			13:57:54	27.28	20.05	142.97	0.02	0.02	837	39857		
			13:57:55	27.15	20.05	143.03	0.02	0.02	837	44286		
			13:57:56	27.14	20.05	142.97	0.02	0.02	837	43368		

No plume at 27 ft

**TABLE D-29**

Profile PRO-23 on September 22, 2022 (1348-1401 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

100	Instantaneous Minimum Dilution in Profile
134	Minimum Average Dilution in Profile
671	Plume Average Dilution Detected
1550	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:57:57	26.97	20.05	142.98	0.02	0.02	837	50422		
			13:57:58	27.08	20.05	142.97	0.02	0.02	837	41850		
			13:57:59	26.99	20.05	142.97	0.02	0.02	837	45243		
			13:58:00	27.05	20.05	142.82	0.02	0.02	837	46760		
			13:58:01	27.14	20.06	142.84	0.02	0.02	837	46760		
			13:58:02	27.14	20.06	142.88	0.02	0.02	837	44759		
			13:58:03	27.06	20.06	142.78	0.02	0.02	837	45738		
			13:58:04	27.05	20.06	142.69	0.02	0.02	837	49235		
			13:58:05	27.08	20.06	142.65	0.02	0.02	837	51667		
			13:58:06	27.08	20.06	142.61	0.02	0.02	837	44286		
			13:58:07	26.98	20.06	142.63	0.02	0.02	837	45243		
			13:58:08	27.01	20.06	142.63	0.02	0.02	837	48663		
			13:58:09	27.03	20.06	142.59	0.02	0.02	837	46760		
			13:58:10	26.99	20.06	142.59	0.02	0.02	837	46760		
			13:58:11	27.11	20.06	142.59	0.02	0.02	837	45243		
			13:58:12	27.08	20.06	142.61	0.02	0.02	837	47829		
			13:58:13	27.24	20.05	142.73	0.02	0.02	837	43368		
			13:58:14	27.07	20.05	142.78	0.02	0.02	837	44286		
			13:58:15	27.21	20.05	142.90	0.02	0.02	837	48382		
			13:58:16	27.13	20.05	142.84	0.02	0.02	837	46760		
			13:58:17	27.23	20.05	142.90	0.02	0.02	837	47288		
			13:58:18	27.19	20.05	142.90	0.02	0.02	837	42273		
			13:58:19	27.10	20.05	142.78	0.02	0.02	837	47557		
			13:58:20	27.20	20.05	142.73	0.02	0.02	837	44521		
			13:58:21	27.07	20.05	142.78	0.02	0.02	837	46760		
			13:58:22	27.17	20.05	142.69	0.02	0.02	837	47288		
			13:58:23	27.15	20.05	142.80	0.02	0.02	837	45738		
			13:58:24	27.08	20.05	142.86	0.02	0.02	837	42923		
			13:58:25	27.11	20.05	142.88	0.02	0.02	837	43822		
			13:58:26	27.03	20.05	142.97	0.02	0.02	837	47288		
			13:58:27	27.07	20.05	142.84	0.02	0.02	837	48663		
			13:58:28	26.97	20.05	142.71	0.02	0.02	837	44286		
			13:58:29	27.06	20.05	142.73	0.02	0.02	837	45738		
			13:58:30	27.04	20.05	142.73	0.02	0.02	837	47557		
			13:58:31	27.08	20.05	142.71	0.02	0.02	837	47557		
			13:58:32	27.10	20.05	142.71	0.02	0.02	837	47557		
			13:58:33	27.24	20.05	142.78	0.02	0.02	837	41850		
			13:58:34	27.39	20.05	142.82	0.02	0.02	837	43368		
			13:58:35	27.40	20.05	142.78	0.02	0.02	837	47288		



**TABLE D-29**

Profile PRO-23 on September 22, 2022 (1348-1401 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

100	Instantaneous Minimum Dilution in Profile
134	Minimum Average Dilution in Profile
671	Plume Average Dilution Detected
1550	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:58:36	27.40	20.05	142.80	0.02	0.02	837	52313		
			13:58:37	27.36	20.05	142.90	0.02	0.02	837	47288		
			13:58:38	27.49	20.05	143.14	0.02	0.02	837	49821		
			13:58:39	27.73	20.05	143.14	0.02	0.02	837	41850		
			13:58:40	28.18	20.05	143.03	0.02	0.02	837	44286		
			13:58:41	31.13	20.05	142.88	0.02	0.02	837	46243		
			13:58:42	32.48	20.06	142.59	0.02	0.02	837	48382		
			13:58:43	32.71	20.06	142.76	0.02	0.02	837	43822		
			13:58:44	32.80	20.05	142.76	0.02	0.02	837	45738		
			13:58:45	32.82	20.06	142.63	0.02	0.02	837	49235		
			13:58:46	32.78	20.06	142.55	0.02	0.02	837	46243		No plume at 32 ft
			13:58:47	32.71	20.06	142.61	0.02	0.02	837	44759		
			13:58:48	32.75	20.06	142.73	0.02	0.02	837	49235		
			13:58:49	32.76	20.05	142.73	0.02	0.02	837	43822		
			13:58:50	32.76	20.05	142.90	0.02	0.02	837	44759		
			13:58:51	32.75	20.05	143.03	0.02	0.02	837	45738		
			13:58:52	32.76	20.05	143.03	0.02	0.02	837	47829		
			13:58:53	32.71	20.05	143.10	0.02	0.02	837	46760		
			13:58:54	32.75	20.05	143.20	0.02	0.02	837	46243		
			13:58:55	32.72	20.05	143.25	0.02	0.02	837	48382		
			13:58:56	32.77	20.05	143.17	0.02	0.02	837	46243		
			13:58:57	32.75	20.05	143.21	0.02	0.02	837	42923		
			13:58:58	32.81	20.05	143.14	0.02	0.02	837	47288		
			13:58:59	32.84	20.05	143.14	0.02	0.02	837	48947		
			13:59:00	32.84	20.05	143.16	0.02	0.02	837	44759		
			13:59:01	32.84	20.05	143.12	0.02	0.02	837	46243		
			13:59:02	32.80	20.05	143.14	0.02	0.02	837	44286		
			13:59:03	32.87	20.05	143.09	0.02	0.02	837	46760		
			13:59:04	32.83	20.05	143.14	0.02	0.02	837	46760		
			13:59:05	32.85	20.05	143.16	0.02	0.02	837	45243		
			13:59:06	32.87	20.05	143.12	0.02	0.02	837	49821		
			13:59:07	32.88	20.05	143.12	0.02	0.02	837	48103		
			13:59:08	32.90	20.05	143.14	0.02	0.02	837	44286		
			13:59:09	32.85	20.05	143.09	0.02	0.02	837	47288		
			13:59:10	32.83	20.05	143.09	0.02	0.02	837	48103		
			13:59:11	32.80	20.05	143.12	0.02	0.02	837	45738		
			13:59:12	32.83	20.05	143.14	0.02	0.02	837	48103		
			13:59:13	32.79	20.05	143.09	0.02	0.02	837	41850		
			13:59:14	32.80	20.05	143.12	0.02	0.02	837	47829		

**TABLE D-29**

Profile PRO-23 on September 22, 2022 (1348-1401 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

100	Instantaneous Minimum Dilution in Profile
134	Minimum Average Dilution in Profile
671	Plume Average Dilution Detected
1550	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc.	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
							(ppb)	(ppb)	(ppb)			
			13:59:15	32.80	20.05	143.16	0.02	0.02	837	49235		
			13:59:16	32.78	20.05	143.16	0.02	0.02	837	46760		
			13:59:17	32.82	20.05	143.21	0.02	0.02	837	49821		
			13:59:18	32.80	20.05	143.18	0.02	0.02	837	47288		
			13:59:19	32.85	20.05	143.23	0.02	0.02	837	46760		
			13:59:20	32.85	20.05	143.15	0.02	0.02	837	47829		
			13:59:21	33.04	20.05	143.12	0.02	0.02	837	45243		
			13:59:22	34.91	20.05	143.09	0.02	0.02	837	47557		
			13:59:23	37.44	20.05	142.65	0.02	0.02	837	45243		
			13:59:24	38.19	20.05	142.76	0.02	0.02	837	46243		
			13:59:25	38.36	20.06	142.78	0.02	0.02	837	45243		
			13:59:26	38.32	20.05	142.73	0.02	0.02	837	49821		
			13:59:27	38.40	20.05	142.71	0.02	0.02	837	45243		No plume at 38 ft
			13:59:28	38.32	20.05	142.69	0.02	0.02	837	44286		
			13:59:29	38.36	20.05	142.73	0.02	0.02	837	42273		
			13:59:30	38.40	20.05	142.71	0.02	0.02	837	48382		
			13:59:31	38.40	20.05	142.73	0.02	0.02	837	48663		
			13:59:32	38.36	20.05	142.67	0.02	0.02	837	42923		
			13:59:33	38.37	20.05	142.67	0.02	0.02	837	44759		
			13:59:34	38.39	20.05	142.67	0.02	0.02	837	45243		
			13:59:35	38.40	20.05	142.65	0.02	0.02	837	45243		
			13:59:36	38.34	20.05	142.67	0.02	0.02	837	47288		
			13:59:37	38.35	20.05	142.65	0.02	0.02	837	44286		
			13:59:38	38.36	20.05	142.65	0.02	0.02	837	45243		
			13:59:39	38.35	20.05	142.73	0.02	0.02	837	41850		
			13:59:40	38.32	20.05	142.73	0.02	0.02	837	44759		
			13:59:41	38.30	20.05	142.67	0.02	0.02	837	45738		
			13:59:42	38.27	20.05	142.67	0.02	0.02	837	46243		
			13:59:43	38.32	20.05	142.65	0.02	0.02	837	44759		
			13:59:44	38.35	20.05	142.63	0.02	0.02	837	46243		
			13:59:45	38.32	20.05	142.71	0.02	0.02	837	46243		
			13:59:46	38.45	20.05	142.65	0.02	0.02	837	44759		
			13:59:47	38.43	20.05	142.71	0.02	0.02	837	43144		
			13:59:48	38.40	20.05	142.73	0.02	0.02	837	44759		
			13:59:49	38.40	20.05	142.69	0.02	0.02	837	46500		
			13:59:50	38.37	20.05	142.71	0.02	0.02	837	45243		
			13:59:51	38.34	20.05	142.69	0.02	0.02	837	43368		
			13:59:52	38.25	20.05	142.71	0.02	0.02	837	45243		
			13:59:53	38.23	20.05	142.71	0.02	0.02	837	41850		

**TABLE D-29**

Profile PRO-23 on September 22, 2022 (1348-1401 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

100	Instantaneous Minimum Dilution in Profile
134	Minimum Average Dilution in Profile
671	Plume Average Dilution Detected
1550	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			13:59:54	38.33	20.05	142.71	0.02	0.02	837	44759		
			13:59:55	38.30	20.05	142.71	0.02	0.02	837	46760		
			13:59:56	38.23	20.05	142.69	0.02	0.02	837	45243		
			13:59:57	38.25	20.05	142.71	0.02	0.02	837	48663		
			13:59:58	38.30	20.05	142.69	0.02	0.02	837	48103		
			13:59:59	38.31	20.05	142.71	0.02	0.02	837	44286		
			14:00:00	38.36	20.05	142.69	0.02	0.02	837	47557		
			14:00:01	38.31	20.05	142.69	0.02	0.02	837	44286		
			14:00:02	38.40	20.05	142.71	0.02	0.02	837	47557		
			14:00:03	38.35	20.05	142.71	0.02	0.02	837	41850		
			14:00:04	38.29	20.05	142.69	0.02	0.02	837	46243		
			14:00:05	38.32	20.05	142.71	0.02	0.02	837	44286		
			14:00:06	38.30	20.05	142.76	0.02	0.02	837	45243		
			14:00:07	38.33	20.05	142.73	0.02	0.02	837	49821		
			14:00:08	38.34	20.05	142.71	0.02	0.02	837	45243		
			14:00:09	38.39	20.05	142.80	0.02	0.02	837	49821		
			14:00:10	38.34	20.05	142.78	0.02	0.02	837	44759		
			14:00:11	38.29	20.05	142.76	0.02	0.02	837	43144		
			14:00:12	38.46	20.05	142.69	0.02	0.02	837	49235		
			14:00:13	38.95	20.05	142.78	0.02	0.02	837	43144		
			14:00:14	41.63	20.05	142.82	0.02	0.02	837	49235		
			14:00:15	43.48	20.05	142.76	0.02	0.02	837	45738		
			14:00:16	43.75	20.05	142.76	0.02	0.02	837	45243		
			14:00:17	43.87	20.05	142.71	0.02	0.02	837	42923		No plume at 42-44 ft
			14:00:18	43.90	20.05	142.78	0.02	0.02	837	43822		
			14:00:19	43.88	20.05	142.69	0.02	0.02	837	45243		
			14:00:20	43.93	20.05	142.67	0.02	0.02	837	45243		
			14:00:21	43.88	20.06	142.71	0.02	0.02	837	45738		
			14:00:22	43.83	20.06	142.76	0.02	0.02	837	47829		
			14:00:23	43.85	20.05	142.73	0.02	0.02	837	44286		
			14:00:24	43.87	20.05	142.71	0.02	0.02	837	48103		
			14:00:25	43.89	20.05	142.71	0.02	0.02	837	46243		
			14:00:26	43.89	20.05	142.73	0.02	0.02	837	43822		
			14:00:27	43.85	20.05	142.73	0.02	0.02	837	47288		
			14:00:28	43.42	20.05	142.80	0.02	0.02	837	47288		
			14:00:29	43.41	20.05	142.82	0.02	0.02	837	50422		
			14:00:30	43.20	20.05	142.76	0.02	0.02	837	42273		
			14:00:31	42.88	20.05	142.81	0.02	0.02	837	46243		
			14:00:32	42.92	20.05	142.71	0.02	0.02	837	42704		

**TABLE D-29**

Profile PRO-23 on September 22, 2022 (1348-1401 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

100	Instantaneous Minimum Dilution in Profile
134	Minimum Average Dilution in Profile
671	Plume Average Dilution Detected
1550	Profile Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:00:33	42.90	20.05	142.76	0.02	0.02	837	48103		
			14:00:34	42.87	20.05	142.69	0.02	0.02	837	45243		
			14:00:35	42.87	20.05	142.71	0.02	0.02	837	44286		
			14:00:36	42.95	20.05	142.73	0.02	0.02	837	46243		
			14:00:37	42.91	20.05	142.69	0.02	0.02	837	45243		
			14:00:38	42.94	20.05	142.71	0.02	0.02	837	41850		
			14:00:39	42.97	20.05	142.69	0.02	0.02	837	45243		
			14:00:40	42.95	20.05	142.69	0.02	0.02	837	47829		
			14:00:41	42.93	20.05	142.73	0.02	0.02	837	43822		
			14:00:42	42.91	20.05	142.71	0.02	0.02	837	48382		
			14:00:43	42.96	20.05	142.78	0.02	0.02	837	43368		
			14:00:44	42.97	20.05	142.86	0.02	0.02	837	45243		
			14:00:45	42.94	20.05	142.84	0.02	0.02	837	46243		
			14:00:46	42.90	20.05	142.88	0.02	0.02	837	42923		
			14:00:47	43.00	20.05	142.88	0.02	0.02	837	54706		
			14:00:48	42.89	20.05	142.86	0.02	0.02	837	45243		
			14:00:49	42.90	20.05	142.86	0.02	0.02	837	44286		
			14:00:50	42.77	20.05	142.88	0.02	0.02	837	46243		
			14:00:51	42.90	20.05	142.88	0.02	0.02	837	46243		
			14:00:52	42.85	20.05	142.90	0.02	0.02	837	48947		
			14:00:53	42.84	20.05	142.88	0.02	0.02	837	48103		
			14:00:54	42.84	20.05	142.84	0.02	0.02	837	48663		
			14:00:55	42.88	20.05	142.82	0.02	0.02	837	44759		
			14:00:56	42.84	20.05	142.86	0.02	0.02	837	45738		
			14:00:57	42.83	20.05	142.92	0.02	0.02	837	45738		
			14:00:58	42.97	20.05	142.95	0.02	0.02	837	45738		
			14:00:59	42.87	20.05	143.02	0.02	0.02	837	47288		
			14:01:00	42.90	20.05	143.02	0.02	0.02	837	43368		

**TABLE D-30**

Profile PRO-24 on September 22, 2022 (1404-1407 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

1667	Instantaneous Minimum Dilution in Profile
4678	Minimum Average Dilution in Profile
6156	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-24 (North Mixing Zone Boundary - 242 ft from Diffuser) Early Flood Tide - Measure Background Plume Overlap	48 ft	0.05 m/sec 142 deg. (mag.) Early Flood Tide	14:04:02	2.44	20.06	141.29	0.22	0.22	840	3836	4678	Plume traces measured near surface
			14:04:03	2.48	20.06	141.09	0.28	0.28	840	3053		
			14:04:04	2.50	20.06	140.77	0.27	0.27	840	3132		
			14:04:05	2.46	20.04	140.90	0.11	0.11	840	7362		
			14:04:06	2.45	20.06	141.16	0.11	0.11	840	7794		
			14:04:07	2.47	20.07	141.10	0.37	0.37	840	2253		
			14:04:08	2.41	20.07	141.12	0.12	0.12	840	6977		
			14:04:09	2.52	20.07	140.94	0.28	0.28	840	3020		
			14:04:10	2.40	20.08	140.81	0.02	0.02	840	41176		
			14:04:11	2.30	20.08	140.81	0.02	0.02	840	47458		
			14:04:12	2.12	20.06	140.85	0.09	0.09	840	9535	7634	Plume traces measured near surface
			14:04:13	2.18	20.06	140.68	0.09	0.09	840	9003		
			14:04:14	2.16	20.05	140.85	0.19	0.19	840	4364		
			14:04:15	2.20	20.06	140.81	0.02	0.02	840	43077		
			14:04:16	2.17	20.05	140.95	0.02	0.02	840	40000		
			14:04:17	2.16	20.06	141.05	0.02	0.02	840	46409		
			14:04:18	2.19	20.07	141.18	0.02	0.02	840	47458		
			14:04:19	2.17	20.07	141.35	0.02	0.02	840	46927		
			14:04:20	2.18	20.07	141.33	0.02	0.02	840	44444		
			14:04:21	2.20	20.07	141.56	0.02	0.02	840	43979		
			14:04:22	2.18	20.07	141.37	0.02	0.02	840	46927		
			14:04:23	2.19	20.06	141.50	0.02	0.02	840	46409		
			14:04:24	2.17	20.06	141.07	0.02	0.02	840	46927		
			14:04:25	2.18	20.06	141.03	0.02	0.02	840	49412		
			14:04:26	2.14	20.06	140.84	0.02	0.02	840	47727		
			14:04:27	2.14	20.06	140.79	0.02	0.02	840	48276		
			14:04:28	2.10	20.05	140.72	0.02	0.02	840	46927		
			14:04:29	2.18	20.04	140.83	0.02	0.02	840	43979		
			14:04:30	2.19	20.04	140.60	0.02	0.02	840	47727		
			14:04:31	2.15	20.03	140.51	0.02	0.02	840	44920		
			14:04:32	2.15	20.02	140.45	0.02	0.02	840	46927		
			14:04:33	2.18	20.01	140.51	0.02	0.02	840	45405		
			14:04:34	2.13	20.01	140.36	0.02	0.02	840	50000		
14:04:35	2.13	19.98	140.49	0.02	0.02	840	47458					
14:04:36	2.14	19.96	140.36	0.02	0.02	840	48000					
14:04:37	2.11	19.94	140.49	0.02	0.02	840	44444					
14:04:38	2.18	19.94	140.38	0.02	0.02	840	47458					
14:04:39	2.15	19.93	140.33	0.02	0.02	840	42000					
14:04:40	2.16	19.92	140.25	0.02	0.02	840	44444					

**TABLE D-30**

Profile PRO-24 on September 22, 2022 (1404-1407 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

1667	Instantaneous Minimum Dilution in Profile
4678	Minimum Average Dilution in Profile
6156	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:04:41	2.20	19.90	140.26	0.02	0.02	840	47458		
			14:04:42	2.15	19.90	140.22	0.02	0.02	840	46409		
			14:04:43	2.18	19.90	140.31	0.02	0.02	840	43979		
			14:04:44	2.15	19.90	140.26	0.02	0.02	840	44920		
			14:04:45	2.14	19.95	142.68	0.02	0.02	840	45405		
			14:04:46	2.13	20.05	143.05	0.02	0.02	840	49123		
			14:04:47	2.13	20.06	142.97	0.02	0.02	840	48837		
			14:04:48	2.17	20.06	143.02	0.02	0.02	840	48000		
			14:04:49	2.15	20.06	143.01	0.02	0.02	840	49412		
			14:04:50	2.19	20.06	143.01	0.02	0.02	840	43979		
			14:04:51	2.15	20.06	143.01	0.02	0.02	840	50000		
			14:04:52	2.16	20.06	142.97	0.02	0.02	840	46927		
			14:04:53	2.18	20.06	142.97	0.02	0.02	840	46927		
			14:04:54	2.15	20.06	142.99	0.02	0.02	840	50000		
			14:04:55	2.14	20.06	142.97	0.02	0.02	840	50000		
			14:04:56	2.12	20.06	142.99	0.02	0.02	840	42640		
			14:04:57	2.14	20.06	143.01	0.02	0.02	840	43523		
			14:04:58	2.19	20.06	143.01	0.02	0.02	840	45902		
			14:04:59	2.15	20.06	142.97	0.02	0.02	840	47727		
			14:05:00	2.20	20.06	143.01	0.02	0.02	840	47458		
			14:05:01	2.12	20.06	142.94	0.02	0.02	840	44444		
			14:05:02	2.17	20.06	142.97	0.02	0.02	840	48837		
			14:05:03	2.19	20.06	142.95	0.02	0.02	840	45902		
			14:05:04	2.17	20.06	142.97	0.02	0.02	840	45902		
			14:05:05	2.18	20.06	142.97	0.02	0.02	840	46409		
			14:05:06	2.14	20.06	142.97	0.02	0.02	840	45902		
			14:05:07	2.15	20.06	142.99	0.02	0.02	840	49123		
			14:05:08	2.22	20.06	142.98	0.02	0.02	840	44920		
			14:05:09	2.36	20.06	142.99	0.02	0.02	840	47458		
			14:05:10	2.44	20.06	142.95	0.02	0.02	840	49412		
			14:05:11	2.55	20.06	142.99	0.02	0.02	840	45902		
			14:05:12	2.76	20.07	143.07	0.02	0.02	840	45405		
			14:05:13	3.18	20.07	143.01	0.02	0.02	840	45902		
			14:05:14	5.15	20.07	142.86	0.02	0.02	840	46409		
			14:05:15	5.58	20.07	142.90	0.02	0.02	840	42000		
			14:05:16	5.57	20.07	142.92	0.02	0.02	840	44920		
			14:05:17	5.63	20.06	142.97	0.02	0.02	840	46409		
			14:05:18	5.63	20.06	142.92	0.02	0.02	840	44444		
			14:05:19	5.72	20.06	142.95	0.02	0.02	840	44211		

**TABLE D-30**

Profile PRO-24 on September 22, 2022 (1404-1407 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

1667	Instantaneous Minimum Dilution in Profile
4678	Minimum Average Dilution in Profile
6156	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:05:20	5.77	20.06	142.99	0.02	0.02	840	49412		
			14:05:21	5.85	20.06	143.01	0.02	0.02	840	46409		
			14:05:22	5.98	20.06	143.04	0.98	0.50	840	1667		Possible plume trace?
			14:05:23	6.28	20.06	143.07	0.02	0.02	840	52500		
			14:05:24	6.23	20.06	143.03	0.02	0.02	840	42424		
			14:05:25	6.41	20.06	143.05	0.02	0.02	840	44920		
			14:05:26	6.38	20.06	143.01	0.02	0.02	840	44920		
			14:05:27	6.41	20.06	143.03	0.02	0.02	840	44444		
			14:05:28	6.45	20.06	143.07	0.02	0.02	840	51852		
			14:05:29	6.39	20.06	143.00	0.02	0.02	840	45902		
			14:05:30	6.39	20.06	143.03	0.02	0.02	840	46409		
			14:05:31	6.37	20.06	142.97	0.02	0.02	840	47458		
			14:05:32	6.40	20.06	142.99	0.02	0.02	840	46927		
			14:05:33	6.37	20.06	143.03	0.02	0.02	840	46409		
			14:05:34	6.35	20.06	142.99	0.02	0.02	840	41584		
			14:05:35	6.40	20.06	142.97	0.02	0.02	840	44920		
			14:05:36	6.39	20.06	142.94	0.02	0.02	840	45405		
			14:05:37	6.39	20.06	142.97	0.15	0.15	840	5749		Possible plume trace?
			14:05:38	6.41	20.06	142.97	0.07	0.07	840	12613		
			14:05:39	6.44	20.06	143.03	0.09	0.09	840	9333		Possible plume trace?
			14:05:40	7.43	20.06	143.07	0.02	0.02	840	42424		
			14:05:41	8.57	20.07	143.05	0.02	0.02	840	44920		
			14:05:42	9.60	20.06	143.09	0.02	0.02	840	42640		
			14:05:43	10.43	20.07	142.95	0.02	0.02	840	46409		
			14:05:44	11.35	20.07	143.01	0.02	0.02	840	49412		
			14:05:45	12.09	20.07	142.99	0.02	0.02	840	46409		No plume detected below 10 ft
			14:05:46	12.82	20.07	142.92	0.02	0.02	840	47191		
			14:05:47	13.59	20.07	142.95	0.02	0.02	840	46927		
			14:05:48	14.32	20.07	142.99	0.02	0.02	840	46409		
			14:05:49	15.05	20.07	142.95	0.02	0.02	840	46667		
			14:05:50	15.73	20.07	142.94	0.02	0.02	840	43979		
			14:05:51	16.47	20.07	143.01	0.02	0.02	840	47458		
			14:05:52	17.03	20.07	142.92	0.02	0.02	840	48555		
			14:05:53	17.62	20.07	142.99	0.02	0.02	840	48000		
			14:05:54	18.22	20.07	143.01	0.02	0.02	840	43299		
			14:05:55	18.87	20.06	143.01	0.02	0.02	840	47458		
			14:05:56	19.55	20.06	143.09	0.02	0.02	840	46409		
			14:05:57	20.17	20.05	143.10	0.02	0.02	840	46927		
			14:05:58	20.67	20.05	143.05	0.02	0.02	840	44920		

**TABLE D-30**

Profile PRO-24 on September 22, 2022 (1404-1407 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

1667	Instantaneous Minimum Dilution in Profile
4678	Minimum Average Dilution in Profile
6156	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:05:59	21.35	20.06	143.05	0.02	0.02	840	44444		
			14:06:00	22.03	20.06	143.05	0.02	0.02	840	44920		
			14:06:01	22.66	20.05	143.07	0.02	0.02	840	48276		
			14:06:02	23.29	20.05	143.09	0.02	0.02	840	43299		
			14:06:03	23.90	20.06	143.07	0.02	0.02	840	46667		
			14:06:04	24.52	20.06	143.06	0.02	0.02	840	50602		
			14:06:05	25.11	20.06	143.07	0.02	0.02	840	47458		
			14:06:06	25.80	20.06	143.11	0.02	0.02	840	43077		
			14:06:07	26.36	20.06	143.09	0.02	0.02	840	49412		
			14:06:08	26.88	20.06	143.14	0.02	0.02	840	51852		
			14:06:09	27.72	20.06	143.14	0.02	0.02	840	45902		
			14:06:10	28.44	20.06	143.12	0.02	0.02	840	46927		
			14:06:11	29.15	20.06	143.12	0.02	0.02	840	49123		
			14:06:12	29.87	20.06	143.14	0.02	0.02	840	49412		
			14:06:13	30.74	20.06	143.12	0.02	0.02	840	46409		
			14:06:14	31.60	20.05	143.14	0.02	0.02	840	47458		
			14:06:15	32.39	20.06	143.16	0.02	0.02	840	47458		
			14:06:16	33.20	20.05	143.14	0.02	0.02	840	47458		
			14:06:17	33.96	20.05	143.20	0.02	0.02	840	49123		
			14:06:18	34.62	20.05	143.16	0.02	0.02	840	44444		
			14:06:19	35.31	20.06	143.20	0.02	0.02	840	42857		
			14:06:20	36.11	20.05	143.23	0.02	0.02	840	48555		
			14:06:21	36.77	20.05	143.16	0.02	0.02	840	46927		
			14:06:22	37.42	20.06	143.12	0.02	0.02	840	48276		
			14:06:23	38.15	20.06	143.12	0.02	0.02	840	45902		
			14:06:24	38.63	20.06	143.09	0.02	0.02	840	48837		
			14:06:25	38.93	20.06	143.12	0.02	0.02	840	44444		
			14:06:26	39.56	20.05	143.16	0.02	0.02	840	43299		
			14:06:27	40.45	20.06	143.09	0.02	0.02	840	49412		
			14:06:28	41.08	20.06	143.14	0.02	0.02	840	43299		
			14:06:29	41.65	20.06	143.12	0.02	0.02	840	46927		
			14:06:30	42.07	20.06	143.14	0.02	0.02	840	48837		
			14:06:31	42.54	20.05	143.12	0.02	0.02	840	47727		
			14:06:32	42.84	20.06	143.10	0.02	0.02	840	46409		
			14:06:33	43.11	20.06	143.09	0.02	0.02	840	51852		
			14:06:34	43.13	20.06	143.14	0.02	0.02	840	42857		
			14:06:35	43.07	20.06	143.18	0.02	0.02	840	49123		
			14:06:36	43.02	20.06	143.07	0.02	0.02	840	46409		
			14:06:37	42.60	20.06	143.14	0.02	0.02	840	50602		



**TABLE D-30**

Profile PRO-24 on September 22, 2022 (1404-1407 hours PDT) located at North Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

1667	Instantaneous Minimum Dilution in Profile
4678	Minimum Average Dilution in Profile
6156	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:06:38	42.65	20.06	143.14	0.02	0.02	840	43979		
			14:06:39	42.57	20.06	143.10	0.02	0.02	840	45405		
			14:06:40	41.64	20.06	143.14	0.02	0.02	840	47458		
			14:06:41	40.50	20.06	143.16	0.02	0.02	840	48000		
			14:06:42	39.15	20.06	143.14	0.02	0.02	840	43979		
			14:06:43	38.07	20.06	143.16	0.02	0.02	840	45405		
			14:06:44	36.78	20.06	143.16	0.02	0.02	840	47727		
			14:06:45	35.49	20.06	143.14	0.02	0.02	840	46409		
			14:06:46	33.87	20.06	143.10	0.02	0.02	840	44444		
			14:06:47	32.12	20.06	143.09	0.02	0.02	840	48837		
			14:06:48	30.59	20.06	143.16	0.02	0.02	840	55629		
			14:06:49	28.73	20.06	143.14	0.02	0.02	840	47458		
			14:06:50	27.05	20.06	143.09	0.02	0.02	840	49412		
			14:06:51	25.38	20.06	143.11	0.02	0.02	840	50000		
			14:06:52	23.84	20.06	143.05	0.02	0.02	840	46927		
			14:06:53	22.32	20.06	143.06	0.02	0.02	840	46409		
			14:06:54	20.63	20.06	142.99	0.02	0.02	840	45405		
			14:06:55	18.65	20.06	142.99	0.02	0.02	840	44681		
			14:06:56	16.76	20.07	143.03	0.02	0.02	840	44681		
			14:06:57	15.01	20.07	142.99	0.02	0.02	840	46409		
			14:06:58	13.09	20.07	142.99	0.02	0.02	840	49412		
			14:06:59	11.28	20.07	142.97	0.02	0.02	840	45405		
			14:07:00	9.41	20.06	142.90	0.02	0.02	840	44444		
			14:07:01	7.52	20.06	143.03	0.02	0.02	840	47458		
			14:07:02	5.97	20.06	143.09	0.02	0.02	840	46409		
			14:07:03	4.47	20.07	143.09	0.02	0.02	840	45902		
			14:07:04	2.77	20.07	143.19	0.02	0.02	840	46927		

**TABLE D-31**

Profile PRO-25 on September 22, 2022 (1440-1450 hours PDT) located at South Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

20	Instantaneous Minimum Dilution in Profile
32	Minimum Average Dilution in Profile
42	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-25 (South Acute Zone Boundary - 24 ft from Diffuser)	48 ft	0.24 m/sec 168 deg. (mag.) Flood Tide	14:40:36	2.77	20.06	143.83	0.02	0.02	838	42323		
			14:40:37	2.73	20.07	143.83	0.02	0.02	838	41485		
			14:40:38	2.81	20.07	143.87	0.02	0.02	838	43196		
			14:40:39	2.61	20.07	143.83	0.02	0.02	838	47614		
			14:40:40	2.05	20.07	143.83	0.02	0.02	838	41900		
			14:40:41	2.29	20.07	143.85	0.02	0.02	838	43874		
			14:40:42	2.31	20.07	143.83	0.02	0.02	838	44339		
			14:40:43	2.30	20.07	143.79	0.02	0.02	838	41900		
			14:40:44	2.32	20.07	143.85	0.02	0.02	838	47345		
			14:40:45	2.31	20.07	143.74	0.02	0.02	838	47614		
			14:40:46	2.22	20.06	143.74	0.02	0.02	838	44813		
			14:40:47	2.36	20.06	143.79	0.02	0.02	838	46816		
			14:40:48	2.18	20.07	143.74	0.02	0.02	838	43420		
			14:40:49	2.16	20.07	143.76	0.02	0.02	838	45297		
			14:40:50	2.19	20.06	143.74	0.02	0.02	838	43874		
			14:40:51	2.21	20.06	143.72	0.02	0.02	838	44813		
			14:40:52	2.20	20.06	143.72	0.02	0.02	838	47345		
			14:40:53	2.19	20.06	143.70	0.02	0.02	838	41900		
			14:40:54	2.19	20.06	143.69	0.02	0.02	838	41900		
			14:40:55	2.18	20.07	143.76	0.02	0.02	838	45792		
			14:40:56	2.20	20.07	143.83	0.02	0.02	838	48721		
			14:40:57	2.18	20.08	143.85	0.02	0.02	838	44339		
			14:40:58	2.18	20.09	143.93	0.02	0.02	838	43874		
			14:40:59	2.16	20.10	143.87	0.02	0.02	838	43420		
			14:41:00	2.16	20.10	143.97	0.02	0.02	838	46816		
			14:41:01	2.26	20.11	143.97	0.02	0.02	838	44339		
			14:41:02	2.28	20.12	144.03	0.02	0.02	838	47345		
			14:41:03	2.32	20.13	144.03	0.02	0.02	838	43196		
14:41:04	2.30	20.14	144.12	0.02	0.02	838	45792					
14:41:05	2.29	20.16	144.16	0.02	0.02	838	48439					
14:41:06	2.35	20.17	144.20	0.02	0.02	838	42538					
14:41:07	2.28	20.19	144.24	0.02	0.02	838	42323					
14:41:08	2.31	20.19	144.22	0.02	0.02	838	44813					
14:41:09	2.28	20.20	144.33	0.02	0.02	838	45297					
14:41:10	2.26	20.22	144.33	0.02	0.02	838	41900					
14:41:11	2.36	20.21	144.31	0.02	0.02	838	45297					
14:41:12	3.11	20.20	144.10	0.02	0.02	838	42974					
14:41:13	6.38	20.10	143.72	0.02	0.02	838	43420					
14:41:14	7.18	20.08	143.75	0.02	0.02	838	44813					

**TABLE D-31**

Profile PRO-25 on September 22, 2022 (1440-1450 hours PDT) located at South Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

20	Instantaneous Minimum Dilution in Profile
32	Minimum Average Dilution in Profile
42	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:41:15	7.40	20.08	143.83	0.02	0.02	838	44813		No plume detected at 7 ft
			14:41:16	7.45	20.09	143.85	0.02	0.02	838	46298		
			14:41:17	7.48	20.10	143.91	0.02	0.02	838	48721		
			14:41:18	7.52	20.10	143.62	0.02	0.02	838	42974		
			14:41:19	7.54	20.06	143.34	0.02	0.02	838	45297		
			14:41:20	7.39	20.06	143.38	0.02	0.02	838	46816		
			14:41:21	7.46	20.06	143.43	0.02	0.02	838	48161		
			14:41:22	7.45	20.06	143.38	0.02	0.02	838	44813		
			14:41:23	7.57	20.05	143.26	0.02	0.02	838	43420		
			14:41:24	7.51	20.05	143.26	0.02	0.02	838	44339		
			14:41:25	7.51	20.05	143.25	0.02	0.02	838	44339		
			14:41:26	7.48	20.06	143.26	0.02	0.02	838	47345		
			14:41:27	7.54	20.06	143.36	0.02	0.02	838	45297		
			14:41:28	7.46	20.06	143.40	0.02	0.02	838	44813		
			14:41:29	7.51	20.06	143.38	0.02	0.02	838	47345		
			14:41:30	7.49	20.06	143.45	0.02	0.02	838	46298		
			14:41:31	7.46	20.06	143.38	0.02	0.02	838	43420		
			14:41:32	7.49	20.06	143.40	0.02	0.02	838	41078		
			14:41:33	7.49	20.06	143.47	0.02	0.02	838	45297		
			14:41:34	7.55	20.06	143.47	0.02	0.02	838	43196		
			14:41:35	7.48	20.06	143.51	0.02	0.02	838	42974		
			14:41:36	7.46	20.06	143.49	0.02	0.02	838	41900		
			14:41:37	7.48	20.06	143.51	0.02	0.02	838	44574		
			14:41:38	7.51	20.06	143.51	0.02	0.02	838	43420		
			14:41:39	7.43	20.06	143.53	0.02	0.02	838	40680		
			14:41:40	7.49	20.06	143.51	0.02	0.02	838	48161		
			14:41:41	7.39	20.06	143.49	0.02	0.02	838	45297		
			14:41:42	7.41	20.06	143.49	0.02	0.02	838	47345		
			14:41:43	7.42	20.06	143.49	0.02	0.02	838	43874		
			14:41:44	7.42	20.06	143.47	0.02	0.02	838	43874		
			14:41:45	7.47	20.06	143.33	0.02	0.02	838	46816		
			14:41:46	7.51	20.06	143.38	0.02	0.02	838	45297		
			14:41:47	7.64	20.06	143.43	0.02	0.02	838	41900		
			14:41:48	9.54	20.06	143.31	0.02	0.02	838	43420		
			14:41:49	12.08	20.07	143.06	0.02	0.02	838	42111		
			14:41:50	12.63	20.07	143.16	0.02	0.02	838	41900		
			14:41:51	12.77	20.07	143.11	0.02	0.02	838	46298	No plume detected at 12-13 ft	
			14:41:52	12.77	20.07	143.20	0.02	0.02	838	43196		
			14:41:53	12.74	20.07	143.22	0.02	0.02	838	44813		

**TABLE D-31**

Profile PRO-25 on September 22, 2022 (1440-1450 hours PDT) located at South Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

20	Instantaneous Minimum Dilution in Profile
32	Minimum Average Dilution in Profile
42	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:41:54	12.66	20.07	143.21	0.02	0.02	838	42974		
			14:41:55	12.79	20.07	143.16	0.02	0.02	838	42538		
			14:41:56	12.69	20.07	143.14	0.02	0.02	838	42974		
			14:41:57	12.76	20.07	143.16	0.02	0.02	838	44105		
			14:41:58	12.73	20.07	143.16	0.02	0.02	838	44813		
			14:41:59	12.69	20.07	143.23	0.02	0.02	838	44339		
			14:42:00	12.75	20.07	143.23	0.02	0.02	838	42538		
			14:42:01	12.74	20.07	143.25	0.02	0.02	838	44813		
			14:42:02	12.77	20.07	143.25	0.02	0.02	838	45297		
			14:42:03	12.70	20.07	143.26	0.02	0.02	838	46816		
			14:42:04	12.73	20.07	143.23	0.02	0.02	838	43874		
			14:42:05	12.76	20.07	143.23	0.02	0.02	838	42538		
			14:42:06	12.79	20.07	143.20	0.02	0.02	838	43874		
			14:42:07	12.74	20.07	143.23	0.02	0.02	838	44339		
			14:42:08	12.71	20.07	143.25	0.02	0.02	838	44813		
			14:42:09	12.73	20.07	143.32	0.02	0.02	838	44339		
			14:42:10	12.73	20.07	143.32	0.02	0.02	838	46298		
			14:42:11	12.78	20.07	143.25	0.02	0.02	838	42538		
			14:42:12	12.74	20.07	143.11	0.02	0.02	838	42323		
			14:42:13	12.72	20.07	143.14	0.02	0.02	838	47345		
			14:42:14	12.76	20.07	143.11	0.02	0.02	838	46298		
			14:42:15	12.77	20.07	143.09	0.02	0.02	838	48721		
			14:42:16	12.82	20.07	143.06	0.02	0.02	838	49294		
			14:42:17	12.97	20.07	143.07	0.02	0.02	838	43874		
			14:42:18	13.83	20.07	143.14	0.02	0.02	838	43420		
			14:42:19	16.93	20.06	142.97	0.02	0.02	838	42111		
			14:42:20	18.18	20.05	142.90	0.02	0.02	838	45792		
			14:42:21	18.45	20.04	142.90	0.02	0.02	838	45792		
			14:42:22	18.50	20.05	142.90	0.02	0.02	838	43874		
			14:42:23	18.43	20.05	142.94	0.02	0.02	838	44339		
			14:42:24	18.42	20.05	142.99	0.02	0.02	838	49006		No plume detected at 18 ft
			14:42:25	18.42	20.05	142.97	0.02	0.02	838	42323		
			14:42:26	18.46	20.05	142.99	0.02	0.02	838	49006		
			14:42:27	18.49	20.06	143.09	0.02	0.02	838	43874		
			14:42:28	18.43	20.06	143.14	0.02	0.02	838	44813		
			14:42:29	18.42	20.06	143.14	0.02	0.02	838	45792		
			14:42:30	18.43	20.06	143.16	0.02	0.02	838	43874		
			14:42:31	18.44	20.06	143.11	0.02	0.02	838	42974		
			14:42:32	18.46	20.06	143.03	0.02	0.02	838	39905		

**TABLE D-31**

Profile PRO-25 on September 22, 2022 (1440-1450 hours PDT) located at South Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

20	Instantaneous Minimum Dilution in Profile
32	Minimum Average Dilution in Profile
42	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:42:33	18.49	20.05	143.03	0.02	0.02	838	42111		
			14:42:34	18.51	20.05	143.05	0.02	0.02	838	42323		
			14:42:35	18.45	20.06	143.14	0.02	0.02	838	48161		
			14:42:36	18.50	20.06	143.05	0.02	0.02	838	45297		
			14:42:37	18.52	20.05	143.10	0.02	0.02	838	47345		
			14:42:38	18.49	20.05	143.11	0.02	0.02	838	43874		
			14:42:39	18.52	20.05	143.07	0.02	0.02	838	45297		
			14:42:40	18.48	20.05	143.05	0.02	0.02	838	41485		
			14:42:41	18.56	20.05	143.03	0.02	0.02	838	45792		
			14:42:42	18.54	20.05	142.84	0.02	0.02	838	45297		
			14:42:43	18.51	20.04	142.73	0.02	0.02	838	46816		
			14:42:44	18.52	20.04	142.71	0.02	0.02	838	43874		
			14:42:45	18.53	20.04	142.80	0.02	0.02	838	44339		
			14:42:46	18.60	20.04	142.69	0.02	0.02	838	42974		
			14:42:47	18.50	20.04	142.69	0.02	0.02	838	46816		
			14:42:48	18.52	20.04	142.69	0.02	0.02	838	41078		
			14:42:49	18.51	20.04	142.65	0.02	0.02	838	45297		
			14:42:50	18.47	20.03	142.63	0.02	0.02	838	45297		
			14:42:51	18.54	20.03	142.49	0.02	0.02	838	41485		
			14:42:52	18.55	20.03	142.48	0.02	0.02	838	45792		
			14:42:53	18.52	20.03	142.61	0.02	0.02	838	46298		
			14:42:54	18.46	20.04	142.63	0.02	0.02	838	43874		
			14:42:55	18.53	20.04	142.56	0.02	0.02	838	47345		
			14:42:56	18.52	20.03	142.52	0.02	0.02	838	44339		
			14:42:57	18.56	20.03	142.49	0.02	0.02	838	45297		
			14:42:58	18.49	20.03	142.52	0.02	0.02	838	47614		
			14:42:59	18.51	20.03	142.47	0.02	0.02	838	47886		
			14:43:00	18.55	20.03	142.50	0.02	0.02	838	45792		
			14:43:01	18.65	20.03	142.46	0.02	0.02	838	47079		
			14:43:02	19.19	20.03	142.48	0.02	0.02	838	44339		
			14:43:03	21.60	20.03	142.34	0.02	0.02	838	43420		
			14:43:04	23.46	20.02	141.96	0.02	0.02	838	43874		
			14:43:05	23.76	20.02	142.28	0.02	0.02	838	43420		
			14:43:06	23.83	20.03	142.28	0.02	0.02	838	44813		No plume detected at 23 ft
			14:43:07	23.85	20.03	142.13	0.02	0.02	838	43196		
			14:43:08	23.87	20.02	142.06	0.02	0.02	838	44339		
			14:43:09	23.85	20.02	142.08	0.02	0.02	838	44339		
			14:43:10	23.89	20.03	142.44	0.02	0.02	838	46298		
			14:43:11	23.85	20.03	142.50	0.02	0.02	838	44339		

**TABLE D-31**

Profile PRO-25 on September 22, 2022 (1440-1450 hours PDT) located at South Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

20	Instantaneous Minimum Dilution in Profile
32	Minimum Average Dilution in Profile
42	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:43:12	23.81	20.03	142.37	0.02	0.02	838	45792		
			14:43:13	23.86	20.03	142.17	0.02	0.02	838	41900		
			14:43:14	23.82	20.03	142.15	0.02	0.02	838	43420		
			14:43:15	23.92	20.03	142.25	0.02	0.02	838	47614		
			14:43:16	23.86	20.03	142.48	0.02	0.02	838	46816		
			14:43:17	23.88	20.04	142.38	0.02	0.02	838	47614		
			14:43:18	23.85	20.03	142.36	0.02	0.02	838	46816		
			14:43:19	23.88	20.03	142.26	0.02	0.02	838	46816		
			14:43:20	23.89	20.03	142.21	0.02	0.02	838	47614		
			14:43:21	23.86	20.03	142.30	0.02	0.02	838	49881		
			14:43:22	23.88	20.03	142.40	0.02	0.02	838	49881		
			14:43:23	23.89	20.03	142.30	0.02	0.02	838	43196		
			14:43:24	24.22	20.03	142.30	0.02	0.02	838	46816		
			14:43:25	24.36	20.03	142.46	0.02	0.02	838	46298		
			14:43:26	24.30	20.04	142.48	0.02	0.02	838	44105		
			14:43:27	24.31	20.03	142.17	0.02	0.02	838	44813		
			14:43:28	25.82	20.02	142.04	0.02	0.02	838	46298		
			14:43:29	28.28	20.02	142.11	0.02	0.02	838	45792		No plume detected at 28 ft
			14:43:30	28.79	20.01	142.13	0.02	0.02	838	42538		
			14:43:31	28.83	20.02	142.23	0.02	0.02	838	44339		
			14:43:32	28.83	20.02	142.32	0.02	0.02	838	43874		
			14:43:33	28.85	20.03	142.35	0.02	0.02	838	41485		
			14:43:34	28.80	20.03	142.49	0.02	0.02	838	47614		
			14:43:35	28.82	20.03	142.49	0.02	0.02	838	39159		
			14:43:36	28.83	20.03	142.34	0.02	0.02	838	42974		
			14:43:37	28.82	20.03	142.34	0.02	0.02	838	45297		
			14:43:38	28.88	20.03	142.42	0.02	0.02	838	43196		
			14:43:39	28.82	20.03	142.54	0.02	0.02	838	42538		
			14:43:40	28.88	20.03	142.54	0.02	0.02	838	48161		
			14:43:41	28.80	20.03	142.61	0.02	0.02	838	40680		
			14:43:42	28.83	20.03	142.65	0.02	0.02	838	46298		
			14:43:43	28.86	20.03	142.55	0.02	0.02	838	43420		
			14:43:44	28.91	20.03	142.50	0.02	0.02	838	45792		
			14:43:45	28.81	20.03	142.63	0.02	0.02	838	45297		
			14:43:46	28.81	20.03	142.63	0.02	0.02	838	45792		
			14:43:47	28.85	20.03	142.56	0.02	0.02	838	46298		
			14:43:48	28.89	20.03	142.44	0.02	0.02	838	46298		
			14:43:49	28.83	20.03	142.44	0.02	0.02	838	46556		
			14:43:50	28.81	20.03	142.50	0.02	0.02	838	44339		

**TABLE D-31**

Profile PRO-25 on September 22, 2022 (1440-1450 hours PDT) located at South Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

20	Instantaneous Minimum Dilution in Profile
32	Minimum Average Dilution in Profile
42	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:43:51	28.83	20.03	142.44	0.02	0.02	838	43874		
			14:43:52	28.90	20.03	142.30	0.02	0.02	838	48161		
			14:43:53	28.87	20.02	142.30	0.02	0.02	838	47345		
			14:43:54	28.88	20.02	142.01	0.02	0.02	838	44813		
			14:43:55	28.84	20.02	141.92	0.02	0.02	838	43420		
			14:43:56	28.85	20.02	142.13	0.02	0.02	838	46298		
			14:43:57	28.90	20.02	142.02	0.02	0.02	838	43874		
			14:43:58	28.86	20.02	141.96	0.02	0.02	838	47345		
			14:43:59	28.79	20.02	141.98	0.02	0.02	838	46816		
			14:44:00	28.80	20.02	141.86	0.02	0.02	838	44339		
			14:44:01	28.87	20.02	141.68	0.02	0.02	838	45297		
			14:44:02	28.87	20.02	141.44	0.02	0.02	838	45297		
			14:44:03	28.81	20.02	140.46	0.02	0.02	838	41900		
			14:44:04	28.86	20.01	140.42	0.02	0.02	838	46298		
			14:44:05	28.90	20.01	140.57	0.02	0.02	838	46816		
			14:44:06	28.90	20.01	140.57	0.02	0.02	838	48161		
			14:44:07	28.87	20.01	140.28	0.02	0.02	838	43874		
			14:44:08	28.84	20.01	140.16	0.02	0.02	838	41485		
			14:44:09	28.84	20.01	140.26	0.02	0.02	838	44813		
			14:44:10	28.85	20.01	140.66	0.02	0.02	838	44813		
			14:44:11	28.85	20.01	140.83	0.02	0.02	838	45792		
			14:44:12	28.76	20.02	141.38	0.02	0.02	838	45792		
			14:44:13	28.85	20.02	141.68	0.02	0.02	838	42974		
			14:44:14	28.90	20.02	141.82	0.02	0.02	838	44339		
			14:44:15	28.91	20.02	141.92	0.02	0.02	838	40680		
			14:44:16	28.83	20.02	141.99	0.02	0.02	838	46298		
			14:44:17	29.07	20.02	142.11	0.02	0.02	838	47345		
			14:44:18	29.21	20.03	142.19	0.02	0.02	838	45792		
			14:44:19	29.42	20.03	141.98	0.02	0.02	838	53038		
			14:44:20	29.54	20.02	142.02	0.02	0.02	838	45297		
			14:44:21	32.07	20.01	138.99	0.02	0.02	838	43874		
			14:44:22	34.11	19.99	138.58	0.02	0.02	838	46816		
			14:44:23	34.48	19.99	138.58	0.02	0.02	838	46298		No plume detected at 34 ft
			14:44:24	34.49	19.99	138.67	0.02	0.02	838	42111		
			14:44:25	34.51	19.99	138.71	0.02	0.02	838	46816		
			14:44:26	34.49	19.99	138.80	0.02	0.02	838	51098		
			14:44:27	34.51	19.99	138.84	0.02	0.02	838	43874		
			14:44:28	34.37	19.99	138.82	0.02	0.02	838	44339		
			14:44:29	34.16	19.99	138.84	0.02	0.02	838	39905		

**TABLE D-31**

Profile PRO-25 on September 22, 2022 (1440-1450 hours PDT) located at South Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

20	Instantaneous Minimum Dilution in Profile
32	Minimum Average Dilution in Profile
42	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:44:30	34.17	19.99	138.78	0.02	0.02	838	46298		
			14:44:31	34.23	19.99	138.46	0.02	0.02	838	44813		
			14:44:32	34.25	19.98	138.33	0.02	0.02	838	46298		
			14:44:33	34.18	19.98	138.03	0.02	0.02	838	42974		
			14:44:34	34.17	19.98	137.69	0.02	0.02	838	49881		
			14:44:35	34.23	19.97	137.63	0.02	0.02	838	46556		
			14:44:36	34.25	19.97	137.49	0.02	0.02	838	46298		
			14:44:37	34.19	19.97	137.29	0.02	0.02	838	47345		
			14:44:38	34.10	19.97	137.29	0.02	0.02	838	44813		
			14:44:39	34.24	19.97	137.29	0.02	0.02	838	51098		
			14:44:40	34.27	19.97	138.04	0.02	0.02	838	47614		
			14:44:41	34.20	19.98	138.40	0.02	0.02	838	42974		
			14:44:42	34.10	19.98	138.48	0.02	0.02	838	42974		
			14:44:43	34.20	19.98	137.84	0.02	0.02	838	44339		
			14:44:44	34.24	19.97	137.33	0.02	0.02	838	43874		
			14:44:45	34.23	19.97	137.17	0.02	0.02	838	42974		
			14:44:46	34.12	19.97	137.03	0.02	0.02	838	49006		
			14:44:47	34.11	19.97	136.99	0.02	0.02	838	46298		
			14:44:48	34.27	19.97	136.88	0.02	0.02	838	45792		
			14:44:49	34.23	19.97	136.84	0.02	0.02	838	50482		
			14:44:50	34.16	19.97	136.91	0.02	0.02	838	44813		
			14:44:51	34.08	19.97	136.97	0.02	0.02	838	42974		
			14:44:52	34.16	19.97	137.10	0.02	0.02	838	44813		
			14:44:53	34.29	19.97	137.07	0.02	0.02	838	43420		
			14:44:54	34.22	19.97	137.14	0.02	0.02	838	41078		
			14:44:55	34.13	19.97	137.12	0.02	0.02	838	43420		
			14:44:56	34.21	19.97	136.88	0.02	0.02	838	47886		
			14:44:57	34.38	19.97	137.28	0.02	0.02	838	45297		
			14:44:58	34.51	19.98	137.98	0.02	0.02	838	43874		
			14:44:59	34.42	19.98	138.02	0.02	0.02	838	49881		
			14:45:00	34.40	19.98	138.11	0.02	0.02	838	42111		
			14:45:01	34.61	19.98	138.27	0.02	0.02	838	45792		
			14:45:02	34.56	19.98	138.27	0.02	0.02	838	46816		
			14:45:03	34.39	19.98	138.14	0.02	0.02	838	51098		
			14:45:04	34.39	19.98	138.13	0.02	0.02	838	44813		
			14:45:05	34.60	19.98	138.27	0.02	0.02	838	41485		
			14:45:06	34.63	19.98	138.44	0.02	0.02	838	45297		
			14:45:07	34.41	19.98	138.25	0.02	0.02	838	42974		
			14:45:08	34.42	19.98	138.25	0.02	0.02	838	44339		



**TABLE D-31**

Profile PRO-25 on September 22, 2022 (1440-1450 hours PDT) located at South Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

20	Instantaneous Minimum Dilution in Profile
32	Minimum Average Dilution in Profile
42	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:45:09	34.53	19.98	138.15	0.02	0.02	838	44813		Diffuser port plume measured at 37 ft
			14:45:10	34.59	19.98	137.85	0.02	0.02	838	48439		
			14:45:11	34.49	19.98	138.34	0.02	0.02	838	46816		
			14:45:12	34.42	19.99	139.07	0.02	0.02	838	42974		
			14:45:13	34.54	19.99	139.34	0.02	0.02	838	48161		
			14:45:14	34.64	20.00	140.02	0.02	0.02	838	51098		
			14:45:15	34.55	20.00	140.25	0.02	0.02	838	47886		
			14:45:16	34.45	20.00	140.14	0.02	0.02	838	45297		
			14:45:17	34.54	20.00	140.79	0.02	0.02	838	44813		
			14:45:18	34.63	20.00	141.39	0.02	0.02	838	45297		
			14:45:19	34.73	20.00	140.95	0.02	0.02	838	46298		
			14:45:20	34.86	20.01	140.64	0.02	0.02	838	48721		
			14:45:21	36.29	20.03	157.35	13.55	11.78	838	71	35	
			14:45:22	37.19	20.12	165.29	33.56	29.73	838	28		
			14:45:23	37.29	20.11	156.82	27.96	24.70	838	34		
			14:45:24	37.25	20.08	153.63	34.70	30.76	838	27		
			14:45:25	37.28	20.08	159.54	46.98	41.77	838	20		
			14:45:26	37.34	20.11	159.71	34.84	30.88	838	27		
			14:45:27	37.14	20.07	147.60	5.30	4.38	838	192		
			14:45:28	36.91	20.02	143.16	4.13	3.33	838	252		
			14:45:29	36.90	20.00	139.04	1.95	1.37	838	613		
			14:45:30	36.93	19.98	137.95	0.02	0.02	838	43420		
			14:45:31	37.08	19.99	142.18	7.50	6.35	838	132		
			14:45:32	36.96	20.00	142.40	12.69	11.01	838	76		
			14:45:33	36.88	20.00	140.57	1.83	1.27	838	662		
			14:45:34	36.98	19.98	137.03	0.02	0.02	838	46298		
			14:45:35	37.08	19.97	136.70	0.02	0.02	838	49881		
			14:45:36	36.94	19.97	136.72	0.02	0.02	838	48161		
			14:45:37	36.84	19.97	136.55	0.02	0.02	838	44339		
			14:45:38	36.99	19.97	136.49	0.02	0.02	838	47345		
			14:45:39	37.07	19.97	136.24	0.02	0.02	838	46298		
			14:45:40	36.98	19.97	136.30	0.02	0.02	838	46298		
			14:45:41	36.87	19.97	136.55	0.02	0.02	838	45297		
			14:45:42	36.97	19.97	136.97	0.02	0.02	838	46298		
			14:45:43	37.00	19.97	137.09	0.02	0.02	838	47345		
			14:45:44	36.96	19.97	137.01	0.02	0.02	838	49881		
			14:45:45	36.87	19.97	136.97	0.02	0.02	838	46298		
			14:45:46	36.97	19.97	136.93	0.02	0.02	838	42538		
			14:45:47	37.03	19.97	137.08	0.02	0.02	838	41900		

**TABLE D-31**

Profile PRO-25 on September 22, 2022 (1440-1450 hours PDT) located at South Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

20	Instantaneous Minimum Dilution in Profile
32	Minimum Average Dilution in Profile
42	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:45:48	36.99	19.97	137.12	0.02	0.02	838	42538		
			14:45:49	36.93	19.97	137.14	0.02	0.02	838	43874		
			14:45:50	36.91	19.98	137.54	0.02	0.02	838	42755		
			14:45:51	37.04	19.98	137.51	0.02	0.02	838	44339		
			14:45:52	37.07	19.98	137.31	0.02	0.02	838	50482		
			14:45:53	36.94	19.97	136.99	0.02	0.02	838	46298		
			14:45:54	36.97	19.97	136.80	0.02	0.02	838	49294		
			14:45:55	37.08	19.97	136.96	0.02	0.02	838	50482		
			14:45:56	37.06	19.97	137.01	0.02	0.02	838	43874		
			14:45:57	36.90	19.97	136.80	0.02	0.02	838	51098		
			14:45:58	36.99	19.97	136.98	0.05	0.05	838	17944		
			14:45:59	36.98	19.97	137.84	12.80	11.10	838	75		
			14:46:00	36.95	19.98	139.64	28.84	25.50	838	33	56	Diffuser port plume measured at 37 ft
			14:46:01	36.97	20.00	142.52	16.29	14.24	838	59		
			14:46:02	36.92	19.99	138.85	1.90	1.32	838	633		
			14:46:03	36.95	19.98	137.77	0.02	0.02	838	47614		
			14:46:04	37.02	19.98	137.29	0.02	0.02	838	45792		
			14:46:05	36.97	19.98	137.43	0.02	0.02	838	44813		
			14:46:06	36.91	19.98	137.25	0.02	0.02	838	42755		
			14:46:07	37.07	19.98	139.95	19.55	17.16	838	49		
			14:46:08	37.08	20.00	142.36	31.68	28.05	838	30		
			14:46:09	36.94	20.00	142.86	37.79	33.53	838	25		
			14:46:10	36.97	20.02	147.51	38.41	34.08	838	25	33	Diffuser port plume measured at 37 ft
			14:46:11	37.05	20.03	145.96	32.53	28.81	838	29		
			14:46:12	37.02	20.03	148.35	44.03	39.12	838	21		
			14:46:13	37.01	20.05	149.05	33.13	29.34	838	29		
			14:46:14	36.95	20.03	142.78	25.05	22.10	838	38		
			14:46:15	36.96	20.00	139.62	7.97	16.56	838	51		
			14:46:16	36.99	19.99	139.18	0.12	0.12	838	6886		
			14:46:17	36.97	19.99	138.67	0.02	0.02	838	41900		
			14:46:18	36.86	19.99	138.56	0.02	0.02	838	46556		
			14:46:19	36.99	19.99	138.88	0.02	0.02	838	47886		
			14:46:20	37.01	20.00	143.33	0.02	0.02	838	42323		
			14:46:21	36.87	20.03	149.83	5.24	4.32	838	194		
			14:46:22	36.85	20.04	146.69	11.14	9.62	838	87		
			14:46:23	36.96	20.03	149.60	0.34	0.34	838	2453		
			14:46:24	36.96	20.04	144.70	0.02	0.02	838	45297		
			14:46:25	37.02	20.01	143.45	0.96	0.49	838	1725		
			14:46:26	36.92	20.03	149.79	19.79	17.37	838	48		

**TABLE D-31**

Profile PRO-25 on September 22, 2022 (1440-1450 hours PDT) located at South Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

20	Instantaneous Minimum Dilution in Profile
32	Minimum Average Dilution in Profile
42	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:46:27	36.96	20.04	145.07	22.18	19.52	838	43	46	Diffuser port plume measured at 37 ft
			14:46:28	37.01	20.00	141.10	2.43	1.80	838	465		
			14:46:29	36.94	19.99	139.41	0.02	0.02	838	44813		
			14:46:30	36.92	19.99	138.91	0.02	0.02	838	45297		
			14:46:31	37.04	19.99	138.37	0.02	0.02	838	46816		
			14:46:32	36.96	19.99	138.54	0.02	0.02	838	45297		
			14:46:33	36.92	19.99	138.51	0.02	0.02	838	46298		
			14:46:34	36.89	19.99	138.54	0.02	0.02	838	43874		
			14:46:35	37.01	19.99	138.44	0.02	0.02	838	42974		
			14:46:36	36.96	19.99	138.33	0.02	0.02	838	44813		
			14:46:37	36.88	19.99	138.27	0.02	0.02	838	45792		
			14:46:38	36.94	19.98	138.15	0.02	0.02	838	46816		
			14:46:39	36.96	19.98	138.04	0.02	0.02	838	45792		
			14:46:40	37.04	19.98	137.57	0.02	0.02	838	44339		
			14:46:41	36.83	19.98	137.50	0.02	0.02	838	49881		
			14:46:42	36.91	19.98	136.96	0.02	0.02	838	43420		
			14:46:43	36.94	19.98	137.36	0.02	0.02	838	44813		
			14:46:44	36.95	19.98	137.14	0.02	0.02	838	45297		
			14:46:45	36.89	19.98	137.03	0.02	0.02	838	46298		
			14:46:46	36.93	19.98	137.20	0.02	0.02	838	42323		
			14:46:47	36.98	19.98	137.37	0.02	0.02	838	46816		
			14:46:48	36.92	19.98	137.48	0.02	0.02	838	45792		
			14:46:49	36.87	19.98	137.65	0.02	0.02	838	44813		
			14:46:50	36.91	19.98	137.70	0.02	0.02	838	45792		
			14:46:51	36.91	19.98	137.81	0.02	0.02	838	47345		
			14:46:52	36.91	19.98	137.85	0.02	0.02	838	46816		
			14:46:53	36.92	19.99	142.08	0.02	0.02	838	46298		
			14:46:54	36.91	20.00	140.37	0.02	0.02	838	49294		
			14:46:55	37.03	20.00	139.93	0.02	0.02	838	47614		
			14:46:56	36.95	20.00	139.17	0.02	0.02	838	43420		
			14:46:57	36.87	19.99	138.91	0.02	0.02	838	44339		
			14:46:58	36.99	19.99	138.73	0.02	0.02	838	46816		
			14:46:59	36.98	19.99	138.56	0.02	0.02	838	45792		
			14:47:00	36.90	19.99	138.36	0.02	0.02	838	47886		
			14:47:01	36.94	19.99	138.08	0.02	0.02	838	49006		
			14:47:02	36.98	19.98	137.75	0.02	0.02	838	44339		
			14:47:03	36.96	19.98	137.72	0.02	0.02	838	44339		
			14:47:04	36.91	19.98	137.70	0.02	0.02	838	46816		
			14:47:05	36.87	19.98	137.60	0.02	0.02	838	44339		

**TABLE D-31**

Profile PRO-25 on September 22, 2022 (1440-1450 hours PDT) located at South Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

20	Instantaneous Minimum Dilution in Profile
32	Minimum Average Dilution in Profile
42	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:47:06	36.99	19.98	137.89	0.02	0.02	838	47345		
			14:47:07	36.96	19.98	137.77	0.02	0.02	838	41485		
			14:47:08	36.95	19.98	137.55	0.02	0.02	838	44813		
			14:47:09	37.09	19.98	137.01	0.02	0.02	838	42538		
			14:47:10	37.25	19.98	136.35	0.02	0.02	838	44339		
			14:47:11	37.35	19.97	136.79	0.02	0.02	838	42111		
			14:47:12	37.19	19.98	136.87	0.02	0.02	838	44339		
			14:47:13	37.18	19.97	135.78	0.02	0.02	838	44339		
			14:47:14	37.62	19.97	135.09	0.02	0.02	838	45792		
			14:47:15	38.81	19.96	134.87	9.63	8.26	838	101		
			14:47:16	39.65	19.96	137.89	13.60	11.82	838	71		
			14:47:17	39.90	19.99	140.13	18.50	16.22	838	52		
			14:47:18	40.03	20.00	145.47	29.77	26.33	838	32		
			14:47:19	40.02	20.03	149.88	37.85	33.58	838	25	42	Diffuser port plume measured at 39-40 ft
			14:47:20	39.89	20.04	148.85	38.79	34.42	838	24		
			14:47:21	39.86	20.04	147.70	29.26	25.88	838	32		
			14:47:22	39.82	20.03	148.47	25.83	22.79	838	37		
			14:47:23	39.69	20.03	145.19	14.80	12.90	838	65		
			14:47:24	39.64	20.00	140.17	6.84	5.76	838	145		
			14:47:25	39.58	20.00	142.50	6.98	5.88	838	142		
			14:47:26	39.69	20.00	139.08	1.51	0.97	838	860		
			14:47:27	39.67	19.98	136.88	0.02	0.02	838	42538		
			14:47:28	39.62	19.97	136.43	0.02	0.02	838	46816		
			14:47:29	39.66	19.98	139.62	1.20	0.70	838	1199		
			14:47:30	39.71	20.00	143.48	10.56	9.09	838	92		
			14:47:31	39.65	20.01	143.34	10.10	8.68	838	97		
			14:47:32	39.65	20.01	143.33	3.99	3.20	838	262		
			14:47:33	39.65	20.02	146.26	0.11	0.11	838	7550		
			14:47:34	39.73	20.01	140.82	0.02	0.02	838	48161		
			14:47:35	39.67	20.01	142.68	0.02	0.02	838	46298		
			14:47:36	39.60	19.99	138.47	0.02	0.02	838	46298		
			14:47:37	39.68	19.99	139.58	0.02	0.02	838	45792		
			14:47:38	39.64	19.99	139.44	0.02	0.02	838	44339		
			14:47:39	39.69	19.98	136.76	0.02	0.02	838	44813		
			14:47:40	39.65	19.98	136.45	0.02	0.02	838	43420		
			14:47:41	39.65	19.97	135.76	0.02	0.02	838	46816		
			14:47:42	39.65	19.97	135.54	0.02	0.02	838	44813		
			14:47:43	39.63	19.97	135.50	0.02	0.02	838	52375		
			14:47:44	39.66	19.97	135.50	0.02	0.02	838	49006		

**TABLE D-31**

Profile PRO-25 on September 22, 2022 (1440-1450 hours PDT) located at South Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

20	Instantaneous Minimum Dilution in Profile
32	Minimum Average Dilution in Profile
42	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:47:45	39.78	19.97	135.44	0.02	0.02	838	42974		
			14:47:46	39.62	19.97	135.48	0.02	0.02	838	44813		
			14:47:47	39.73	19.97	135.52	0.02	0.02	838	48161		
			14:47:48	39.63	19.97	135.52	0.02	0.02	838	43874		
			14:47:49	39.72	19.97	135.38	0.02	0.02	838	47345		
			14:47:50	39.73	19.97	135.33	0.02	0.02	838	41485		
			14:47:51	39.59	19.97	139.62	5.76	4.79	838	175		
			14:47:52	39.69	20.01	146.94	27.12	23.95	838	35		
			14:47:53	39.71	20.03	147.10	32.16	28.48	838	29		
			14:47:54	39.66	20.03	144.96	25.56	22.55	838	37	51	Diffuser port plume measured at 39-40 ft
			14:47:55	39.71	20.01	141.39	17.71	15.52	838	54		
			14:47:56	39.69	20.00	139.91	10.05	8.64	838	97		
			14:47:57	39.78	20.00	141.01	9.90	8.50	838	99		
			14:47:58	39.76	20.00	143.41	9.10	7.78	838	108		
			14:47:59	39.63	20.01	145.49	6.86	5.78	838	145		
			14:48:00	39.80	20.04	151.61	12.29	10.65	838	79		
			14:48:01	39.74	20.05	149.02	22.32	19.65	838	43		
			14:48:02	39.77	20.02	142.54	21.15	18.60	838	45		
			14:48:03	39.63	20.02	147.69	30.94	27.38	838	31		
			14:48:04	39.70	20.03	145.59	39.15	34.75	838	24		
			14:48:05	39.73	20.02	146.59	37.66	33.41	838	25		
			14:48:06	39.63	20.04	147.77	35.98	31.90	838	26		
			14:48:07	39.68	20.03	145.75	33.99	30.12	838	28	40	Diffuser port plume measured at 39-40 ft
			14:48:08	39.69	20.02	144.92	26.63	23.51	838	36		
			14:48:09	39.81	20.02	144.94	26.21	23.14	838	36		
			14:48:10	39.66	20.03	147.06	25.83	22.80	838	37		
			14:48:11	39.59	20.03	147.84	26.21	23.13	838	36		
			14:48:12	39.79	20.04	148.16	24.53	21.63	838	39		
			14:48:13	39.72	20.03	145.78	25.21	22.24	838	38		
			14:48:14	39.63	20.03	143.91	23.41	20.63	838	41		
			14:48:15	39.72	20.01	140.56	12.94	11.23	838	75		
			14:48:16	39.71	20.00	138.25	3.70	2.94	838	285		
			14:48:17	39.80	19.98	136.08	2.18	1.58	838	530		
			14:48:18	39.59	19.98	136.07	0.14	0.14	838	5836		
			14:48:19	39.72	19.98	141.34	10.47	9.01	838	93		
			14:48:20	39.77	20.02	144.07	32.20	28.51	838	29		
			14:48:21	39.58	20.02	145.71	29.00	25.64	838	33		
			14:48:22	39.65	20.03	146.11	29.50	26.08	838	32	38	Diffuser port plume measured at 39-40 ft
			14:48:23	39.71	20.02	141.44	27.20	24.03	838	35		

**TABLE D-31**

Profile PRO-25 on September 22, 2022 (1440-1450 hours PDT) located at South Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

20	Instantaneous Minimum Dilution in Profile
32	Minimum Average Dilution in Profile
42	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:48:24	39.73	19.99	136.77	16.30	14.24	838	59		
			14:48:25	39.62	19.98	136.23	6.29	5.26	838	159		
			14:48:26	39.44	19.99	137.79	2.69	2.04	838	411		
			14:48:27	39.72	19.98	135.21	0.04	0.04	838	20048		
			14:48:28	39.52	19.97	135.71	0.02	0.02	838	52375		
			14:48:29	39.52	19.97	135.47	0.02	0.02	838	47079		
			14:48:30	39.56	19.97	135.33	0.02	0.02	838	45297		
			14:48:31	39.66	19.97	135.38	0.02	0.02	838	44813		
			14:48:32	39.64	19.97	135.50	0.02	0.02	838	48161		
			14:48:33	39.45	19.97	135.59	0.02	0.02	838	42323		
			14:48:34	39.59	19.97	135.26	0.02	0.02	838	45792		
			14:48:35	39.70	19.97	135.39	0.02	0.02	838	44813		
			14:48:36	39.54	19.98	139.46	0.02	0.02	838	45792		
			14:48:37	39.52	20.00	140.40	0.09	0.09	838	9059		
			14:48:38	39.62	20.00	145.43	7.88	6.69	838	125		
			14:48:39	39.93	20.05	151.97	25.62	22.61	838	37		
			14:48:40	39.74	20.06	150.57	35.35	31.34	838	27		
			14:48:41	39.66	20.04	147.91	32.75	29.00	838	29	42	Diffuser port plume measured at 39-40 ft
			14:48:42	39.97	20.04	143.23	29.51	26.10	838	32		
			14:48:43	41.15	19.99	138.41	11.25	9.72	838	86		
			14:48:44	42.28	19.99	139.78	2.34	1.72	838	486		
			14:48:45	42.45	20.00	140.55	11.99	10.38	838	81		
			14:48:46	42.57	20.00	139.78	4.99	4.10	838	205		
			14:48:47	42.66	19.98	137.59	0.02	0.02	838	44339		
			14:48:48	42.47	19.99	142.77	13.49	11.72	838	71		
			14:48:49	42.47	20.02	146.96	25.21	22.24	838	38	48	Diffuser port plume measured at 42 ft
			14:48:50	42.40	20.04	145.49	28.24	24.96	838	34		
			14:48:51	42.41	20.01	140.15	18.85	16.53	838	51		
			14:48:52	42.27	19.99	139.03	2.02	1.43	838	586		
			14:48:53	42.06	20.00	143.21	25.67	22.65	838	37		
			14:48:54	42.07	20.03	145.23	45.97	40.86	838	21	34	Diffuser port plume measured at 42 ft
			14:48:55	42.09	20.00	139.48	29.80	26.35	838	32		
			14:48:56	41.91	19.99	136.43	20.90	18.37	838	46		
			14:48:57	41.89	19.99	135.61	3.43	2.70	838	311		
			14:48:58	41.80	19.99	135.52	0.10	0.10	838	8534		
			14:48:59	41.96	19.99	135.40	0.02	0.02	838	45792		
			14:49:00	41.82	19.99	135.75	0.02	0.02	838	48161		
			14:49:01	41.80	19.99	135.95	0.02	0.02	838	48161		
			14:49:02	41.86	19.98	136.04	0.02	0.02	838	48161		

**TABLE D-31**

Profile PRO-25 on September 22, 2022 (1440-1450 hours PDT) located at South Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

20	Instantaneous Minimum Dilution in Profile
32	Minimum Average Dilution in Profile
42	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:49:03	41.91	19.98	136.37	0.02	0.02	838	51098		
			14:49:04	41.91	19.98	135.52	0.02	0.02	838	50482		
			14:49:05	41.88	19.98	135.50	0.02	0.02	838	49006		
			14:49:06	41.98	19.98	135.33	0.02	0.02	838	43874		
			14:49:07	42.10	19.98	135.19	0.02	0.02	838	43420		
			14:49:08	42.09	19.98	135.33	0.02	0.02	838	47345		
			14:49:09	42.10	19.98	135.44	0.02	0.02	838	42974		
			14:49:10	42.11	19.98	135.48	0.02	0.02	838	47079		
			14:49:11	42.20	19.98	135.42	0.02	0.02	838	41485		
			14:49:12	42.19	19.98	135.50	0.02	0.02	838	43420		
			14:49:13	42.17	19.98	135.57	0.02	0.02	838	46816		
			14:49:14	42.29	19.98	135.54	0.02	0.02	838	41900		
			14:49:15	42.31	19.98	135.63	0.02	0.02	838	47345		
			14:49:16	42.35	19.98	135.69	0.02	0.02	838	45297		
			14:49:17	42.29	19.98	135.67	0.02	0.02	838	41078		
			14:49:18	42.48	19.98	135.82	0.02	0.02	838	49294		
			14:49:19	42.45	19.98	135.71	0.02	0.02	838	42755		
			14:49:20	42.39	19.98	135.82	0.02	0.02	838	43420		
			14:49:21	42.43	19.98	136.90	0.02	0.02	838	47886		
			14:49:22	42.56	20.00	143.53	18.27	16.02	838	52		
			14:49:23	42.57	20.04	149.67	40.80	36.23	838	23	35	Diffuser port plume measured at 42 ft
			14:49:24	42.41	20.06	150.43	37.89	33.61	838	25		
			14:49:25	42.50	20.05	147.22	23.07	20.32	838	41		
			14:49:26	42.54	20.04	145.75	7.72	6.55	838	128		
			14:49:27	42.59	20.05	151.90	34.54	30.61	838	27		
			14:49:28	42.47	20.07	151.82	37.79	33.53	838	25	46	Diffuser port plume measured at 42 ft
			14:49:29	42.46	20.06	147.02	26.71	23.59	838	36		
			14:49:30	42.58	20.02	142.33	10.09	8.67	838	97		
			14:49:31	42.57	20.02	144.20	4.34	3.51	838	239		
			14:49:32	42.52	20.03	145.57	15.11	13.18	838	64		
			14:49:33	42.50	20.03	144.75	24.46	21.57	838	39		
			14:49:34	42.66	20.04	148.04	32.37	28.66	838	29		
			14:49:35	42.65	20.06	152.02	41.43	36.79	838	23		
			14:49:36	42.39	20.07	151.95	40.18	35.67	838	23		
			14:49:37	42.41	20.06	152.61	37.17	32.97	838	25		
			14:49:38	42.85	20.07	153.80	35.18	31.18	838	27		
			14:49:39	42.59	20.08	153.44	37.18	32.98	838	25		
			14:49:40	42.20	20.06	148.68	37.56	33.32	838	25	32	Diffuser port plume measured at 42 ft
			14:49:41	42.56	20.04	148.64	33.18	29.39	838	29		

**TABLE D-31**

Profile PRO-25 on September 22, 2022 (1440-1450 hours PDT) located at South Acute Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

20	Instantaneous Minimum Dilution in Profile
32	Minimum Average Dilution in Profile
42	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:49:42	42.91	20.06	151.85	35.67	31.63	838	26		
			14:49:43	42.42	20.06	149.75	35.54	31.51	838	27		
			14:49:44	42.23	20.06	153.29	37.80	33.54	838	25		
			14:49:45	42.76	20.08	152.93	37.65	33.40	838	25		
			14:49:46	42.58	20.07	152.72	38.40	34.08	838	25		
			14:49:47	42.45	20.07	151.92	34.18	30.28	838	28		
			14:49:48	42.59	20.07	151.24	30.57	27.05	838	31		
			14:49:49	42.36	20.06	150.58	24.07	21.21	838	40		
			14:49:50	42.67	20.06	150.06	14.89	12.98	838	65		
			14:49:51	42.65	20.05	146.52	4.19	3.38	838	248		
			14:49:52	42.22	20.05	148.21	11.49	9.93	838	84		
			14:49:53	42.77	20.03	141.36	4.21	3.40	838	247		
			14:49:54	42.50	20.01	141.86	2.54	1.90	838	441		
			14:49:55	42.38	20.02	141.23	1.68	1.13	838	739		
			14:49:56	42.78	20.00	139.15	1.02	0.54	838	1561		
			14:49:57	42.09	20.00	140.32	3.36	2.63	838	318		
			14:49:58	42.99	20.01	140.01	6.75	5.68	838	148		
			14:49:59	42.32	20.01	140.15	3.67	2.92	838	287		
			14:50:00	42.45	20.02	146.57	18.44	16.17	838	52		
			14:50:01	42.87	20.06	148.97	22.86	20.14	838	42		
			14:50:02	42.24	20.04	144.55	16.24	14.19	838	59		
			14:50:03	42.87	20.02	143.52	13.63	11.85	838	71		
			14:50:04	42.25	20.02	143.58	17.26	15.11	838	55	58	Diffuser port plume measured at 42 ft
			14:50:05	43.00	20.02	144.80	12.39	10.73	838	78		
			14:50:06	42.16	20.03	144.24	17.32	15.16	838	55		
			14:50:07	42.83	20.02	144.85	19.34	16.97	838	49		
			14:50:08	42.57	20.03	144.76	17.05	14.91	838	56		
			14:50:09	42.57	20.02	143.94	10.44	8.99	838	93		
			14:50:10	42.71	20.02	143.19	0.89	0.42	838	2002		
			14:50:11	42.46	20.02	142.86	8.75	7.47	838	112		
			14:50:12	42.84	20.01	141.54	2.26	1.65	838	507		
			14:50:13	42.54	20.01	141.53	5.38	4.45	838	188		
			14:50:14	42.70	20.01	141.20	15.27	13.32	838	63		
			14:50:15	42.54	20.01	142.92	13.08	11.36	838	74		



**TABLE D-32**

Profile PRO-26 on September 22, 2022 (1458-1509 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

114	Instantaneous Minimum Dilution in Profile
196	Minimum Average Dilution in Profile
488	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-26 (South Mixing Zone Boundary - 242 ft from Diffuser)	47 ft	0.27 m/sec 163 deg. (mag.) Flood Tide	14:58:44	2.32	20.18	132.17	0.02	0.02	881	48674		
			14:58:45	2.39	20.11	132.02	0.02	0.02	881	49494		
			14:58:46	2.37	20.10	131.86	0.02	0.02	881	47112		
			14:58:47	2.36	20.14	131.90	0.02	0.02	881	47112		
			14:58:48	2.43	20.16	131.88	0.02	0.02	881	45412		
			14:58:49	2.40	20.17	131.96	0.02	0.02	881	49774		
			14:58:50	2.38	20.17	131.98	0.02	0.02	881	47112		
			14:58:51	2.41	20.17	131.96	0.02	0.02	881	48944		
			14:58:52	2.45	20.17	132.00	0.02	0.02	881	47112		
			14:58:53	2.36	20.16	132.19	0.02	0.02	881	48674		
			14:58:54	2.38	20.16	132.36	0.02	0.02	881	46126		
			14:58:55	2.30	20.15	132.51	0.02	0.02	881	45179		
			14:58:56	2.41	20.15	132.21	0.02	0.02	881	48674		
			14:58:57	2.31	20.09	132.45	0.02	0.02	881	48674		
			14:58:58	2.29	20.12	132.36	0.02	0.02	881	45648		
			14:58:59	2.33	20.15	132.54	0.02	0.02	881	49774		
			14:59:00	2.38	20.15	132.21	0.02	0.02	881	46614		
			14:59:01	2.29	20.16	132.49	0.02	0.02	881	47622		
			14:59:02	2.34	20.16	132.47	0.02	0.02	881	51824		
			14:59:03	2.34	20.17	132.51	0.02	0.02	881	46614		
			14:59:04	2.28	20.15	132.07	0.02	0.02	881	50057		
			14:59:05	2.33	20.07	131.96	0.02	0.02	881	44050		
14:59:06	2.36	19.99	132.05	0.02	0.02	881	49218					
14:59:07	2.29	19.97	132.13	0.02	0.02	881	46614					
14:59:08	2.32	19.97	132.11	0.02	0.02	881	48674					
14:59:09	2.32	19.98	132.19	0.02	0.02	881	45179					
14:59:10	2.36	19.99	132.21	0.02	0.02	881	46614					
14:59:11	2.29	20.01	132.24	0.02	0.02	881	47112					
14:59:12	2.35	20.02	132.24	0.02	0.02	881	49218					
14:59:13	2.36	20.04	132.21	0.02	0.02	881	48674					
14:59:14	2.31	20.07	132.30	0.02	0.02	881	47112					
14:59:15	2.35	20.09	132.43	0.02	0.02	881	49774					
14:59:16	2.36	20.09	132.76	0.02	0.02	881	48142					
14:59:17	2.23	20.11	132.88	0.02	0.02	881	48142					
14:59:18	2.37	20.12	133.01	0.02	0.02	881	50632					
14:59:19	2.36	20.14	133.10	0.02	0.02	881	46126					
14:59:20	2.31	20.17	133.16	0.02	0.02	881	51824					
14:59:21	2.27	20.18	133.16	0.02	0.02	881	50057					
14:59:22	2.39	20.18	133.18	0.02	0.02	881	49774					

**TABLE D-32**

Profile PRO-26 on September 22, 2022 (1458-1509 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

114	Instantaneous Minimum Dilution in Profile
196	Minimum Average Dilution in Profile
488	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			14:59:23	2.37	20.18	133.22	0.02	0.02	881	47622		No plume detected at 8 ft
			14:59:24	2.38	20.19	132.93	0.02	0.02	881	43186		
			14:59:25	2.43	20.17	132.88	0.02	0.02	881	45648		
			14:59:26	2.39	20.17	133.19	0.02	0.02	881	47622		
			14:59:27	2.79	20.17	135.57	0.02	0.02	881	43614		
			14:59:28	5.17	20.14	135.86	0.02	0.02	881	48674		
			14:59:29	7.48	20.13	137.75	0.02	0.02	881	46126		
			14:59:30	8.00	20.10	138.27	0.02	0.02	881	46126		
			14:59:31	8.10	20.10	137.55	0.02	0.02	881	46126		
			14:59:32	8.00	20.12	135.84	0.02	0.02	881	47622		
			14:59:33	8.12	20.14	135.20	0.02	0.02	881	44050		
			14:59:34	8.08	20.15	135.12	0.02	0.02	881	49218		
			14:59:35	7.91	20.14	136.28	0.02	0.02	881	45412		
			14:59:36	7.97	20.12	138.02	0.02	0.02	881	46126		
			14:59:37	7.74	20.09	139.28	0.02	0.02	881	48674		
			14:59:38	7.75	20.09	137.77	0.02	0.02	881	48674		
			14:59:39	7.81	20.12	136.98	0.02	0.02	881	47622		
			14:59:40	7.60	20.12	137.51	0.02	0.02	881	44949		
			14:59:41	7.76	20.13	135.21	0.02	0.02	881	47622		
			14:59:42	7.86	20.16	134.42	0.02	0.02	881	52440		
			14:59:43	7.65	20.16	134.82	0.02	0.02	881	46126		
			14:59:44	7.77	20.15	136.41	0.02	0.02	881	52440		
			14:59:45	7.66	20.12	138.93	0.02	0.02	881	43614		
			14:59:46	7.69	20.11	138.35	0.02	0.02	881	49774		
			14:59:47	7.88	20.10	139.64	0.02	0.02	881	48674		
			14:59:48	7.65	20.09	139.84	0.02	0.02	881	46126		
			14:59:49	7.72	20.09	139.53	0.02	0.02	881	48142		
			14:59:50	7.74	20.09	139.69	0.02	0.02	881	46614		
			14:59:51	7.66	20.10	139.69	0.02	0.02	881	47622		
			14:59:52	7.81	20.10	139.17	0.02	0.02	881	50632		
			14:59:53	7.65	20.11	138.44	0.02	0.02	881	46614		
			14:59:54	7.67	20.12	137.35	0.02	0.02	881	46126		
			14:59:55	7.90	20.14	137.31	0.02	0.02	881	48674		
			14:59:56	7.65	20.13	138.63	0.02	0.02	881	51221		
			14:59:57	7.82	20.13	138.85	0.02	0.02	881	50057		
			14:59:58	7.76	20.12	140.57	0.02	0.02	881	48142		
			14:59:59	7.65	20.12	139.36	0.02	0.02	881	46614		
			15:00:00	7.87	20.13	140.13	0.02	0.02	881	50632		
			15:00:01	7.78	20.12	141.18	0.02	0.02	881	44721		

**TABLE D-32**

Profile PRO-26 on September 22, 2022 (1458-1509 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

114	Instantaneous Minimum Dilution in Profile
196	Minimum Average Dilution in Profile
488	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:00:02	8.13	20.12	141.18	0.02	0.02	881	44271		No plume detected at 13 ft
			15:00:03	8.04	20.12	141.11	0.02	0.02	881	46614		
			15:00:04	7.99	20.12	140.72	0.02	0.02	881	46126		
			15:00:05	8.30	20.12	140.61	0.02	0.02	881	45648		
			15:00:06	8.64	20.12	140.74	0.02	0.02	881	48142		
			15:00:07	11.98	20.13	141.12	0.02	0.02	881	46126		
			15:00:08	13.53	20.13	141.22	0.02	0.02	881	44949		
			15:00:09	13.80	20.13	141.16	0.02	0.02	881	47622		
			15:00:10	14.08	20.13	141.10	0.02	0.02	881	47112		
			15:00:11	13.78	20.13	141.41	0.02	0.02	881	51520		
			15:00:12	14.13	20.13	141.33	0.02	0.02	881	45648		
			15:00:13	13.94	20.13	141.42	0.02	0.02	881	47622		
			15:00:14	13.95	20.13	140.89	0.02	0.02	881	53720		
			15:00:15	14.09	20.14	140.11	0.02	0.02	881	48142		
			15:00:16	13.78	20.14	139.86	0.02	0.02	881	45412		
			15:00:17	14.04	20.14	139.72	0.02	0.02	881	44495		
			15:00:18	13.73	20.14	139.49	0.02	0.02	881	48142		
			15:00:19	13.90	20.14	139.45	0.02	0.02	881	49774		
			15:00:20	13.83	20.14	138.67	0.02	0.02	881	48674		
			15:00:21	13.74	20.15	138.10	0.02	0.02	881	51824		
			15:00:22	13.91	20.16	137.38	0.02	0.02	881	44721		
			15:00:23	13.61	20.18	137.10	0.02	0.02	881	44495		
			15:00:24	13.85	20.18	137.51	0.02	0.02	881	45179		
			15:00:25	13.54	20.18	137.70	0.02	0.02	881	45648		
			15:00:26	13.75	20.18	138.73	0.02	0.02	881	49774		
			15:00:27	13.57	20.15	141.32	0.02	0.02	881	46614		
			15:00:28	13.59	20.13	141.69	0.02	0.02	881	49218		
			15:00:29	13.77	20.13	142.04	0.02	0.02	881	49774		
			15:00:30	13.53	20.13	142.08	0.02	0.02	881	48674		
			15:00:31	13.87	20.13	141.98	0.02	0.02	881	42767		
			15:00:32	13.48	20.13	141.98	0.02	0.02	881	47112		
			15:00:33	13.84	20.13	141.96	0.02	0.02	881	49218		
			15:00:34	13.55	20.13	141.94	0.02	0.02	881	46126		
			15:00:35	13.80	20.13	141.92	0.02	0.02	881	49774		
			15:00:36	13.64	20.13	141.83	0.02	0.02	881	48674		
			15:00:37	13.77	20.13	141.82	0.02	0.02	881	49218		
			15:00:38	13.60	20.13	141.67	0.02	0.02	881	49494		
			15:00:39	13.80	20.14	141.15	0.02	0.02	881	49218		
			15:00:40	13.78	20.15	140.60	0.02	0.02	881	44495		

**TABLE D-32**

Profile PRO-26 on September 22, 2022 (1458-1509 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

114	Instantaneous Minimum Dilution in Profile
196	Minimum Average Dilution in Profile
488	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:00:41	14.14	20.16	140.32	0.02	0.02	881	49774		No plume detected at 19 ft
			15:00:42	13.89	20.16	140.06	0.02	0.02	881	49774		
			15:00:43	14.25	20.16	140.30	0.02	0.02	881	49218		
			15:00:44	14.43	20.15	140.89	0.02	0.02	881	44949		
			15:00:45	14.51	20.15	140.56	0.02	0.02	881	47622		
			15:00:46	15.89	20.16	140.77	0.02	0.02	881	44721		
			15:00:47	18.63	20.14	142.04	0.02	0.02	881	46614		
			15:00:48	19.20	20.13	142.02	0.02	0.02	881	51221		
			15:00:49	19.53	20.13	142.00	0.02	0.02	881	48674		
			15:00:50	19.38	20.13	141.98	0.02	0.02	881	50632		
			15:00:51	19.53	20.12	141.92	0.02	0.02	881	50343		
			15:00:52	19.27	20.12	141.98	0.02	0.02	881	48142		
			15:00:53	19.45	20.13	141.96	0.02	0.02	881	48142		
			15:00:54	19.33	20.13	141.92	0.02	0.02	881	50343		
			15:00:55	19.36	20.13	141.96	0.02	0.02	881	51824		
			15:00:56	19.21	20.12	141.86	0.02	0.02	881	46614		
			15:00:57	19.18	20.12	141.83	0.02	0.02	881	46614		
			15:00:58	19.30	20.12	141.85	0.02	0.02	881	48142		
			15:00:59	19.16	20.13	141.82	0.02	0.02	881	45648		
			15:01:00	19.40	20.13	141.81	0.02	0.02	881	50057		
			15:01:01	19.14	20.13	141.84	0.02	0.02	881	44050		
			15:01:02	19.26	20.13	141.73	0.02	0.02	881	46126		
			15:01:03	19.28	20.13	141.74	0.02	0.02	881	51824		
			15:01:04	19.29	20.13	141.87	0.02	0.02	881	47112		
			15:01:05	19.33	20.13	141.84	0.02	0.02	881	49218		
			15:01:06	19.15	20.12	141.92	0.02	0.02	881	49218		
			15:01:07	19.41	20.12	141.94	0.02	0.02	881	48142		
			15:01:08	19.18	20.12	141.92	0.02	0.02	881	47622		
			15:01:09	19.29	20.12	141.98	0.02	0.02	881	45412		
			15:01:10	19.26	20.12	141.98	0.02	0.02	881	47112		
			15:01:11	19.26	20.13	141.58	0.02	0.02	881	49218		
			15:01:12	19.28	20.14	141.07	0.02	0.02	881	46126		
			15:01:13	19.25	20.15	140.56	0.02	0.02	881	50343		
			15:01:14	19.26	20.16	140.21	0.02	0.02	881	47112		
			15:01:15	19.26	20.16	140.52	0.02	0.02	881	47112		
			15:01:16	19.20	20.16	141.03	0.02	0.02	881	44721		
			15:01:17	19.27	20.14	141.21	0.02	0.02	881	51824		
			15:01:18	19.26	20.15	140.91	0.02	0.02	881	48142		
			15:01:19	19.36	20.15	141.21	0.02	0.02	881	46126		

**TABLE D-32**

Profile PRO-26 on September 22, 2022 (1458-1509 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

114	Instantaneous Minimum Dilution in Profile
196	Minimum Average Dilution in Profile
488	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:01:20	19.18	20.13	141.80	0.02	0.02	881	44949		
			15:01:21	19.37	20.13	141.87	0.02	0.02	881	48944		
			15:01:22	19.23	20.12	142.06	0.02	0.02	881	45412		
			15:01:23	19.26	20.12	141.96	0.02	0.02	881	49218		
			15:01:24	19.32	20.12	141.98	0.02	0.02	881	50057		
			15:01:25	19.09	20.12	141.98	0.02	0.02	881	46614		
			15:01:26	19.15	20.12	142.02	0.02	0.02	881	47112		
			15:01:27	19.20	20.12	141.96	0.02	0.02	881	47622		
			15:01:28	19.05	20.12	142.00	0.02	0.02	881	47622		
			15:01:29	19.13	20.12	142.08	0.02	0.02	881	49774		
			15:01:30	19.08	20.12	142.02	0.02	0.02	881	44721		
			15:01:31	19.06	20.12	142.00	0.02	0.02	881	49218		
			15:01:32	19.16	20.13	141.89	0.02	0.02	881	44271		
			15:01:33	19.13	20.13	141.89	0.02	0.02	881	51520		
			15:01:34	19.10	20.13	141.94	0.02	0.02	881	50632		
			15:01:35	19.14	20.12	141.96	0.02	0.02	881	43614		
			15:01:36	19.10	20.12	141.92	0.02	0.02	881	46126		
			15:01:37	19.11	20.13	141.89	0.02	0.02	881	50057		
			15:01:38	19.23	20.13	141.85	0.02	0.02	881	51520		
			15:01:39	19.06	20.13	141.87	0.02	0.02	881	48142		
			15:01:40	19.13	20.13	141.94	0.02	0.02	881	44050		
			15:01:41	19.14	20.12	141.92	0.02	0.02	881	48142		
			15:01:42	19.15	20.12	141.94	0.02	0.02	881	50057		
			15:01:43	19.37	20.12	141.96	0.02	0.02	881	51520		
			15:01:44	19.53	20.12	141.92	0.02	0.02	881	48674		
			15:01:45	19.49	20.13	141.84	0.02	0.02	881	48674		
			15:01:46	19.68	20.13	141.87	0.02	0.02	881	46126		
			15:01:47	21.31	20.14	141.90	0.02	0.02	881	47112		
			15:01:48	23.95	20.12	142.37	0.02	0.02	881	50343		
			15:01:49	24.63	20.10	142.59	0.02	0.02	881	49774		
			15:01:50	24.84	20.10	142.80	0.02	0.02	881	50632		
			15:01:51	24.90	20.09	142.92	0.02	0.02	881	44050		
			15:01:52	24.98	20.09	143.00	0.02	0.02	881	47622		
			15:01:53	24.91	20.09	143.09	0.02	0.02	881	46614		
			15:01:54	24.96	20.08	143.07	0.02	0.02	881	46614		
			15:01:55	24.84	20.08	143.18	0.02	0.02	881	51221		
			15:01:56	24.92	20.08	143.16	0.02	0.02	881	54383		No plume detected at 24-25 ft
			15:01:57	24.93	20.08	143.18	0.02	0.02	881	51824		
			15:01:58	24.93	20.08	143.20	0.02	0.02	881	43186		

**TABLE D-32**

Profile PRO-26 on September 22, 2022 (1458-1509 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

114	Instantaneous Minimum Dilution in Profile
196	Minimum Average Dilution in Profile
488	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured	Calibration-	Measured	Instant. Minimum	Minimum Plume Avg. Dilution	Measurement Observations
							Dye Conc. (ppb)	Corrected Dye Conc. (ppb)	Initial Dye Conc. (ppb)			
			15:01:59	24.96	20.08	143.22	0.02	0.02	881	47622		
			15:02:00	24.90	20.08	143.09	0.02	0.02	881	41952		
			15:02:01	24.96	20.09	143.03	0.02	0.02	881	42356		
			15:02:02	25.02	20.09	143.09	0.02	0.02	881	45648		
			15:02:03	25.07	20.08	143.25	0.02	0.02	881	51824		
			15:02:04	24.99	20.08	143.21	0.02	0.02	881	50343		
			15:02:05	25.01	20.08	143.20	0.02	0.02	881	49218		
			15:02:06	25.02	20.07	143.20	0.02	0.02	881	46862		
			15:02:07	25.08	20.07	143.16	0.02	0.02	881	48674		
			15:02:08	24.93	20.07	143.26	0.02	0.02	881	50343		
			15:02:09	24.89	20.06	143.22	0.02	0.02	881	46126		
			15:02:10	24.88	20.06	143.22	0.02	0.02	881	44721		
			15:02:11	24.90	20.06	143.14	0.02	0.02	881	50057		
			15:02:12	24.87	20.08	142.73	0.02	0.02	881	48674		
			15:02:13	24.91	20.09	142.78	0.02	0.02	881	49218		
			15:02:14	24.94	20.09	142.71	0.02	0.02	881	45648		
			15:02:15	24.86	20.09	142.95	0.02	0.02	881	47112		
			15:02:16	24.94	20.08	142.95	0.02	0.02	881	49774		
			15:02:17	24.90	20.08	142.86	0.02	0.02	881	44495		
			15:02:18	24.95	20.08	143.01	0.02	0.02	881	49494		
			15:02:19	24.93	20.07	143.01	0.02	0.02	881	46614		
			15:02:20	25.10	20.08	142.90	0.02	0.02	881	47112		
			15:02:21	25.23	20.08	143.03	0.02	0.02	881	45179		
			15:02:22	26.00	20.08	143.16	0.02	0.02	881	47622		
			15:02:23	29.09	20.07	143.12	0.02	0.02	881	51221		
			15:02:24	30.26	20.07	143.09	0.02	0.02	881	49218		
			15:02:25	30.52	20.06	143.12	0.02	0.02	881	52440		
			15:02:26	30.59	20.06	143.14	0.02	0.02	881	47112		
			15:02:27	30.53	20.06	143.16	0.02	0.02	881	50632		
			15:02:28	30.46	20.06	143.12	0.02	0.02	881	46614		
			15:02:29	30.55	20.06	143.12	0.02	0.02	881	47622		
			15:02:30	30.52	20.06	143.14	0.02	0.02	881	47622		
			15:02:31	30.50	20.06	143.20	0.02	0.02	881	49494		
			15:02:32	30.48	20.06	143.23	0.02	0.02	881	48674		
			15:02:33	30.56	20.06	143.32	0.02	0.02	881	50057		
			15:02:34	30.43	20.06	143.49	0.02	0.02	881	53720		
			15:02:35	30.45	20.06	143.47	0.02	0.02	881	50632		
			15:02:36	30.49	20.06	143.49	0.02	0.02	881	46614		
			15:02:37	30.47	20.06	143.55	0.02	0.02	881	48674		

**TABLE D-32**

Profile PRO-26 on September 22, 2022 (1458-1509 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

114	Instantaneous Minimum Dilution in Profile
196	Minimum Average Dilution in Profile
488	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:02:38	30.44	20.06	143.66	0.02	0.02	881	48142		
			15:02:39	30.41	20.06	144.25	0.02	0.02	881	45648		
			15:02:40	30.46	20.06	143.89	0.02	0.02	881	48142		
			15:02:41	30.45	20.06	143.71	0.02	0.02	881	49218		
			15:02:42	30.41	20.05	143.70	0.02	0.02	881	52440		
			15:02:43	30.40	20.06	143.66	0.02	0.02	881	46126		
			15:02:44	30.40	20.06	143.70	0.02	0.02	881	46614		
			15:02:45	30.43	20.06	144.00	0.02	0.02	881	50343		
			15:02:46	30.46	20.06	144.12	0.02	0.02	881	46614		
			15:02:47	30.46	20.06	144.07	0.02	0.02	881	48674		
			15:02:48	30.50	20.06	144.84	0.02	0.02	881	53720		
			15:02:49	30.43	20.06	145.56	0.02	0.02	881	50343		
			15:02:50	30.45	20.06	145.61	0.56	0.13	881	6865		
			15:02:51	30.48	20.06	145.67	0.32	0.32	881	2771		
			15:02:52	30.44	20.06	145.66	0.02	0.02	881	49218		
			15:02:53	30.39	20.05	144.83	0.02	0.02	881	45648		
			15:02:54	30.39	20.05	144.74	0.02	0.02	881	48142		
			15:02:55	30.45	20.05	144.41	0.02	0.02	881	46614		
			15:02:56	30.42	20.05	143.72	0.02	0.02	881	47112		
			15:02:57	30.49	20.05	144.21	0.02	0.02	881	48674		
			15:02:58	30.41	20.05	144.96	0.02	0.02	881	45412		
			15:02:59	30.49	20.05	145.08	0.02	0.02	881	49218		
			15:03:00	30.54	20.05	145.31	0.02	0.02	881	44271		
			15:03:01	30.46	20.05	145.53	0.11	0.11	881	8319		
			15:03:02	30.50	20.05	147.00	3.02	2.34	881	377		
			15:03:03	30.51	20.05	146.89	4.38	3.55	881	248		
			15:03:04	30.51	20.05	146.57	3.56	2.82	881	313		
			15:03:05	30.48	20.05	146.38	3.40	2.67	881	330		
			15:03:06	30.60	20.05	146.43	3.63	2.88	881	306		
			15:03:07	30.41	20.05	147.00	4.04	3.24	881	272		
			15:03:08	30.44	20.06	146.98	4.92	4.04	881	218	196	Measured plume at 30 ft
			15:03:09	30.19	20.05	146.84	5.73	4.76	881	185		
			15:03:10	30.26	20.05	146.95	6.28	5.26	881	167		
			15:03:11	30.15	20.06	147.18	6.60	5.54	881	159		
			15:03:12	30.15	20.06	147.24	7.26	6.14	881	144		
			15:03:13	30.10	20.06	147.43	7.40	6.27	881	141		
			15:03:14	30.15	20.06	147.74	7.48	6.33	881	139		
			15:03:15	30.19	20.06	147.81	7.68	6.51	881	135		
			15:03:16	30.12	20.06	147.57	9.03	7.72	881	114		

**TABLE D-32**

Profile PRO-26 on September 22, 2022 (1458-1509 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

114	Instantaneous Minimum Dilution in Profile
196	Minimum Average Dilution in Profile
488	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:03:17	30.13	20.05	147.65	8.17	6.95	881	127		
			15:03:18	30.14	20.05	147.57	8.05	6.84	881	129		
			15:03:19	30.15	20.06	147.91	7.68	6.52	881	135		
			15:03:20	30.16	20.06	148.25	7.90	6.71	881	131		
			15:03:21	30.17	20.05	145.67	8.09	6.88	881	128		
			15:03:22	30.16	20.05	145.02	8.11	6.90	881	128		
			15:03:23	30.16	20.04	144.87	7.68	6.51	881	135		
			15:03:24	30.21	20.04	145.45	6.91	5.82	881	151		
			15:03:25	30.23	20.04	145.92	6.47	5.43	881	162		
			15:03:26	30.15	20.04	145.55	6.59	5.54	881	159		
			15:03:27	30.26	20.04	145.65	6.67	5.61	881	157		
			15:03:28	30.20	20.04	145.74	6.40	5.36	881	164		
			15:03:29	30.20	20.04	145.26	5.97	4.98	881	177		
			15:03:30	30.22	20.04	144.65	4.86	3.98	881	221		
			15:03:31	30.17	20.04	144.33	4.28	3.46	881	255		
			15:03:32	30.24	20.04	144.10	2.56	1.92	881	460		
			15:03:33	30.16	20.04	144.16	0.02	0.02	881	48142		
			15:03:34	30.19	20.04	143.79	0.02	0.02	881	48142		
			15:03:35	30.12	20.03	143.43	0.02	0.02	881	48142		
			15:03:36	30.09	20.03	143.34	0.02	0.02	881	49774		
			15:03:37	30.14	20.03	143.40	0.02	0.02	881	44050		
			15:03:38	30.20	20.03	143.55	0.02	0.02	881	45648		
			15:03:39	30.24	20.03	143.47	0.02	0.02	881	48142		
			15:03:40	30.23	20.03	143.23	0.02	0.02	881	49218		
			15:03:41	30.16	20.03	143.10	0.02	0.02	881	44721		
			15:03:42	30.13	20.03	143.12	0.02	0.02	881	46614		
			15:03:43	30.20	20.03	142.99	0.02	0.02	881	46126		
			15:03:44	30.16	20.02	142.92	0.02	0.02	881	48142		
			15:03:45	30.11	20.02	143.11	0.02	0.02	881	49774		
			15:03:46	30.13	20.02	143.15	0.02	0.02	881	44949		
			15:03:47	30.16	20.02	143.51	0.02	0.02	881	47622		
			15:03:48	30.22	20.02	144.52	0.53	0.09	881	9330		
			15:03:49	30.23	20.03	144.90	2.91	2.24	881	394		
			15:03:50	30.14	20.03	145.78	5.20	4.29	881	206		
			15:03:51	30.15	20.04	145.39	6.71	5.64	881	156		
			15:03:52	30.14	20.03	144.41	3.54	2.80	881	315	333	Measured plume at 30 ft
			15:03:53	30.18	20.02	144.22	2.91	2.23	881	394		
			15:03:54	30.15	20.03	144.48	3.21	2.50	881	352		
			15:03:55	30.13	20.03	144.55	2.34	1.72	881	511		



**TABLE D-32**

Profile PRO-26 on September 22, 2022 (1458-1509 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

114	Instantaneous Minimum Dilution in Profile
196	Minimum Average Dilution in Profile
488	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:03:56	30.12	20.02	144.43	1.37	0.85	881	1032		
			15:03:57	30.21	20.02	144.62	0.46	0.04	881	24769		
			15:03:58	30.08	20.02	145.04	0.02	0.02	881	48142		
			15:03:59	30.20	20.02	144.37	0.07	0.07	881	13228		
			15:04:00	30.14	20.02	143.93	0.02	0.02	881	47112		
			15:04:01	30.19	20.02	143.68	0.02	0.02	881	51221		
			15:04:02	30.21	20.02	143.38	0.02	0.02	881	48142		
			15:04:03	30.29	20.01	143.49	0.02	0.02	881	50632		
			15:04:04	30.13	20.02	143.38	0.02	0.02	881	48142		
			15:04:05	30.19	20.01	143.66	0.02	0.02	881	48674		
			15:04:06	30.22	20.02	143.72	0.02	0.02	881	50057		
			15:04:07	30.17	20.02	143.66	0.02	0.02	881	50057		
			15:04:08	30.17	20.02	143.68	0.02	0.02	881	47112		
			15:04:09	30.16	20.02	144.00	0.02	0.02	881	51520		
			15:04:10	30.20	20.02	144.45	0.02	0.02	881	44050		
			15:04:11	30.21	20.02	144.62	0.02	0.02	881	55063		
			15:04:12	30.21	20.02	144.00	0.02	0.02	881	44949		
			15:04:13	30.11	20.02	143.66	0.02	0.02	881	49218		
			15:04:14	30.09	20.02	143.40	0.02	0.02	881	49218		
			15:04:15	30.09	20.01	143.25	0.02	0.02	881	47622		
			15:04:16	30.13	20.01	143.37	0.02	0.02	881	49218		
			15:04:17	30.13	20.01	143.47	0.02	0.02	881	44495		
			15:04:18	30.11	20.01	143.38	0.02	0.02	881	47112		
			15:04:19	30.17	20.01	143.53	0.02	0.02	881	44495		
			15:04:20	30.22	20.02	143.64	0.02	0.02	881	46126		
			15:04:21	30.21	20.02	143.64	0.02	0.02	881	47112		
			15:04:22	30.14	20.02	143.67	0.02	0.02	881	50925		
			15:04:23	30.20	20.02	143.74	0.02	0.02	881	45648		
			15:04:24	30.18	20.02	143.72	0.02	0.02	881	48142		
			15:04:25	30.13	20.02	143.55	0.02	0.02	881	48142		
			15:04:26	30.16	20.01	143.40	0.02	0.02	881	50632		
			15:04:27	30.19	20.01	143.36	0.02	0.02	881	49218		
			15:04:28	30.11	20.02	143.21	0.02	0.02	881	46126		
			15:04:29	30.21	20.01	142.86	0.02	0.02	881	46614		
			15:04:30	30.16	20.01	142.57	0.02	0.02	881	44949		
			15:04:31	30.15	20.01	142.97	0.02	0.02	881	45412		
			15:04:32	30.12	20.01	143.28	0.02	0.02	881	48142		
			15:04:33	30.14	20.02	143.47	0.02	0.02	881	49774		
			15:04:34	30.14	20.02	143.51	0.02	0.02	881	50632		

**TABLE D-32**

Profile PRO-26 on September 22, 2022 (1458-1509 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

114	Instantaneous Minimum Dilution in Profile
196	Minimum Average Dilution in Profile
488	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:04:35	30.20	20.02	143.53	0.02	0.02	881	47112		
			15:04:36	30.13	20.02	143.49	0.02	0.02	881	49218		
			15:04:37	30.15	20.02	143.57	0.02	0.02	881	46614		
			15:04:38	30.17	20.02	143.33	0.02	0.02	881	46614		
			15:04:39	30.13	20.02	143.53	0.02	0.02	881	47622		
			15:04:40	30.20	20.02	143.66	0.02	0.02	881	47622		
			15:04:41	30.15	20.02	143.81	0.02	0.02	881	45179		
			15:04:42	30.15	20.02	143.81	0.02	0.02	881	49774		
			15:04:43	30.18	20.02	143.79	0.02	0.02	881	50632		
			15:04:44	30.23	20.02	143.72	0.02	0.02	881	50632		
			15:04:45	30.21	20.02	143.76	0.02	0.02	881	47622		
			15:04:46	30.21	20.02	143.81	0.02	0.02	881	47622		
			15:04:47	30.20	20.02	143.85	0.02	0.02	881	44050		
			15:04:48	30.25	20.02	143.89	0.02	0.02	881	50925		
			15:04:49	30.23	20.02	143.91	0.02	0.02	881	47622		
			15:04:50	30.25	20.02	143.91	0.02	0.02	881	51824		
			15:04:51	30.27	20.02	143.85	0.02	0.02	881	49218		
			15:04:52	30.36	20.02	143.74	0.02	0.02	881	50057		
			15:04:53	30.54	20.02	143.68	0.02	0.02	881	49218		
			15:04:54	30.50	20.02	143.62	0.02	0.02	881	45179		
			15:04:55	30.48	20.02	143.64	0.02	0.02	881	51824		
			15:04:56	30.61	20.02	143.74	0.02	0.02	881	52440		
			15:04:57	30.95	20.02	143.76	0.02	0.02	881	49218		
			15:04:58	32.62	20.02	143.64	0.02	0.02	881	48142		
			15:04:59	35.14	20.01	143.25	0.02	0.02	881	53072		
			15:05:00	35.67	20.01	142.97	0.02	0.02	881	47112		
			15:05:01	35.75	20.01	142.36	0.02	0.02	881	51221		
			15:05:02	35.86	20.00	142.08	0.02	0.02	881	47112		
			15:05:03	35.88	20.00	141.94	0.02	0.02	881	45648		
			15:05:04	35.83	20.00	141.77	0.02	0.02	881	47112		
			15:05:05	35.73	20.00	141.75	0.02	0.02	881	46614		
			15:05:06	35.77	20.00	141.77	0.02	0.02	881	48674		
			15:05:07	35.79	20.00	141.82	0.02	0.02	881	48142		
			15:05:08	35.78	20.00	141.80	0.02	0.02	881	44721		
			15:05:09	35.75	20.00	141.92	0.02	0.02	881	48674		
			15:05:10	35.80	20.00	141.87	0.02	0.02	881	48142		
			15:05:11	35.81	20.00	141.73	0.02	0.02	881	48674		
			15:05:12	35.84	20.00	141.75	0.02	0.02	881	50057		
			15:05:13	35.77	20.00	141.60	0.02	0.02	881	48674		

**TABLE D-32**

Profile PRO-26 on September 22, 2022 (1458-1509 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

114	Instantaneous Minimum Dilution in Profile
196	Minimum Average Dilution in Profile
488	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:05:14	35.75	20.00	141.58	0.02	0.02	881	49774		
			15:05:15	35.76	20.00	141.60	0.02	0.02	881	44721		
			15:05:16	35.75	20.00	141.63	0.02	0.02	881	50343		
			15:05:17	35.80	20.00	141.60	0.02	0.02	881	48142		
			15:05:18	35.76	20.00	141.70	0.02	0.02	881	47622		
			15:05:19	35.72	20.00	141.69	0.02	0.02	881	50057		
			15:05:20	35.76	20.00	141.65	0.02	0.02	881	48674		
			15:05:21	35.78	20.00	141.68	0.02	0.02	881	50925		
			15:05:22	35.72	20.00	142.00	0.02	0.02	881	50057		
			15:05:23	35.77	20.01	142.21	0.02	0.02	881	48142		
			15:05:24	35.74	20.01	142.17	0.02	0.02	881	43614		
			15:05:25	35.75	20.00	141.96	0.02	0.02	881	47622		
			15:05:26	35.73	20.00	141.78	0.02	0.02	881	48142		
			15:05:27	35.77	20.00	141.73	0.02	0.02	881	44721		
			15:05:28	35.70	20.00	141.71	0.02	0.02	881	49774		
			15:05:29	35.65	20.00	141.72	0.02	0.02	881	50632		
			15:05:30	35.57	20.00	141.63	0.02	0.02	881	49218		
			15:05:31	35.54	20.00	141.54	0.02	0.02	881	47112		
			15:05:32	35.41	20.00	141.61	0.02	0.02	881	48944		
			15:05:33	35.42	20.00	141.54	0.02	0.02	881	48674		
			15:05:34	35.43	20.00	141.52	0.02	0.02	881	48674		
			15:05:35	35.44	20.00	141.54	0.02	0.02	881	47622		
			15:05:36	35.43	20.00	141.44	0.02	0.02	881	47112		
			15:05:37	35.42	20.00	141.12	0.02	0.02	881	45648		
			15:05:38	35.40	19.99	141.27	0.02	0.02	881	46126		
			15:05:39	35.39	20.00	141.58	0.02	0.02	881	49774		
			15:05:40	35.42	20.00	141.67	0.02	0.02	881	50343		
			15:05:41	35.45	20.00	141.63	0.02	0.02	881	47622		
			15:05:42	35.42	20.00	141.78	0.02	0.02	881	46126		
			15:05:43	35.43	20.00	141.73	0.02	0.02	881	50057		
			15:05:44	35.40	20.00	141.29	0.02	0.02	881	53720		
			15:05:45	35.37	20.00	141.35	0.02	0.02	881	47112		
			15:05:46	35.43	20.00	141.53	0.02	0.02	881	49774		
			15:05:47	35.43	20.00	141.67	0.02	0.02	881	47622		
			15:05:48	35.40	20.00	141.83	0.02	0.02	881	43186		
			15:05:49	35.43	20.00	142.00	0.02	0.02	881	42767		
			15:05:50	35.41	20.00	142.00	0.02	0.02	881	46126		
			15:05:51	35.40	20.00	141.83	0.02	0.02	881	45648		
			15:05:52	35.36	20.00	141.86	0.02	0.02	881	50343		

**TABLE D-32**

Profile PRO-26 on September 22, 2022 (1458-1509 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

114	Instantaneous Minimum Dilution in Profile
196	Minimum Average Dilution in Profile
488	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:05:53	35.33	20.00	141.51	0.02	0.02	881	47112		Measured plume at 35 ft
			15:05:54	35.35	20.00	141.60	0.02	0.02	881	49774		
			15:05:55	35.38	20.00	141.63	0.02	0.02	881	49218		
			15:05:56	35.39	20.00	141.56	0.02	0.02	881	47622		
			15:05:57	35.37	20.00	141.68	0.02	0.02	881	53720		
			15:05:58	35.36	20.00	142.64	0.42	0.42	881	2122		
			15:05:59	35.43	20.00	142.65	0.25	0.25	881	3540		
			15:06:00	35.37	20.00	142.80	0.30	0.30	881	2927		
			15:06:01	35.39	20.00	143.19	1.51	0.98	881	900		
			15:06:02	35.39	20.01	143.59	2.31	1.70	881	520	630	
			15:06:03	35.41	20.01	143.31	2.47	1.84	881	478		
			15:06:04	35.46	20.01	142.64	2.00	1.42	881	622		
			15:06:05	35.44	20.00	142.76	0.45	0.03	881	33464		
			15:06:06	35.41	20.00	142.47	1.47	0.94	881	941		
			15:06:07	35.43	20.00	141.74	0.02	0.02	881	47112		
			15:06:08	35.44	20.00	141.68	0.02	0.02	881	49218		
			15:06:09	35.44	20.00	141.44	0.02	0.02	881	48674		
			15:06:10	35.42	20.00	141.16	0.02	0.02	881	49494		
			15:06:11	35.44	20.00	140.91	0.02	0.02	881	51221		
			15:06:12	35.47	20.00	140.77	0.02	0.02	881	45179		
			15:06:13	35.55	19.99	140.66	0.02	0.02	881	48142		
			15:06:14	35.51	19.99	140.66	0.02	0.02	881	46126		
			15:06:15	35.52	19.99	140.74	0.02	0.02	881	48142		
			15:06:16	35.47	19.99	140.74	0.02	0.02	881	45179		
			15:06:17	35.52	19.99	140.74	0.02	0.02	881	51221		
			15:06:18	35.52	19.99	140.60	0.02	0.02	881	47112		
			15:06:19	35.48	19.99	140.74	0.02	0.02	881	49774		
			15:06:20	35.56	20.00	141.13	0.02	0.02	881	49774		
			15:06:21	35.52	20.00	141.20	0.02	0.02	881	53720		
			15:06:22	35.58	20.00	141.19	0.02	0.02	881	47622		
			15:06:23	35.60	20.00	141.07	0.02	0.02	881	50057		
			15:06:24	35.62	20.00	140.93	0.02	0.02	881	50343		
			15:06:25	35.62	20.00	140.83	0.02	0.02	881	46614		
			15:06:26	35.54	20.00	140.89	0.02	0.02	881	45648		
			15:06:27	35.52	20.00	141.14	0.02	0.02	881	47112		
			15:06:28	35.53	20.00	141.54	0.06	0.06	881	15137		
			15:06:29	35.53	20.00	141.45	0.85	0.38	881	2310		
			15:06:30	35.52	20.00	141.22	0.37	0.37	881	2379		
			15:06:31	35.50	19.99	140.98	0.02	0.02	881	51824		

**TABLE D-32**

Profile PRO-26 on September 22, 2022 (1458-1509 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

114	Instantaneous Minimum Dilution in Profile
196	Minimum Average Dilution in Profile
488	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:06:32	35.48	20.00	141.66	0.02	0.02	881	51824		Measured plume at 35 ft
			15:06:33	35.47	20.00	141.80	0.02	0.02	881	49774		
			15:06:34	35.61	19.99	141.11	0.09	0.09	881	10000		
			15:06:35	35.44	19.99	141.17	0.06	0.06	881	14635		
			15:06:36	35.56	19.99	141.93	1.11	0.62	881	1421		
			15:06:37	35.52	20.00	143.33	3.60	2.85	881	309	794	
			15:06:38	35.55	20.00	143.37	1.93	1.35	881	652		
			15:06:39	35.53	20.00	141.42	0.02	0.02	881	50343		
			15:06:40	35.53	19.99	140.79	0.02	0.02	881	49774		
			15:06:41	35.61	19.99	140.48	0.02	0.02	881	48674		
			15:06:42	35.58	19.99	140.14	0.02	0.02	881	48142		
			15:06:43	35.56	19.99	141.08	0.02	0.02	881	48674		
			15:06:44	35.47	19.99	141.54	0.02	0.02	881	52440		
			15:06:45	35.65	19.99	140.94	0.02	0.02	881	53720		
			15:06:46	35.51	19.99	140.24	0.02	0.02	881	50343		
			15:06:47	35.56	19.99	140.07	0.02	0.02	881	46126		
			15:06:48	35.50	19.98	139.78	0.02	0.02	881	48674		
			15:06:49	35.48	19.98	139.80	0.02	0.02	881	48142		
			15:06:50	35.53	19.98	139.85	0.02	0.02	881	47622		
			15:06:51	35.42	19.99	140.06	0.02	0.02	881	47622		
			15:06:52	35.52	19.99	140.16	0.02	0.02	881	48674		
			15:06:53	35.50	19.99	140.40	0.02	0.02	881	49218		
			15:06:54	35.56	19.99	140.43	0.02	0.02	881	47622		
			15:06:55	35.48	19.99	140.38	0.02	0.02	881	45179		
			15:06:56	35.53	19.99	140.36	0.02	0.02	881	49218		
			15:06:57	35.53	19.99	140.38	0.02	0.02	881	47622		
			15:06:58	35.52	19.99	140.40	0.02	0.02	881	49774		
			15:06:59	35.52	19.99	140.36	0.02	0.02	881	48142		
			15:07:00	35.53	19.99	140.31	0.02	0.02	881	49218		
			15:07:01	35.54	19.99	140.38	0.02	0.02	881	49218		
			15:07:02	35.51	19.99	140.52	0.02	0.02	881	45648		
			15:07:03	35.51	20.00	140.62	0.02	0.02	881	47622		
			15:07:04	35.47	20.00	140.68	0.02	0.02	881	43186		
			15:07:05	35.52	20.00	140.74	0.02	0.02	881	48142		
			15:07:06	35.50	20.00	140.66	0.02	0.02	881	48674		
			15:07:07	35.50	20.00	140.74	0.02	0.02	881	45179		
			15:07:08	35.48	20.00	140.93	0.02	0.02	881	46126		
			15:07:09	35.44	19.99	140.57	0.02	0.02	881	50632		
			15:07:10	35.47	19.99	140.14	0.02	0.02	881	43614		

**TABLE D-32**

Profile PRO-26 on September 22, 2022 (1458-1509 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

114	Instantaneous Minimum Dilution in Profile
196	Minimum Average Dilution in Profile
488	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:07:11	35.46	19.99	139.97	0.02	0.02	881	50925		
			15:07:12	35.48	19.99	139.86	0.02	0.02	881	54383		
			15:07:13	35.47	19.99	139.95	0.02	0.02	881	44495		
			15:07:14	35.50	19.99	140.03	0.02	0.02	881	54383		
			15:07:15	35.50	19.99	139.93	0.02	0.02	881	48674		
			15:07:16	35.49	19.99	139.65	0.02	0.02	881	51221		
			15:07:17	35.52	19.99	139.55	0.02	0.02	881	46126		
			15:07:18	35.53	19.99	139.42	0.02	0.02	881	45179		
			15:07:19	35.50	19.99	139.42	0.02	0.02	881	48674		
			15:07:20	35.53	19.99	139.41	0.02	0.02	881	50057		
			15:07:21	35.51	19.99	139.49	0.02	0.02	881	49494		
			15:07:22	35.46	19.98	139.45	0.02	0.02	881	46126		
			15:07:23	35.51	19.99	139.63	0.02	0.02	881	50632		
			15:07:24	35.51	19.99	139.62	0.02	0.02	881	51824		
			15:07:25	35.53	19.99	139.57	0.02	0.02	881	47622		
			15:07:26	35.49	19.99	139.34	0.02	0.02	881	53072		
			15:07:27	35.53	19.98	139.29	0.02	0.02	881	49774		
			15:07:28	35.49	19.98	139.23	0.02	0.02	881	44050		
			15:07:29	35.48	19.98	139.13	0.02	0.02	881	50057		
			15:07:30	35.47	19.98	139.04	0.02	0.02	881	48674		
			15:07:31	35.48	19.98	139.00	0.02	0.02	881	49218		
			15:07:32	35.47	19.98	139.04	0.02	0.02	881	49774		
			15:07:33	35.50	19.98	139.13	0.02	0.02	881	47622		
			15:07:34	35.50	19.98	139.05	0.02	0.02	881	50343		
			15:07:35	35.42	19.98	138.90	0.02	0.02	881	48674		
			15:07:36	35.51	19.98	138.92	0.02	0.02	881	48674		
			15:07:37	35.41	19.98	138.98	0.02	0.02	881	50057		
			15:07:38	35.48	19.98	139.06	0.02	0.02	881	47112		
			15:07:39	35.39	19.98	139.04	0.02	0.02	881	47112		
			15:07:40	35.44	19.98	139.06	0.02	0.02	881	50632		
			15:07:41	35.40	19.98	139.34	0.02	0.02	881	44949		
			15:07:42	35.41	19.98	139.33	0.02	0.02	881	47622		
			15:07:43	35.41	19.98	139.38	0.02	0.02	881	46614		
			15:07:44	35.42	19.98	139.28	0.02	0.02	881	50057		
			15:07:45	35.39	19.98	139.38	0.02	0.02	881	47622		
			15:07:46	35.35	19.99	139.74	0.02	0.02	881	49218		
			15:07:47	35.36	19.99	140.01	0.02	0.02	881	50057		
			15:07:48	35.52	20.00	140.26	0.02	0.02	881	50343		
			15:07:49	35.62	20.00	140.45	0.02	0.02	881	48674		

**TABLE D-32**

Profile PRO-26 on September 22, 2022 (1458-1509 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

114	Instantaneous Minimum Dilution in Profile
196	Minimum Average Dilution in Profile
488	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:07:50	35.65	20.00	140.45	0.02	0.02	881	49774		
			15:07:51	35.70	20.00	140.45	0.02	0.02	881	50925		
			15:07:52	36.25	20.00	140.09	0.02	0.02	881	48674		
			15:07:53	38.65	19.99	139.06	0.02	0.02	881	50632		
			15:07:54	40.42	19.98	139.04	0.02	0.02	881	52440		
			15:07:55	40.52	19.98	138.94	0.02	0.02	881	49774		
			15:07:56	40.56	19.98	138.92	0.02	0.02	881	53072		
			15:07:57	40.51	19.98	138.85	0.02	0.02	881	50343		
			15:07:58	40.52	19.98	138.80	0.02	0.02	881	47112		
			15:07:59	40.40	19.98	138.71	0.02	0.02	881	49218		
			15:08:00	40.36	19.98	138.61	0.02	0.02	881	48142		
			15:08:01	40.17	19.99	138.61	0.02	0.02	881	48142		
			15:08:02	40.12	19.99	138.50	0.02	0.02	881	47622		
			15:08:03	40.07	20.00	138.61	0.02	0.02	881	48142		
			15:08:04	40.13	20.00	138.63	0.02	0.02	881	50632		
			15:08:05	40.17	20.00	138.58	0.02	0.02	881	48142		
			15:08:06	40.17	20.01	138.54	0.02	0.02	881	50057		
			15:08:07	40.23	20.01	138.42	0.02	0.02	881	47622		
			15:08:08	40.18	20.01	138.18	0.02	0.02	881	50343		
			15:08:09	40.12	20.00	137.98	0.02	0.02	881	42767		
			15:08:10	40.20	20.00	137.75	0.02	0.02	881	51520		
			15:08:11	40.17	19.99	137.40	0.02	0.02	881	51824		
			15:08:12	40.23	19.99	137.37	0.02	0.02	881	50343		
			15:08:13	40.21	19.99	137.53	0.02	0.02	881	50632		
			15:08:14	40.27	19.98	137.53	0.02	0.02	881	51520		
			15:08:15	40.41	19.98	137.29	0.02	0.02	881	47112		
			15:08:16	40.40	19.98	137.39	0.02	0.02	881	50632		
			15:08:17	40.48	19.98	137.35	0.02	0.02	881	49218		
			15:08:18	40.47	19.98	137.16	0.02	0.02	881	49218		
			15:08:19	40.53	19.98	137.13	0.02	0.02	881	44721		
			15:08:20	40.48	19.98	137.43	0.02	0.02	881	50632		
			15:08:21	40.51	19.98	137.06	0.02	0.02	881	47622		
			15:08:22	40.51	19.99	136.49	0.02	0.02	881	47112		
			15:08:23	40.48	19.99	136.08	0.02	0.02	881	47112		
			15:08:24	40.55	19.99	136.07	0.02	0.02	881	49774		
			15:08:25	40.57	19.99	135.90	0.02	0.02	881	47112		
			15:08:26	40.64	20.00	135.80	0.02	0.02	881	48142		
			15:08:27	40.69	20.00	135.78	0.02	0.02	881	53720		
			15:08:28	40.65	20.00	135.69	0.02	0.02	881	52440		

**TABLE D-32**

Profile PRO-26 on September 22, 2022 (1458-1509 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

114	Instantaneous Minimum Dilution in Profile
196	Minimum Average Dilution in Profile
488	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:08:29	40.70	20.00	135.69	0.02	0.02	881	45412		
			15:08:30	40.64	20.00	135.69	0.02	0.02	881	49218		
			15:08:31	40.68	20.00	135.84	0.02	0.02	881	46614		
			15:08:32	40.65	20.00	135.86	0.02	0.02	881	49218		
			15:08:33	40.61	20.00	135.95	0.02	0.02	881	50925		
			15:08:34	40.61	20.00	135.87	0.02	0.02	881	47112		
			15:08:35	40.66	20.00	135.84	0.02	0.02	881	47622		
			15:08:36	40.65	20.00	135.88	0.02	0.02	881	48674		
			15:08:37	40.61	20.00	135.82	0.02	0.02	881	49774		
			15:08:38	40.74	20.00	135.88	0.02	0.02	881	51824		
			15:08:39	40.69	19.99	135.95	0.02	0.02	881	50057		
			15:08:40	40.70	19.99	136.07	0.02	0.02	881	49218		
			15:08:41	40.69	19.99	136.01	0.02	0.02	881	50632		
			15:08:42	40.70	19.99	136.01	0.02	0.02	881	47112		
			15:08:43	40.69	19.99	136.03	0.02	0.02	881	50057		
			15:08:44	40.70	19.99	135.99	0.02	0.02	881	44495		
			15:08:45	40.71	19.99	135.84	0.02	0.02	881	51824		
			15:08:46	40.73	20.00	135.71	0.02	0.02	881	44949		
			15:08:47	40.70	20.00	135.76	0.02	0.02	881	48674		
			15:08:48	40.70	20.00	135.76	0.02	0.02	881	49774		
			15:08:49	40.70	20.00	135.82	0.02	0.02	881	45648		
			15:08:50	40.68	20.00	135.81	0.02	0.02	881	50632		
			15:08:51	40.70	20.00	135.88	0.02	0.02	881	49218		
			15:08:52	40.69	20.00	136.08	0.02	0.02	881	51824		
			15:08:53	40.69	19.99	136.51	0.02	0.02	881	45648		
			15:08:54	40.69	19.99	136.57	0.02	0.02	881	49494		
			15:08:55	40.63	19.99	136.51	0.02	0.02	881	49218		
			15:08:56	40.70	19.99	136.60	0.02	0.02	881	45179		
			15:08:57	40.65	19.98	136.69	0.02	0.02	881	45648		
			15:08:58	40.64	19.98	136.72	0.02	0.02	881	49774		
			15:08:59	40.61	19.98	136.79	0.02	0.02	881	46126		
			15:09:00	40.62	19.98	136.85	0.02	0.02	881	51221		
			15:09:01	40.64	19.98	136.91	0.02	0.02	881	48674		
			15:09:02	40.63	19.98	136.99	0.02	0.02	881	46126		
			15:09:03	40.61	19.98	137.10	0.02	0.02	881	47112		
			15:09:04	40.67	19.98	137.03	0.02	0.02	881	51221		
			15:09:05	40.66	19.98	137.13	0.02	0.02	881	44050		
			15:09:06	40.63	19.98	137.22	0.02	0.02	881	47112		
			15:09:07	40.67	19.98	137.49	0.02	0.02	881	48674		



**TABLE D-32**

Profile PRO-26 on September 22, 2022 (1458-1509 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

114	Instantaneous Minimum Dilution in Profile
196	Minimum Average Dilution in Profile
488	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:09:08	40.62	19.99	137.62	0.02	0.02	881	50343		
			15:09:09	40.64	19.99	137.64	0.02	0.02	881	50925		
			15:09:10	40.64	19.99	137.72	0.02	0.02	881	49774		
			15:09:11	40.61	20.00	137.91	0.02	0.02	881	50343		
			15:09:12	40.70	20.00	138.04	0.02	0.02	881	49218		
			15:09:13	40.68	19.99	138.03	0.02	0.02	881	51520		
			15:09:14	40.67	19.99	138.17	0.02	0.02	881	47112		

**TABLE D-33**

Profile PRO-27 on September 22, 2022 (1518-1532 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

84	Instantaneous Minimum Dilution in Profile
159	Minimum Average Dilution in Profile
251	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-27 (South Mixing Zone Boundary - 242 ft from Diffuser) located E of mid-point	47 ft	0.27 m/sec 165 deg. (mag.) Flood Tide	15:18:05	2.36	20.22	139.11	0.02	0.02	825	42308		No plume detected near surface
			15:18:06	2.50	20.22	138.83	0.02	0.02	825	45580		
			15:18:07	2.48	20.20	139.03	0.02	0.02	825	44595		
			15:18:08	2.51	20.20	139.39	0.02	0.02	825	45082		
			15:18:09	2.44	20.18	139.62	0.02	0.02	825	43194		
			15:18:10	2.45	20.17	139.70	0.02	0.02	825	43194		
			15:18:11	2.51	20.17	139.76	0.02	0.02	825	46875		
			15:18:12	2.46	20.16	139.86	0.02	0.02	825	43194		
			15:18:13	2.46	20.17	139.82	0.02	0.02	825	44118		
			15:18:14	2.47	20.18	139.68	0.02	0.02	825	43194		
			15:18:15	2.52	20.19	139.64	0.02	0.02	825	44118		
			15:18:16	2.50	20.19	139.55	0.02	0.02	825	46089		
			15:18:17	2.55	20.19	139.49	0.02	0.02	825	45580		
			15:18:18	2.55	20.19	139.45	0.02	0.02	825	43883		
			15:18:19	2.47	20.19	139.51	0.02	0.02	825	45082		
			15:18:20	2.52	20.19	139.15	0.02	0.02	825	44595		
			15:18:21	2.48	20.12	138.96	0.02	0.02	825	44595		
			15:18:22	2.50	20.06	139.04	0.02	0.02	825	43194		
			15:18:23	2.48	20.03	139.00	0.02	0.02	825	42746		
			15:18:24	2.48	20.02	139.06	0.02	0.02	825	48246		
			15:18:25	2.49	20.01	139.13	0.02	0.02	825	44118		
			15:18:26	2.50	20.00	139.09	0.02	0.02	825	49107		
			15:18:27	2.54	20.00	139.06	0.02	0.02	825	46089		
			15:18:28	2.52	20.00	139.15	0.02	0.02	825	46089		
			15:18:29	2.55	20.00	139.15	0.02	0.02	825	41250		
			15:18:30	2.56	20.01	139.25	0.02	0.02	825	43194		
15:18:31	2.50	20.03	139.19	0.02	0.02	825	46089					
15:18:32	2.53	20.04	139.28	0.02	0.02	825	47688					
15:18:33	2.53	20.05	139.34	0.02	0.02	825	49107					
15:18:34	2.42	20.07	139.45	0.02	0.02	825	47414					
15:18:35	2.42	20.08	139.26	0.02	0.02	825	44118					
15:18:36	2.45	20.06	139.36	0.02	0.02	825	41457					
15:18:37	2.29	20.05	139.36	0.02	0.02	825	46089					
15:18:38	2.37	20.05	139.43	0.02	0.02	825	46875					
15:18:39	2.32	20.07	139.47	0.02	0.02	825	46089					
15:18:40	2.37	20.06	139.51	0.02	0.02	825	40842					
15:18:41	2.36	20.09	139.49	0.02	0.02	825	46610					
15:18:42	2.44	20.10	139.40	0.02	0.02	825	44118					
15:18:43	2.60	20.09	139.42	0.02	0.02	825	42526					

**TABLE D-33**

Profile PRO-27 on September 22, 2022 (1518-1532 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

84	Instantaneous Minimum Dilution in Profile
159	Minimum Average Dilution in Profile
251	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:18:44	2.61	20.08	139.42	0.02	0.02	825	45580		No plume detected at 8 ft
			15:18:45	2.61	20.10	139.41	0.02	0.02	825	42746		
			15:18:46	2.88	20.09	139.32	0.02	0.02	825	45082		
			15:18:47	5.31	20.11	141.27	0.02	0.02	825	43194		
			15:18:48	7.73	20.12	141.90	0.02	0.02	825	43651		
			15:18:49	8.13	20.11	142.11	0.02	0.02	825	45082		
			15:18:50	8.34	20.10	142.25	0.02	0.02	825	45082		
			15:18:51	8.28	20.09	142.32	0.02	0.02	825	44118		
			15:18:52	8.27	20.10	142.14	0.02	0.02	825	45082		
			15:18:53	8.27	20.10	142.00	0.02	0.02	825	44595		
			15:18:54	8.28	20.11	142.00	0.02	0.02	825	44595		
			15:18:55	8.33	20.10	142.06	0.02	0.02	825	45580		
			15:18:56	8.35	20.10	142.06	0.02	0.02	825	47143		
			15:18:57	8.41	20.10	142.11	0.02	0.02	825	42308		
			15:18:58	8.31	20.09	142.21	0.02	0.02	825	46875		
			15:18:59	8.34	20.09	142.13	0.02	0.02	825	49107		
			15:19:00	8.34	20.09	142.28	0.02	0.02	825	49699		
			15:19:01	8.30	20.09	142.19	0.02	0.02	825	45082		
			15:19:02	8.31	20.09	142.13	0.02	0.02	825	41457		
			15:19:03	8.28	20.10	142.00	0.02	0.02	825	41667		
			15:19:04	8.26	20.10	141.96	0.02	0.02	825	46089		
			15:19:05	8.34	20.10	141.92	0.02	0.02	825	46875		
			15:19:06	8.27	20.10	141.98	0.02	0.02	825	43651		
			15:19:07	8.31	20.10	142.04	0.02	0.02	825	49107		
			15:19:08	8.30	20.09	142.08	0.02	0.02	825	42526		
			15:19:09	8.29	20.09	142.15	0.02	0.02	825	45082		
			15:19:10	8.26	20.08	142.19	0.02	0.02	825	48246		
			15:19:11	8.28	20.08	142.23	0.02	0.02	825	45580		
			15:19:12	8.34	20.09	142.02	0.02	0.02	825	40842		
			15:19:13	8.29	20.10	141.77	0.02	0.02	825	45580		
			15:19:14	8.32	20.11	141.60	0.02	0.02	825	42746		
			15:19:15	8.33	20.13	141.33	0.02	0.02	825	42746		
			15:19:16	8.32	20.14	141.33	0.02	0.02	825	44595		
			15:19:17	8.31	20.14	141.29	0.02	0.02	825	45082		
			15:19:18	8.28	20.14	141.19	0.02	0.02	825	43194		
			15:19:19	8.35	20.14	141.44	0.02	0.02	825	46348		
			15:19:20	8.27	20.14	141.29	0.02	0.02	825	44118		
			15:19:21	8.32	20.14	141.54	0.02	0.02	825	46610		
			15:19:22	8.29	20.15	141.17	0.02	0.02	825	46610		

**TABLE D-33**

Profile PRO-27 on September 22, 2022 (1518-1532 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

84	Instantaneous Minimum Dilution in Profile
159	Minimum Average Dilution in Profile
251	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:19:23	8.35	20.15	141.03	0.02	0.02	825	46610		No plume detected at 13-14 ft
			15:19:24	8.30	20.16	140.93	0.02	0.02	825	46610		
			15:19:25	8.43	20.16	141.05	0.02	0.02	825	42969		
			15:19:26	8.72	20.14	141.52	0.02	0.02	825	44118		
			15:19:27	9.16	20.12	142.06	0.02	0.02	825	49107		
			15:19:28	11.26	20.09	142.42	0.02	0.02	825	41878		
			15:19:29	13.58	20.08	142.56	0.02	0.02	825	43194		
			15:19:30	13.95	20.08	142.67	0.02	0.02	825	50305		
			15:19:31	14.05	20.07	142.76	0.02	0.02	825	46610		
			15:19:32	14.09	20.07	142.65	0.02	0.02	825	42308		
			15:19:33	14.13	20.08	142.55	0.02	0.02	825	41250		
			15:19:34	14.08	20.08	142.53	0.02	0.02	825	44595		
			15:19:35	14.09	20.08	142.56	0.02	0.02	825	43651		
			15:19:36	14.03	20.08	142.52	0.02	0.02	825	43651		
			15:19:37	14.13	20.08	142.38	0.02	0.02	825	45082		
			15:19:38	14.07	20.09	142.30	0.02	0.02	825	45082		
			15:19:39	14.08	20.09	142.52	0.02	0.02	825	42092		
			15:19:40	14.06	20.08	142.49	0.02	0.02	825	49699		
			15:19:41	14.04	20.09	142.15	0.02	0.02	825	44595		
			15:19:42	14.04	20.10	141.80	0.02	0.02	825	41667		
			15:19:43	14.06	20.11	141.58	0.02	0.02	825	40842		
			15:19:44	14.09	20.12	141.48	0.02	0.02	825	42746		
			15:19:45	14.08	20.12	141.44	0.02	0.02	825	44595		
			15:19:46	14.08	20.12	141.65	0.02	0.02	825	46610		
			15:19:47	14.08	20.11	141.83	0.02	0.02	825	46875		
			15:19:48	14.04	20.11	141.85	0.02	0.02	825	43194		
			15:19:49	14.04	20.11	141.92	0.02	0.02	825	44595		
			15:19:50	14.12	20.11	142.48	0.02	0.02	825	45082		
			15:19:51	14.07	20.11	143.05	0.02	0.02	825	44118		
			15:19:52	14.02	20.12	143.33	0.02	0.02	825	44118		
			15:19:53	14.07	20.11	143.53	0.02	0.02	825	46610		
			15:19:54	14.04	20.10	143.62	0.02	0.02	825	42092		
			15:19:55	14.07	20.10	143.72	0.02	0.02	825	42746		
			15:19:56	14.05	20.10	143.63	0.02	0.02	825	47143		
			15:19:57	14.02	20.10	143.51	0.02	0.02	825	44595		
			15:19:58	14.03	20.10	143.38	0.02	0.02	825	44595		
			15:19:59	14.04	20.10	143.32	0.02	0.02	825	49107		
			15:20:00	14.01	20.10	143.34	0.02	0.02	825	47688		
			15:20:01	14.02	20.10	143.40	0.02	0.02	825	45580		

**TABLE D-33**

Profile PRO-27 on September 22, 2022 (1518-1532 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

84	Instantaneous Minimum Dilution in Profile
159	Minimum Average Dilution in Profile
251	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:20:02	14.05	20.10	143.45	0.02	0.02	825	50305		
			15:20:03	14.03	20.10	143.47	0.02	0.02	825	44595		
			15:20:04	14.01	20.10	143.57	0.02	0.02	825	41878		
			15:20:05	14.03	20.09	143.64	0.02	0.02	825	44118		
			15:20:06	14.03	20.08	143.64	0.02	0.02	825	44595		
			15:20:07	14.04	20.08	143.64	0.02	0.02	825	50305		
			15:20:08	14.05	20.07	143.57	0.02	0.02	825	43194		
			15:20:09	14.05	20.07	143.55	0.02	0.02	825	46089		
			15:20:10	14.04	20.08	143.53	0.02	0.02	825	44595		
			15:20:11	14.03	20.08	143.57	0.02	0.02	825	42746		
			15:20:12	14.06	20.08	143.49	0.02	0.02	825	41250		
			15:20:13	14.02	20.07	143.45	0.02	0.02	825	40441		
			15:20:14	14.08	20.06	143.34	0.02	0.02	825	46610		
			15:20:15	14.03	20.06	143.43	0.02	0.02	825	44118		
			15:20:16	14.02	20.06	143.51	0.02	0.02	825	42746		
			15:20:17	14.10	20.07	143.51	0.02	0.02	825	43194		
			15:20:18	14.27	20.08	143.51	0.02	0.02	825	46089		
			15:20:19	14.39	20.09	143.53	0.02	0.02	825	46875		
			15:20:20	15.50	20.10	143.51	0.02	0.02	825	44595		
			15:20:21	18.54	20.11	143.15	0.02	0.02	825	42746		
			15:20:22	19.45	20.09	143.11	0.02	0.02	825	43883		No plume detected at 19-20 ft
			15:20:23	19.60	20.10	143.23	0.02	0.02	825	40842		
			15:20:24	19.61	20.10	143.34	0.02	0.02	825	45082		
			15:20:25	19.59	20.09	143.49	0.02	0.02	825	42746		
			15:20:26	19.53	20.08	143.49	0.02	0.02	825	42746		
			15:20:27	19.53	20.08	143.59	0.02	0.02	825	40842		
			15:20:28	19.51	20.08	143.59	0.02	0.02	825	46875		
			15:20:29	19.55	20.08	143.57	0.02	0.02	825	43194		
			15:20:30	19.51	20.08	143.55	0.02	0.02	825	44595		
			15:20:31	19.52	20.08	143.47	0.02	0.02	825	46089		
			15:20:32	19.54	20.08	143.38	0.02	0.02	825	41878		
			15:20:33	19.51	20.09	143.49	0.02	0.02	825	45082		
			15:20:34	19.55	20.09	143.51	0.02	0.02	825	46089		
			15:20:35	19.52	20.09	143.40	0.02	0.02	825	46610		
			15:20:36	19.59	20.09	143.32	0.02	0.02	825	43651		
			15:20:37	19.56	20.08	143.23	0.02	0.02	825	46610		
			15:20:38	19.67	20.08	143.22	0.02	0.02	825	49107		
			15:20:39	19.53	20.09	143.18	0.02	0.02	825	48246		
			15:20:40	19.58	20.09	143.20	0.02	0.02	825	46610		

**TABLE D-33**

Profile PRO-27 on September 22, 2022 (1518-1532 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

84	Instantaneous Minimum Dilution in Profile
159	Minimum Average Dilution in Profile
251	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:20:41	19.61	20.10	143.14	0.02	0.02	825	42526		
			15:20:42	19.56	20.10	143.07	0.02	0.02	825	40441		
			15:20:43	19.59	20.11	143.14	0.02	0.02	825	49107		
			15:20:44	19.59	20.12	143.08	0.02	0.02	825	46089		
			15:20:45	19.52	20.12	143.09	0.02	0.02	825	43651		
			15:20:46	19.60	20.13	143.07	0.02	0.02	825	45082		
			15:20:47	19.55	20.12	142.97	0.02	0.02	825	42746		
			15:20:48	19.57	20.12	143.09	0.02	0.02	825	48529		
			15:20:49	19.56	20.11	143.11	0.02	0.02	825	45082		
			15:20:50	19.58	20.12	143.18	0.02	0.02	825	48529		
			15:20:51	19.58	20.12	143.22	0.02	0.02	825	42308		
			15:20:52	19.58	20.12	143.29	0.02	0.02	825	45580		
			15:20:53	19.57	20.12	143.38	0.02	0.02	825	44118		
			15:20:54	19.56	20.12	143.40	0.02	0.02	825	43194		
			15:20:55	19.68	20.12	143.36	0.02	0.02	825	45082		
			15:20:56	20.18	20.12	143.47	0.02	0.02	825	49699		
			15:20:57	22.83	20.11	144.41	0.37	0.37	825	2214		
			15:20:58	24.31	20.09	144.12	0.30	0.30	825	2750		
			15:20:59	24.77	20.10	143.95	0.02	0.02	825	47688		
			15:21:00	24.86	20.10	143.68	0.02	0.02	825	42746		
			15:21:01	24.89	20.10	143.62	0.02	0.02	825	47143		
			15:21:02	24.94	20.10	143.51	0.02	0.02	825	48529		
			15:21:03	24.85	20.09	143.45	0.02	0.02	825	44595		
			15:21:04	24.81	20.08	143.38	0.02	0.02	825	44595		
			15:21:05	24.85	20.09	143.49	0.02	0.02	825	42308		
			15:21:06	24.86	20.09	143.53	0.02	0.02	825	43651		
			15:21:07	24.83	20.10	143.62	0.02	0.02	825	45580		
			15:21:08	24.85	20.11	143.59	0.02	0.02	825	41878		
			15:21:09	24.85	20.11	143.55	0.02	0.02	825	42092		
			15:21:10	24.87	20.10	143.45	0.02	0.02	825	46089		
			15:21:11	24.82	20.10	143.47	0.02	0.02	825	45082		
			15:21:12	24.88	20.10	143.47	0.02	0.02	825	44118		
			15:21:13	24.85	20.10	143.40	0.02	0.02	825	42526		
			15:21:14	24.83	20.10	143.43	0.02	0.02	825	46089		
			15:21:15	24.84	20.10	143.43	0.02	0.02	825	41667		
			15:21:16	24.84	20.10	143.43	0.02	0.02	825	45580		
			15:21:17	24.83	20.10	143.47	0.02	0.02	825	44595		
			15:21:18	24.85	20.10	143.53	0.02	0.02	825	44595		
			15:21:19	24.80	20.10	143.49	0.02	0.02	825	47414		

No plume detected at 24-25 ft

**TABLE D-33**

Profile PRO-27 on September 22, 2022 (1518-1532 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

84	Instantaneous Minimum Dilution in Profile
159	Minimum Average Dilution in Profile
251	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:21:20	24.84	20.11	143.45	0.02	0.02	825	42308		
			15:21:21	24.86	20.11	143.45	0.02	0.02	825	44595		
			15:21:22	24.86	20.11	143.47	0.02	0.02	825	47688		
			15:21:23	24.89	20.12	143.43	0.02	0.02	825	41667		
			15:21:24	24.90	20.12	143.45	0.02	0.02	825	43651		
			15:21:25	24.83	20.12	143.43	0.02	0.02	825	46610		
			15:21:26	24.86	20.12	143.36	0.02	0.02	825	42746		
			15:21:27	24.83	20.13	143.38	0.02	0.02	825	48529		
			15:21:28	24.84	20.13	143.34	0.02	0.02	825	42746		
			15:21:29	24.85	20.13	143.26	0.02	0.02	825	43651		
			15:21:30	24.85	20.12	143.18	0.02	0.02	825	47143		
			15:21:31	24.86	20.10	143.18	0.02	0.02	825	45580		
			15:21:32	24.83	20.09	143.06	0.02	0.02	825	45082		
			15:21:33	24.83	20.08	143.14	0.02	0.02	825	43651		
			15:21:34	24.86	20.08	143.16	0.02	0.02	825	48529		
			15:21:35	24.87	20.08	143.14	0.02	0.02	825	40049		
			15:21:36	24.86	20.07	143.16	0.02	0.02	825	46610		
			15:21:37	24.84	20.07	143.18	0.02	0.02	825	45580		
			15:21:38	24.87	20.07	143.16	0.02	0.02	825	43883		
			15:21:39	24.88	20.07	143.19	0.02	0.02	825	43651		
			15:21:40	24.86	20.06	143.20	0.02	0.02	825	41878		
			15:21:41	24.92	20.06	143.25	0.02	0.02	825	45580		
			15:21:42	24.93	20.06	143.25	0.02	0.02	825	46089		
			15:21:43	25.14	20.06	143.18	0.02	0.02	825	49107		
			15:21:44	25.49	20.06	143.09	0.02	0.02	825	49699		
			15:21:45	27.84	20.06	142.99	0.02	0.02	825	46089		
			15:21:46	29.67	20.06	142.94	0.02	0.02	825	46089		
			15:21:47	30.01	20.06	142.92	0.02	0.02	825	44595		
			15:21:48	30.20	20.06	142.97	0.02	0.02	825	44118		
			15:21:49	30.18	20.05	143.05	0.02	0.02	825	43194		
			15:21:50	30.21	20.05	143.21	0.02	0.02	825	45580		
			15:21:51	30.18	20.05	143.91	0.02	0.02	825	45580		
			15:21:52	30.14	20.05	145.19	1.36	0.85	825	975		
			15:21:53	30.11	20.06	146.93	6.44	5.40	825	153		
			15:21:54	30.11	20.06	146.84	4.41	3.58	825	231		
			15:21:55	30.12	20.06	146.99	5.11	4.20	825	196		
			15:21:56	30.16	20.06	146.85	6.73	5.66	825	146	218	Measured plume at 30 ft
			15:21:57	30.15	20.06	146.09	4.67	3.82	825	216		
			15:21:58	30.12	20.06	146.32	5.27	4.35	825	190		

**TABLE D-33**

Profile PRO-27 on September 22, 2022 (1518-1532 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

84	Instantaneous Minimum Dilution in Profile
159	Minimum Average Dilution in Profile
251	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:21:59	30.09	20.07	146.83	4.77	3.90	825	211		Measured plume at 30 ft
			15:22:00	30.13	20.07	147.26	6.80	5.72	825	144		
			15:22:01	30.06	20.07	147.72	7.04	5.94	825	139		
			15:22:02	30.17	20.07	147.79	3.16	2.46	825	336		
			15:22:03	30.09	20.07	147.32	2.54	1.90	825	433		
			15:22:04	30.16	20.07	146.40	0.27	0.27	825	3076		
			15:22:05	30.06	20.07	146.55	1.36	0.84	825	977		
			15:22:06	29.99	20.07	147.63	5.02	4.13	825	200		
			15:22:07	29.91	20.07	147.68	7.25	6.13	825	135		
			15:22:08	29.89	20.07	148.14	7.97	6.77	825	122	191	
			15:22:09	29.83	20.07	148.39	9.45	8.10	825	102		
			15:22:10	29.82	20.07	147.16	8.64	7.38	825	112		
			15:22:11	29.82	20.06	144.70	2.34	1.72	825	479		
			15:22:12	29.87	20.06	143.61	0.02	0.02	825	50926		
			15:22:13	29.83	20.06	143.12	0.02	0.02	825	47414		
			15:22:14	29.87	20.07	143.18	0.02	0.02	825	47414		
			15:22:15	29.87	20.07	143.16	0.02	0.02	825	43194		
			15:22:16	29.84	20.07	143.20	0.02	0.02	825	48246		
			15:22:17	29.84	20.07	143.18	0.02	0.02	825	44118		
			15:22:18	29.85	20.07	143.29	0.02	0.02	825	43651		
			15:22:19	29.83	20.07	143.11	0.02	0.02	825	50305		
			15:22:20	29.74	20.06	143.38	0.02	0.02	825	46610		
			15:22:21	29.78	20.06	144.39	0.02	0.02	825	44118		
			15:22:22	29.79	20.07	145.39	2.94	2.26	825	365		
			15:22:23	29.84	20.07	146.12	5.24	4.32	825	191		
			15:22:24	29.83	20.07	146.75	2.95	2.27	825	364		
			15:22:25	29.86	20.07	147.41	4.35	3.53	825	234		
			15:22:26	29.85	20.07	147.21	5.09	4.19	825	197		
			15:22:27	29.84	20.07	146.49	4.24	3.43	825	241		
			15:22:28	29.83	20.07	146.12	4.86	3.99	825	207	191	
			15:22:29	29.88	20.06	146.11	4.67	3.81	825	216	Measured plume at 30 ft	
			15:22:30	29.86	20.06	146.43	5.78	4.81	825	172		
			15:22:31	29.88	20.07	146.92	7.85	6.67	825	124		
			15:22:32	29.85	20.07	147.26	8.37	7.13	825	116		
			15:22:33	29.89	20.07	147.36	6.69	5.63	825	147		
			15:22:34	29.87	20.07	147.24	6.33	5.30	825	156		
			15:22:35	29.86	20.07	147.22	6.81	5.73	825	144		
			15:22:36	29.87	20.06	147.14	7.02	5.92	825	139		
			15:22:37	29.85	20.07	147.29	8.00	6.80	825	121		



**TABLE D-33**

Profile PRO-27 on September 22, 2022 (1518-1532 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

84	Instantaneous Minimum Dilution in Profile
159	Minimum Average Dilution in Profile
251	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:22:38	29.83	20.07	147.29	7.83	6.65	825	124		Measured plume at 30 ft
			15:22:39	29.86	20.07	147.31	7.21	6.09	825	135		
			15:22:40	29.83	20.07	146.96	4.16	3.35	825	246		
			15:22:41	29.80	20.06	144.86	0.69	0.24	825	3434		
			15:22:42	29.85	20.06	144.77	0.62	0.18	825	4567		
			15:22:43	29.85	20.06	145.39	3.58	2.83	825	291		
			15:22:44	29.84	20.06	145.94	5.41	4.48	825	184		
			15:22:45	29.86	20.07	146.73	5.37	4.44	825	186	176	
			15:22:46	29.83	20.07	147.83	7.97	6.77	825	122		
			15:22:47	29.81	20.07	147.55	8.41	7.16	825	115		
			15:22:48	29.84	20.07	147.10	6.30	5.28	825	156		
			15:22:49	29.83	20.06	145.51	1.15	0.65	825	1263		
			15:22:50	29.82	20.06	143.78	0.02	0.02	825	42746		
			15:22:51	29.80	20.05	144.29	0.02	0.02	825	44118		
			15:22:52	29.84	20.06	144.37	0.07	0.07	825	12222		
			15:22:53	29.84	20.05	143.60	0.02	0.02	825	41457		
			15:22:54	29.82	20.05	143.07	0.02	0.02	825	45082		
			15:22:55	29.84	20.05	142.82	0.02	0.02	825	45580		
			15:22:56	29.84	20.04	142.80	0.02	0.02	825	42746		
			15:22:57	29.85	20.04	142.82	0.02	0.02	825	46875		
			15:22:58	29.82	20.04	142.76	0.02	0.02	825	44118		
			15:22:59	29.85	20.04	142.80	0.02	0.02	825	43651		
			15:23:00	29.79	20.04	142.84	0.02	0.02	825	42746		
			15:23:01	29.81	20.04	142.86	0.02	0.02	825	47143		
			15:23:02	29.85	20.04	142.82	0.02	0.02	825	44595		
			15:23:03	29.82	20.04	142.82	0.02	0.02	825	46348		
			15:23:04	29.86	20.04	142.82	0.02	0.02	825	40842		
			15:23:05	29.77	20.04	142.90	0.02	0.02	825	42746		
			15:23:06	29.83	20.04	143.14	0.02	0.02	825	48529		
			15:23:07	29.81	20.05	144.15	0.02	0.02	825	43651		
			15:23:08	29.83	20.05	144.89	0.99	0.51	825	1621		
			15:23:09	29.83	20.05	145.13	3.07	2.38	825	347		
			15:23:10	29.82	20.05	144.51	1.58	1.04	825	796		
			15:23:11	29.83	20.05	143.68	0.25	0.25	825	3279		
			15:23:12	29.82	20.05	143.47	0.02	0.02	825	43651		
			15:23:13	29.78	20.05	143.64	0.02	0.02	825	48529		
			15:23:14	29.80	20.05	143.50	0.02	0.02	825	45082		
			15:23:15	29.82	20.05	143.31	0.02	0.02	825	47688		
			15:23:16	29.84	20.04	143.25	0.02	0.02	825	43651		

**TABLE D-33**

Profile PRO-27 on September 22, 2022 (1518-1532 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

84	Instantaneous Minimum Dilution in Profile
159	Minimum Average Dilution in Profile
251	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:23:17	29.84	20.04	143.01	0.02	0.02	825	50926		
			15:23:18	29.82	20.04	143.01	0.02	0.02	825	45580		
			15:23:19	29.85	20.04	142.92	0.02	0.02	825	48529		
			15:23:20	29.83	20.04	143.50	0.02	0.02	825	46089		
			15:23:21	29.87	20.04	143.55	0.02	0.02	825	44118		
			15:23:22	29.83	20.04	143.17	0.02	0.02	825	45082		
			15:23:23	29.86	20.04	142.99	0.02	0.02	825	48246		
			15:23:24	29.84	20.04	142.92	0.02	0.02	825	47143		
			15:23:25	29.89	20.04	142.61	0.02	0.02	825	44595		
			15:23:26	29.85	20.04	142.48	0.02	0.02	825	45580		
			15:23:27	29.89	20.04	142.42	0.02	0.02	825	48529		
			15:23:28	29.86	20.04	142.39	0.02	0.02	825	44118		
			15:23:29	29.88	20.04	142.38	0.02	0.02	825	43194		
			15:23:30	29.81	20.04	142.42	0.02	0.02	825	44118		
			15:23:31	29.88	20.04	142.42	0.02	0.02	825	46089		
			15:23:32	29.83	20.04	142.40	0.02	0.02	825	44595		
			15:23:33	29.80	20.04	142.36	0.02	0.02	825	44595		
			15:23:34	29.81	20.04	142.28	0.02	0.02	825	45580		
			15:23:35	29.78	20.04	142.16	0.02	0.02	825	47688		
			15:23:36	29.77	20.04	142.17	0.02	0.02	825	42526		
			15:23:37	29.80	20.04	142.17	0.02	0.02	825	41667		
			15:23:38	29.81	20.04	142.21	0.02	0.02	825	45082		
			15:23:39	29.85	20.04	142.56	0.02	0.02	825	47143		
			15:23:40	29.80	20.04	142.90	0.02	0.02	825	42526		
			15:23:41	29.83	20.04	142.84	0.02	0.02	825	43194		
			15:23:42	29.81	20.04	142.83	0.02	0.02	825	46875		
			15:23:43	29.88	20.04	142.67	0.02	0.02	825	46610		
			15:23:44	29.84	20.04	142.63	0.18	0.18	825	4469		
			15:23:45	29.81	20.04	142.67	0.02	0.02	825	45082		
			15:23:46	29.81	20.04	142.90	0.02	0.02	825	42746		
			15:23:47	29.84	20.04	143.40	0.02	0.02	825	46875		
			15:23:48	29.79	20.04	143.62	0.34	0.34	825	2407		
			15:23:49	29.80	20.05	143.74	0.02	0.02	825	41878		
			15:23:50	29.85	20.05	143.87	0.02	0.02	825	45580		
			15:23:51	29.83	20.05	143.45	0.02	0.02	825	45580		
			15:23:52	29.83	20.05	143.23	0.02	0.02	825	45580		
			15:23:53	29.87	20.05	143.59	0.02	0.02	825	43194		
			15:23:54	29.84	20.04	143.27	0.02	0.02	825	41878		
			15:23:55	29.86	20.04	143.55	0.02	0.02	825	46610		

**TABLE D-33**

Profile PRO-27 on September 22, 2022 (1518-1532 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

84	Instantaneous Minimum Dilution in Profile
159	Minimum Average Dilution in Profile
251	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:23:56	29.81	20.05	143.94	0.02	0.02	825	46875		
			15:23:57	29.85	20.04	143.59	0.04	0.04	825	22981		
			15:23:58	29.87	20.04	143.91	0.02	0.02	825	49699		
			15:23:59	29.87	20.04	143.51	0.02	0.02	825	44118		
			15:24:00	29.85	20.04	143.09	0.02	0.02	825	41667		
			15:24:01	29.88	20.04	142.80	0.02	0.02	825	46089		
			15:24:02	29.88	20.04	142.61	0.02	0.02	825	45082		
			15:24:03	29.92	20.04	142.54	0.02	0.02	825	49699		
			15:24:04	29.92	20.04	142.63	0.02	0.02	825	46348		
			15:24:05	29.97	20.04	142.63	0.02	0.02	825	44595		
			15:24:06	30.05	20.04	142.90	0.02	0.02	825	47414		
			15:24:07	30.12	20.04	143.68	0.34	0.34	825	2439		
			15:24:08	30.24	20.04	143.09	0.02	0.02	825	44595		
			15:24:09	30.21	20.04	142.60	0.02	0.02	825	46348		
			15:24:10	30.32	20.04	142.36	0.02	0.02	825	44595		
			15:24:11	30.50	20.04	142.15	0.02	0.02	825	43651		
			15:24:12	32.02	20.04	142.17	0.02	0.02	825	45580		
			15:24:13	34.85	20.04	142.28	0.02	0.02	825	43651		
			15:24:14	35.65	20.04	142.46	0.02	0.02	825	45580		
			15:24:15	35.84	20.04	142.71	0.02	0.02	825	42308		
			15:24:16	35.85	20.04	143.26	0.02	0.02	825	45082		
			15:24:17	35.83	20.04	143.29	0.02	0.02	825	45082		
			15:24:18	35.85	20.04	142.92	0.02	0.02	825	46875		
			15:24:19	35.71	20.04	142.36	0.02	0.02	825	44118		
			15:24:20	35.81	20.04	142.34	0.02	0.02	825	46610		
			15:24:21	35.79	20.04	142.86	0.02	0.02	825	47688		
			15:24:22	35.73	20.04	143.98	0.02	0.02	825	43651		
			15:24:23	35.71	20.04	144.24	0.02	0.02	825	43194		
			15:24:24	35.52	20.04	143.47	0.02	0.02	825	43651		
			15:24:25	35.63	20.04	142.80	0.02	0.02	825	44595		
			15:24:26	35.53	20.04	142.34	0.02	0.02	825	47965		
			15:24:27	35.56	20.04	142.23	0.02	0.02	825	47688		
			15:24:28	35.47	20.04	142.11	0.02	0.02	825	46610		
			15:24:29	35.56	20.04	142.15	0.02	0.02	825	46610		
			15:24:30	35.48	20.04	142.12	0.02	0.02	825	45580		
			15:24:31	35.54	20.04	142.15	0.02	0.02	825	45580		
			15:24:32	35.51	20.04	142.11	0.02	0.02	825	46348		
			15:24:33	35.54	20.04	142.11	0.02	0.02	825	45580		
			15:24:34	35.48	20.04	142.04	0.02	0.02	825	48529		

**TABLE D-33**

Profile PRO-27 on September 22, 2022 (1518-1532 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

84	Instantaneous Minimum Dilution in Profile
159	Minimum Average Dilution in Profile
251	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:24:35	35.46	20.04	141.81	0.02	0.02	825	45580		
			15:24:36	35.54	20.04	141.65	0.02	0.02	825	44118		
			15:24:37	35.50	20.04	141.68	0.02	0.02	825	48246		
			15:24:38	35.54	20.04	141.65	0.02	0.02	825	44595		
			15:24:39	35.50	20.04	141.72	0.02	0.02	825	48529		
			15:24:40	35.53	20.04	142.07	0.02	0.02	825	45082		
			15:24:41	35.53	20.04	142.25	0.02	0.02	825	46875		
			15:24:42	35.55	20.04	142.17	0.02	0.02	825	47688		
			15:24:43	35.55	20.04	142.11	0.03	0.03	825	27872		
			15:24:44	35.55	20.04	142.80	0.94	0.46	825	1776		
			15:24:45	35.57	20.04	143.28	1.59	1.04	825	790		
			15:24:46	35.54	20.04	142.54	0.02	0.02	825	45082		
			15:24:47	35.57	20.04	142.61	0.02	0.02	825	46875		
			15:24:48	35.54	20.04	142.92	0.07	0.07	825	12115		
			15:24:49	35.58	20.04	142.84	0.31	0.31	825	2677		
			15:24:50	35.53	20.04	142.88	0.12	0.12	825	7161		
			15:24:51	35.51	20.04	142.90	0.11	0.11	825	7186		
			15:24:52	35.55	20.04	143.33	0.07	0.07	825	11636		
			15:24:53	35.53	20.04	143.90	0.42	0.42	825	1969		
			15:24:54	35.52	20.04	144.16	0.98	0.50	825	1637		
			15:24:55	35.55	20.04	144.33	1.65	1.10	825	750		
			15:24:56	35.52	20.04	144.35	1.57	1.03	825	799		
			15:24:57	35.56	20.04	144.56	2.24	1.63	825	506		
			15:24:58	35.55	20.04	144.77	2.99	2.31	825	357	413	Measured plume at 35 ft
			15:24:59	35.60	20.04	144.58	3.25	2.54	825	325		
			15:25:00	35.59	20.04	144.58	2.70	2.04	825	404		
			15:25:01	35.61	20.04	144.48	2.38	1.76	825	470		
			15:25:02	35.61	20.04	144.20	1.27	0.76	825	1090		
			15:25:03	35.60	20.04	144.04	0.15	0.15	825	5620		
			15:25:04	35.59	20.04	144.00	0.02	0.02	825	44595		
			15:25:05	35.57	20.04	143.91	0.41	0.41	825	2012		
			15:25:06	35.57	20.04	143.91	0.43	0.01	825	73308		
			15:25:07	35.56	20.04	143.85	0.05	0.05	825	16434		
			15:25:08	35.56	20.04	143.93	0.02	0.02	825	46089		
			15:25:09	35.58	20.04	144.00	0.13	0.13	825	6455		
			15:25:10	35.56	20.04	143.57	0.11	0.11	825	7353		
			15:25:11	35.56	20.04	143.03	0.03	0.03	825	26358		
			15:25:12	35.57	20.04	142.26	0.02	0.02	825	47965		
			15:25:13	35.57	20.03	141.86	0.02	0.02	825	46875		

**TABLE D-33**

Profile PRO-27 on September 22, 2022 (1518-1532 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

84	Instantaneous Minimum Dilution in Profile
159	Minimum Average Dilution in Profile
251	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:25:14	35.60	20.03	141.56	0.02	0.02	825	46089		
			15:25:15	35.57	20.03	141.72	0.02	0.02	825	47414		
			15:25:16	35.55	20.03	142.11	0.02	0.02	825	45580		
			15:25:17	35.60	20.03	142.30	0.02	0.02	825	48246		
			15:25:18	35.56	20.03	142.86	0.19	0.19	825	4266		
			15:25:19	35.56	20.04	143.29	1.31	0.79	825	1040		
			15:25:20	35.53	20.04	143.66	1.72	1.17	825	707		
			15:25:21	35.58	20.04	143.59	1.71	1.16	825	713		
			15:25:22	35.51	20.04	143.57	1.57	1.03	825	800		
			15:25:23	35.53	20.04	143.68	1.85	1.28	825	646		
			15:25:24	35.62	20.04	143.51	1.66	1.11	825	743		
			15:25:25	35.56	20.04	143.53	1.56	1.02	825	807		
			15:25:26	35.55	20.04	143.91	1.96	1.38	825	597		
			15:25:27	35.56	20.04	144.54	2.22	1.61	825	511		
			15:25:28	35.54	20.04	144.50	2.91	2.23	825	370		
			15:25:29	35.55	20.04	144.54	2.56	1.91	825	431		
			15:25:30	35.57	20.04	144.60	3.18	2.48	825	333		
			15:25:31	35.55	20.04	144.64	3.99	3.20	825	258	329	Measured plume at 35 ft
			15:25:32	35.52	20.04	144.58	3.74	2.98	825	277		
			15:25:33	35.53	20.04	144.64	3.48	2.74	825	301		
			15:25:34	35.49	20.04	144.30	4.00	3.21	825	257		
			15:25:35	35.52	20.04	142.13	2.70	2.05	825	403		
			15:25:36	35.53	20.03	140.96	0.02	0.02	825	43651		
			15:25:37	35.53	20.02	140.32	0.02	0.02	825	49107		
			15:25:38	35.52	20.02	140.16	0.02	0.02	825	45082		
			15:25:39	35.53	20.02	140.94	0.02	0.02	825	45580		
			15:25:40	35.53	20.02	140.79	0.04	0.04	825	19550		
			15:25:41	35.53	20.02	140.18	0.03	0.03	825	23639		
			15:25:42	35.53	20.02	140.77	0.02	0.02	825	44118		
			15:25:43	35.58	20.02	140.56	0.85	0.39	825	2135		
			15:25:44	35.56	20.02	140.29	0.02	0.02	825	44118		
			15:25:45	35.58	20.02	140.18	0.02	0.02	825	46610		
			15:25:46	35.56	20.02	140.40	0.02	0.02	825	46089		
			15:25:47	35.56	20.02	140.34	0.02	0.02	825	50305		
			15:25:48	35.57	20.02	140.18	0.02	0.02	825	42308		
			15:25:49	35.55	20.02	140.58	0.02	0.02	825	43194		
			15:25:50	35.56	20.02	141.17	0.52	0.08	825	9809		
			15:25:51	35.53	20.03	141.17	1.67	1.12	825	739		
			15:25:52	35.53	20.03	140.31	0.30	0.30	825	2793		

**TABLE D-33**

Profile PRO-27 on September 22, 2022 (1518-1532 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

84	Instantaneous Minimum Dilution in Profile
159	Minimum Average Dilution in Profile
251	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:25:53	35.52	20.02	139.93	0.02	0.02	825	48246		
			15:25:54	35.52	20.02	140.02	0.02	0.02	825	43651		
			15:25:55	35.53	20.02	140.42	0.02	0.02	825	42092		
			15:25:56	35.53	20.02	141.11	1.35	0.83	825	995		
			15:25:57	35.52	20.03	141.72	3.91	3.13	825	264		
			15:25:58	35.52	20.03	141.72	1.57	1.03	825	801		
			15:25:59	35.56	20.03	141.66	0.11	0.11	825	7205		
			15:26:00	35.56	20.03	141.72	0.68	0.23	825	3604		
			15:26:01	35.56	20.03	141.73	1.32	0.81	825	1021		
			15:26:02	35.58	20.03	141.37	0.47	0.04	825	19714		
			15:26:03	35.57	20.02	140.89	0.12	0.12	825	7009		
			15:26:04	35.60	20.02	140.54	0.02	0.02	825	44595		
			15:26:05	35.51	20.02	141.13	0.02	0.02	825	44118		
			15:26:06	35.53	20.02	140.89	0.02	0.02	825	42969		
			15:26:07	35.53	20.02	140.57	0.02	0.02	825	46610		
			15:26:08	35.56	20.02	140.57	0.02	0.02	825	42746		
			15:26:09	35.52	20.02	140.80	0.02	0.02	825	43651		
			15:26:10	35.49	20.02	141.96	0.76	0.30	825	2740		
			15:26:11	35.54	20.03	143.07	4.22	3.41	825	242		
			15:26:12	35.51	20.03	143.86	5.53	4.58	825	180		
			15:26:13	35.53	20.04	144.69	6.63	5.57	825	148		
			15:26:14	35.53	20.04	145.47	9.26	7.93	825	104		
			15:26:15	35.52	20.05	146.03	11.09	9.57	825	86		
			15:26:16	35.51	20.05	146.34	11.01	9.50	825	87		
			15:26:17	35.54	20.05	146.19	8.28	7.05	825	117	160	Measured plume at 35 ft
			15:26:18	35.49	20.05	145.95	5.67	4.71	825	175		
			15:26:19	35.51	20.05	145.82	3.51	2.77	825	298		
			15:26:20	35.57	20.04	145.39	5.42	4.48	825	184		
			15:26:21	35.50	20.04	145.35	7.22	6.10	825	135		
			15:26:22	35.56	20.04	145.73	7.95	6.75	825	122		
			15:26:23	35.50	20.04	145.17	8.02	6.81	825	121		
			15:26:24	35.59	20.04	145.23	7.63	6.47	825	128		
			15:26:25	35.56	20.04	144.55	7.77	6.60	825	125		
			15:26:26	35.60	20.03	142.66	3.50	2.76	825	299		
			15:26:27	35.59	20.02	141.52	0.02	0.02	825	43194		
			15:26:28	35.57	20.02	141.68	0.02	0.02	825	46348		
			15:26:29	35.54	20.02	141.63	1.07	0.59	825	1410		
			15:26:30	35.61	20.02	142.06	4.49	3.65	825	226		
			15:26:31	35.56	20.03	142.96	5.47	4.53	825	182		

**TABLE D-33**

Profile PRO-27 on September 22, 2022 (1518-1532 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

84	Instantaneous Minimum Dilution in Profile
159	Minimum Average Dilution in Profile
251	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:26:32	35.55	20.03	144.11	6.33	5.30	825	156		
			15:26:33	35.55	20.04	144.72	8.26	7.03	825	117		
			15:26:34	35.55	20.04	144.94	8.82	7.54	825	109		
			15:26:35	35.53	20.04	145.29	8.60	7.34	825	112		
			15:26:36	35.52	20.04	145.56	9.01	7.70	825	107		
			15:26:37	35.56	20.04	145.59	9.03	7.72	825	107		
			15:26:38	35.54	20.04	145.37	8.08	6.87	825	120	159	Measured plume at 35 ft
			15:26:39	35.54	20.04	145.25	7.58	6.42	825	128		
			15:26:40	35.50	20.04	145.23	8.37	7.13	825	116		
			15:26:41	35.52	20.04	145.51	7.49	6.34	825	130		
			15:26:42	35.56	20.04	145.25	7.14	6.02	825	137		
			15:26:43	35.48	20.04	144.95	6.83	5.75	825	143		
			15:26:44	35.58	20.04	144.62	7.42	6.28	825	131		
			15:26:45	35.55	20.04	144.65	5.20	4.29	825	192		
			15:26:46	35.59	20.04	144.41	4.64	3.79	825	218		
			15:26:47	35.56	20.04	144.16	4.98	4.09	825	202		
			15:26:48	35.51	20.04	144.04	5.08	4.18	825	197		
			15:26:49	35.52	20.03	144.03	4.48	3.64	825	227		
			15:26:50	35.58	20.03	143.47	3.64	2.89	825	286		
			15:26:51	35.51	20.03	143.25	2.00	1.41	825	584		
			15:26:52	35.55	20.03	142.90	1.65	1.10	825	751		
			15:26:53	35.56	20.03	142.08	0.69	0.24	825	3429		
			15:26:54	35.50	20.02	141.17	0.02	0.02	825	47414		
			15:26:55	35.52	20.02	140.93	0.02	0.02	825	43194		
			15:26:56	35.49	20.02	141.08	0.02	0.02	825	44595		
			15:26:57	35.52	20.02	140.93	0.02	0.02	825	43651		
			15:26:58	35.51	20.02	140.97	0.02	0.02	825	46348		
			15:26:59	35.51	20.02	140.60	0.02	0.02	825	49107		
			15:27:00	35.51	20.01	140.32	0.02	0.02	825	45580		
			15:27:01	35.48	20.01	140.42	0.02	0.02	825	45082		
			15:27:02	35.51	20.02	142.46	2.32	1.71	825	483		
			15:27:03	35.49	20.03	143.55	4.12	3.32	825	248		
			15:27:04	35.51	20.03	143.90	5.64	4.69	825	176		
			15:27:05	35.46	20.03	143.98	6.49	5.45	825	151		
			15:27:06	35.48	20.03	144.14	6.46	5.42	825	152		
			15:27:07	35.48	20.04	144.20	6.57	5.52	825	149		
			15:27:08	35.49	20.04	144.43	6.56	5.51	825	150		
			15:27:09	35.51	20.04	144.50	6.02	5.02	825	164		
			15:27:10	35.47	20.04	144.56	6.39	5.35	825	154	172	Measured plume at 35 ft

**TABLE D-33**

Profile PRO-27 on September 22, 2022 (1518-1532 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

84	Instantaneous Minimum Dilution in Profile
159	Minimum Average Dilution in Profile
251	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:27:11	35.51	20.04	144.87	6.10	5.10	825	162		
			15:27:12	35.46	20.04	145.00	6.44	5.40	825	153		
			15:27:13	35.51	20.04	145.06	6.60	5.55	825	149		
			15:27:14	35.47	20.04	144.91	6.22	5.21	825	158		
			15:27:15	35.48	20.04	145.29	7.39	6.26	825	132		
			15:27:16	35.50	20.04	145.80	9.32	7.98	825	103		
			15:27:17	35.50	20.05	146.00	8.67	7.40	825	112		
			15:27:18	35.51	20.05	146.21	9.21	7.88	825	105		
			15:27:19	35.48	20.05	145.96	7.20	6.08	825	136		
			15:27:20	35.51	20.04	145.35	5.79	4.82	825	171		
			15:27:21	35.48	20.04	144.72	11.20	9.67	825	85		
			15:27:22	35.48	20.04	144.89	11.33	9.78	825	84		
			15:27:23	35.49	20.04	143.88	7.20	6.08	825	136		
			15:27:24	35.52	20.03	142.57	2.53	1.90	825	435		
			15:27:25	35.51	20.02	141.72	0.10	0.10	825	8176		
			15:27:26	35.54	20.02	142.23	1.56	1.02	825	810		
			15:27:27	35.52	20.03	142.98	5.43	4.50	825	183		
			15:27:28	35.51	20.03	143.91	7.01	5.92	825	139		
			15:27:29	35.51	20.03	144.27	7.67	6.50	825	127		
			15:27:30	35.51	20.03	144.14	5.82	4.84	825	170		
			15:27:31	35.50	20.03	144.03	5.27	4.35	825	190		
			15:27:32	35.51	20.03	144.06	5.97	4.98	825	166		
			15:27:33	35.48	20.03	144.37	6.67	5.60	825	147		
			15:27:34	35.49	20.04	144.56	6.31	5.29	825	156		
			15:27:35	35.49	20.04	144.60	6.65	5.59	825	148		
			15:27:36	35.42	20.04	144.58	7.17	6.06	825	136		
			15:27:37	35.45	20.04	144.56	7.38	6.24	825	132		
			15:27:38	35.49	20.04	144.58	7.54	6.39	825	129	172	Measured plume at 35 ft
			15:27:39	35.47	20.03	144.14	5.96	4.97	825	166		
			15:27:40	35.47	20.03	143.83	4.49	3.65	825	226		
			15:27:41	35.44	20.03	143.62	4.91	4.03	825	205		
			15:27:42	35.46	20.03	143.79	5.41	4.48	825	184		
			15:27:43	35.48	20.03	143.89	5.11	4.20	825	196		
			15:27:44	35.45	20.03	143.81	4.61	3.76	825	220		
			15:27:45	35.45	20.03	143.68	3.97	3.19	825	259		
			15:27:46	35.44	20.03	143.57	4.13	3.33	825	248		
			15:27:47	35.45	20.03	143.72	4.80	3.93	825	210		
			15:27:48	35.41	20.03	143.93	4.88	4.00	825	206		
			15:27:49	35.46	20.03	144.03	5.03	4.13	825	200		



**TABLE D-33**

Profile PRO-27 on September 22, 2022 (1518-1532 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

84	Instantaneous Minimum Dilution in Profile
159	Minimum Average Dilution in Profile
251	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:27:50	35.43	20.03	144.07	5.12	4.21	825	196		
			15:27:51	35.44	20.03	144.12	5.39	4.46	825	185		
			15:27:52	35.43	20.03	144.12	6.07	5.07	825	163		
			15:27:53	35.43	20.03	143.95	5.56	4.61	825	179		
			15:27:54	35.43	20.03	143.51	4.99	4.09	825	202		
			15:27:55	35.42	20.03	142.99	4.03	3.23	825	255		
			15:27:56	35.42	20.03	143.07	3.52	2.78	825	297		
			15:27:57	35.51	20.03	143.57	5.53	4.58	825	180		
			15:27:58	35.47	20.03	144.83	9.83	8.44	825	98		
			15:27:59	35.48	20.03	145.13	9.73	8.35	825	99		
			15:28:00	35.51	20.04	145.46	8.02	6.82	825	121		
			15:28:01	35.52	20.04	145.37	8.55	7.29	825	113		
			15:28:02	35.50	20.04	145.54	8.36	7.12	825	116		
			15:28:03	35.49	20.04	145.61	9.04	7.73	825	107		
			15:28:04	35.47	20.04	145.69	9.57	8.21	825	101		
			15:28:05	35.49	20.04	145.38	9.25	7.92	825	104		
			15:28:06	35.46	20.03	144.74	7.03	5.93	825	139		
			15:28:07	35.49	20.03	144.08	4.01	3.21	825	257		
			15:28:08	35.50	20.03	143.45	2.07	1.48	825	557		
			15:28:09	35.54	20.02	143.26	0.52	0.09	825	9665		
			15:28:10	35.59	20.02	142.88	0.04	0.04	825	19412		
			15:28:11	35.50	20.02	142.63	1.97	1.39	825	593		
			15:28:12	35.47	20.02	143.04	3.21	2.50	825	330		
			15:28:13	35.49	20.02	143.55	3.89	3.11	825	265		
			15:28:14	35.44	20.02	143.62	2.22	1.62	825	510		
			15:28:15	35.46	20.02	143.30	0.87	0.40	825	2043		
			15:28:16	35.44	20.02	143.14	1.38	0.86	825	956		
			15:28:17	35.44	20.02	142.90	2.27	1.66	825	497		
			15:28:18	35.45	20.02	142.55	0.82	0.36	825	2301		
			15:28:19	35.49	20.02	141.87	0.31	0.31	825	2659		
			15:28:20	35.46	20.01	141.63	0.36	0.36	825	2306		
			15:28:21	35.47	20.01	141.58	0.08	0.08	825	10135		
			15:28:22	35.49	20.01	141.54	0.10	0.10	825	8427		
			15:28:23	35.48	20.01	141.35	0.02	0.02	825	49699		
			15:28:24	35.48	20.01	141.50	0.02	0.02	825	47688		
			15:28:25	35.49	20.01	141.60	0.02	0.02	825	41878		
			15:28:26	35.48	20.01	141.72	0.02	0.02	825	42308		
			15:28:27	35.43	20.01	141.85	0.02	0.02	825	45082		
			15:28:28	35.48	20.01	142.02	0.50	0.07	825	11648		

**TABLE D-33**

Profile PRO-27 on September 22, 2022 (1518-1532 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

84	Instantaneous Minimum Dilution in Profile
159	Minimum Average Dilution in Profile
251	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:28:29	35.51	20.01	142.34	1.40	0.88	825	937		
			15:28:30	35.50	20.02	142.64	1.68	1.13	825	728		
			15:28:31	35.50	20.02	142.90	1.91	1.33	825	620		
			15:28:32	35.58	20.02	142.90	0.63	0.19	825	4435		
			15:28:33	35.55	20.02	142.46	0.34	0.34	825	2411		
			15:28:34	35.53	20.02	142.28	0.16	0.16	825	5261		
			15:28:35	35.68	20.02	142.00	0.02	0.02	825	45082		
			15:28:36	35.83	20.02	142.08	0.06	0.06	825	14175		
			15:28:37	35.81	20.02	142.38	0.86	0.40	825	2079		
			15:28:38	35.85	20.02	142.50	3.02	2.33	825	354		
			15:28:39	35.87	20.02	142.97	3.99	3.20	825	258		
			15:28:40	36.16	20.02	143.04	3.37	2.65	825	312		
			15:28:41	36.36	20.02	142.88	0.70	0.25	825	3285		
			15:28:42	38.87	20.02	143.03	1.56	1.02	825	809		
			15:28:43	40.62	20.02	142.34	1.14	0.64	825	1289		
			15:28:44	40.86	20.02	142.32	0.84	0.38	825	2195		
			15:28:45	41.11	20.02	142.32	1.07	0.58	825	1413		
			15:28:46	41.27	20.02	142.36	0.15	0.15	825	5399		
			15:28:47	41.19	20.02	142.41	0.41	0.41	825	2028		
			15:28:48	41.23	20.01	142.02	0.13	0.13	825	6400		
			15:28:49	41.14	20.01	142.00	0.14	0.14	825	5931		
			15:28:50	41.15	20.01	142.02	0.10	0.10	825	8275		
			15:28:51	40.95	20.02	142.38	0.14	0.14	825	5777		
			15:28:52	40.89	20.02	142.76	1.15	0.65	825	1271		
			15:28:53	40.88	20.02	142.86	2.38	1.76	825	469		
			15:28:54	40.82	20.02	143.09	2.53	1.90	825	435		
			15:28:55	40.83	20.02	143.40	1.84	1.27	825	648		
			15:28:56	40.86	20.02	143.11	0.02	0.02	825	43651		
			15:28:57	40.83	20.02	143.17	0.02	0.02	825	44595		
			15:28:58	40.85	20.02	143.59	2.60	1.96	825	422		
			15:28:59	40.81	20.02	143.33	4.56	3.71	825	222		
			15:29:00	40.88	20.02	142.80	2.17	1.57	825	527		
			15:29:01	40.84	20.02	142.33	0.02	0.02	825	44595		
			15:29:02	40.89	20.02	141.56	0.02	0.02	825	47143		
			15:29:03	40.90	20.01	141.10	0.02	0.02	825	45580		
			15:29:04	40.86	20.01	140.98	0.02	0.02	825	45580		
			15:29:05	40.84	20.01	140.81	0.02	0.02	825	43194		
			15:29:06	40.85	20.01	140.72	0.02	0.02	825	47414		
			15:29:07	40.83	20.01	140.81	0.02	0.02	825	47414		

**TABLE D-33**

Profile PRO-27 on September 22, 2022 (1518-1532 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

84	Instantaneous Minimum Dilution in Profile
159	Minimum Average Dilution in Profile
251	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:29:08	40.85	20.01	141.11	0.02	0.02	825	46610		
			15:29:09	40.83	20.01	141.14	0.02	0.02	825	42746		
			15:29:10	40.85	20.01	141.08	0.02	0.02	825	42746		
			15:29:11	40.88	20.01	141.14	0.02	0.02	825	46875		
			15:29:12	40.84	20.01	141.20	0.02	0.02	825	44118		
			15:29:13	40.84	20.01	141.41	0.02	0.02	825	47414		
			15:29:14	40.87	20.01	141.64	0.30	0.30	825	2722		
			15:29:15	40.78	20.01	142.18	1.84	1.27	825	648		
			15:29:16	40.80	20.01	142.43	1.68	1.13	825	732		
			15:29:17	40.86	20.02	142.59	2.19	1.58	825	521		
			15:29:18	40.84	20.02	142.63	1.83	1.26	825	653		
			15:29:19	40.83	20.02	142.54	1.26	0.75	825	1101		
			15:29:20	40.84	20.02	142.67	1.75	1.19	825	693		
			15:29:21	40.85	20.02	142.99	1.01	0.53	825	1556		
			15:29:22	40.83	20.02	143.16	1.09	0.60	825	1369		
			15:29:23	40.84	20.02	143.36	2.84	2.17	825	380		
			15:29:24	40.90	20.02	143.81	3.11	2.41	825	342		
			15:29:25	40.84	20.02	143.81	3.39	2.67	825	309		
			15:29:26	40.82	20.02	143.64	4.16	3.35	825	246		
			15:29:27	40.85	20.02	143.70	4.59	3.74	825	220		
			15:29:28	40.85	20.02	143.64	4.47	3.64	825	227		
			15:29:29	40.83	20.02	143.12	2.57	1.93	825	428		
			15:29:30	40.86	20.02	143.28	2.91	2.23	825	370		
			15:29:31	40.83	20.02	143.80	4.74	3.88	825	213		
			15:29:32	40.84	20.02	144.20	5.58	4.62	825	178	293	Measured plume at 40-41 ft
			15:29:33	40.83	20.02	144.16	5.99	4.99	825	165		
			15:29:34	40.87	20.02	144.10	6.16	5.15	825	160		
			15:29:35	40.89	20.02	144.00	5.87	4.89	825	169		
			15:29:36	40.90	20.02	143.91	5.13	4.23	825	195		
			15:29:37	40.82	20.02	143.81	4.92	4.04	825	204		
			15:29:38	40.83	20.02	143.37	4.45	3.61	825	228		
			15:29:39	40.84	20.02	143.05	2.33	1.71	825	481		
			15:29:40	40.86	20.02	142.90	2.54	1.90	825	435		
			15:29:41	40.83	20.02	143.33	2.94	2.26	825	366		
			15:29:42	40.85	20.02	144.39	3.53	2.79	825	296		
			15:29:43	40.87	20.03	144.82	5.94	4.95	825	167		
			15:29:44	40.83	20.03	144.33	5.33	4.40	825	187		
			15:29:45	40.85	20.02	143.57	2.28	1.67	825	494		
			15:29:46	40.86	20.02	143.49	2.33	1.71	825	483		

**TABLE D-33**

Profile PRO-27 on September 22, 2022 (1518-1532 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

84	Instantaneous Minimum Dilution in Profile
159	Minimum Average Dilution in Profile
251	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:29:47	40.90	20.02	143.74	3.01	2.32	825	355		
			15:29:48	40.85	20.02	144.22	3.70	2.94	825	281		
			15:29:49	40.85	20.02	143.84	4.66	3.80	825	217		
			15:29:50	40.83	20.02	143.33	2.76	2.10	825	393		
			15:29:51	40.85	20.02	142.73	0.70	0.25	825	3248		
			15:29:52	40.91	20.01	142.78	0.09	0.09	825	9086		
			15:29:53	40.83	20.02	143.21	1.84	1.27	825	648		
			15:29:54	40.86	20.02	143.16	2.38	1.76	825	469		
			15:29:55	40.87	20.01	142.04	0.41	0.41	825	2017		
			15:29:56	40.89	20.01	141.48	0.02	0.02	825	47965		
			15:29:57	40.85	20.01	141.25	0.02	0.02	825	46610		
			15:29:58	40.89	20.01	141.18	0.02	0.02	825	49699		
			15:29:59	40.89	20.01	141.62	0.02	0.02	825	43651		
			15:30:00	40.85	20.01	142.06	0.02	0.02	825	44595		
			15:30:01	40.87	20.01	142.67	0.33	0.33	825	2480		
			15:30:02	40.83	20.02	143.01	1.33	0.81	825	1016		
			15:30:03	40.86	20.02	142.95	2.10	1.51	825	548		
			15:30:04	40.82	20.02	142.61	1.65	1.11	825	746		
			15:30:05	40.83	20.01	142.48	0.99	0.51	825	1630		
			15:30:06	40.86	20.01	142.52	1.06	0.57	825	1441		
			15:30:07	40.83	20.01	142.53	1.46	0.93	825	889		
			15:30:08	40.90	20.02	142.40	1.24	0.73	825	1125		
			15:30:09	40.92	20.01	142.30	1.15	0.65	825	1265		
			15:30:10	40.91	20.01	142.47	0.98	0.50	825	1658		
			15:30:11	40.89	20.01	142.54	0.99	0.51	825	1630		
			15:30:12	40.96	20.01	142.34	0.11	0.11	825	7419		
			15:30:13	40.84	20.01	142.28	0.08	0.08	825	10135		
			15:30:14	40.86	20.01	142.38	0.22	0.22	825	3781		
			15:30:15	40.80	20.01	142.11	2.34	1.72	825	480		
			15:30:16	40.87	20.01	141.96	3.90	3.12	825	264		
			15:30:17	40.86	20.01	141.94	2.30	1.69	825	488		
			15:30:18	40.84	20.01	141.94	0.43	0.01	825	94374		
			15:30:19	40.86	20.01	142.00	0.02	0.02	825	46348		
			15:30:20	40.83	20.01	142.13	0.02	0.02	825	34091		
			15:30:21	40.87	20.01	142.08	0.06	0.06	825	14525		
			15:30:22	40.84	20.01	142.30	0.36	0.36	825	2310		
			15:30:23	40.88	20.01	142.40	0.85	0.38	825	2146		
			15:30:24	40.87	20.01	142.40	0.71	0.26	825	3201		
			15:30:25	40.84	20.01	142.43	0.99	0.51	825	1617		

**TABLE D-33**

Profile PRO-27 on September 22, 2022 (1518-1532 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

84	Instantaneous Minimum Dilution in Profile
159	Minimum Average Dilution in Profile
251	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:30:26	40.92	20.02	142.36	0.83	0.37	825	2255		
			15:30:27	40.88	20.01	142.32	0.96	0.48	825	1706		
			15:30:28	40.87	20.01	142.28	0.63	0.18	825	4511		
			15:30:29	40.90	20.01	142.32	0.33	0.33	825	2481		
			15:30:30	40.86	20.01	142.42	0.72	0.26	825	3135		
			15:30:31	40.84	20.01	142.36	0.62	0.18	825	4695		
			15:30:32	40.91	20.01	142.41	0.92	0.44	825	1859		
			15:30:33	40.86	20.01	142.54	1.63	1.08	825	761		
			15:30:34	40.88	20.01	142.49	1.27	0.76	825	1084		
			15:30:35	40.92	20.01	142.54	1.39	0.87	825	947		
			15:30:36	40.90	20.02	142.71	1.16	0.67	825	1239		
			15:30:37	40.92	20.02	142.80	1.60	1.06	825	782		
			15:30:38	40.84	20.02	143.05	2.51	1.88	825	440		
			15:30:39	40.88	20.02	143.00	3.31	2.59	825	318		
			15:30:40	40.83	20.02	142.82	3.49	2.75	825	300		
			15:30:41	40.89	20.02	142.69	2.50	1.86	825	443		
			15:30:42	40.88	20.02	142.88	2.53	1.89	825	436		
			15:30:43	40.93	20.02	142.99	3.05	2.36	825	349		
			15:30:44	40.88	20.02	143.01	3.17	2.46	825	335		
			15:30:45	40.91	20.02	143.16	2.69	2.04	825	405		
			15:30:46	40.92	20.02	143.27	3.60	2.85	825	290		
			15:30:47	40.90	20.02	143.14	3.86	3.08	825	268		
			15:30:48	40.87	20.02	143.12	2.22	1.61	825	513		
			15:30:49	40.94	20.02	143.21	2.01	1.42	825	581		
			15:30:50	40.97	20.02	143.24	2.69	2.03	825	406		
			15:30:51	40.88	20.02	143.21	2.54	1.90	825	434		
			15:30:52	40.90	20.02	143.18	2.73	2.07	825	399		
			15:30:53	40.92	20.02	143.29	3.70	2.94	825	281	272	Measured plume at 40-41 ft
			15:30:54	40.92	20.02	143.55	5.04	4.14	825	199		
			15:30:55	40.88	20.02	143.59	5.72	4.76	825	173		
			15:30:56	40.90	20.02	143.53	5.90	4.92	825	168		
			15:30:57	40.91	20.02	143.40	5.50	4.56	825	181		
			15:30:58	40.89	20.02	143.36	5.07	4.17	825	198		
			15:30:59	40.88	20.02	143.21	4.66	3.80	825	217		
			15:31:00	40.87	20.02	143.00	4.39	3.56	825	232		
			15:31:01	40.88	20.02	143.01	4.59	3.74	825	220		
			15:31:02	40.86	20.02	143.09	4.91	4.03	825	205		
			15:31:03	40.83	20.02	143.03	4.75	3.89	825	212		
			15:31:04	40.89	20.02	142.82	5.04	4.15	825	199		

**TABLE D-33**

Profile PRO-27 on September 22, 2022 (1518-1532 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

84	Instantaneous Minimum Dilution in Profile
159	Minimum Average Dilution in Profile
251	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:31:05	40.90	20.02	142.88	5.32	4.40	825	188		
			15:31:06	40.88	20.02	142.56	5.68	4.72	825	175		
			15:31:07	40.92	20.02	142.63	5.75	4.78	825	172		
			15:31:08	40.90	20.02	142.84	4.89	4.01	825	206		
			15:31:09	40.86	20.02	142.76	5.25	4.34	825	190		
			15:31:10	40.90	20.02	142.73	5.31	4.39	825	188		
			15:31:11	40.91	20.02	142.82	5.63	4.67	825	177		
			15:31:12	40.88	20.02	142.90	6.02	5.02	825	164		
			15:31:13	40.92	20.02	142.69	5.50	4.55	825	181		
			15:31:14	40.89	20.02	142.65	4.63	3.78	825	218		
			15:31:15	40.92	20.02	142.69	4.70	3.84	825	215		
			15:31:16	40.92	20.02	142.61	4.29	3.47	825	238		
			15:31:17	40.88	20.02	142.67	4.13	3.33	825	248		
			15:31:18	40.87	20.02	142.67	4.01	3.22	825	256		
			15:31:19	40.88	20.02	142.67	3.92	3.13	825	263		
			15:31:20	40.91	20.02	142.73	4.52	3.67	825	224		
			15:31:21	40.91	20.02	142.73	5.06	4.16	825	198		
			15:31:22	40.96	20.02	142.58	4.52	3.67	825	225		
			15:31:23	40.91	20.02	142.47	3.81	3.04	825	271		
			15:31:24	40.92	20.02	142.40	3.74	2.98	825	277		
			15:31:25	40.89	20.02	142.42	3.70	2.94	825	280		
			15:31:26	40.90	20.02	142.50	4.16	3.36	825	246		
			15:31:27	40.90	20.02	142.54	4.37	3.54	825	233		
			15:31:28	40.90	20.02	142.56	4.31	3.48	825	237		
			15:31:29	40.91	20.02	142.53	4.31	3.49	825	236		
			15:31:30	40.95	20.02	142.56	4.05	3.25	825	254		
			15:31:31	40.93	20.02	142.61	4.43	3.60	825	229		
			15:31:32	40.92	20.02	142.48	5.66	4.70	825	176		
			15:31:33	40.91	20.01	142.23	4.39	3.56	825	232		
			15:31:34	40.92	20.01	142.26	3.76	2.99	825	276		
			15:31:35	40.91	20.01	142.28	3.47	2.73	825	302		
			15:31:36	40.91	20.01	142.13	3.60	2.86	825	289		
			15:31:37	40.92	20.01	142.06	3.54	2.80	825	295		
			15:31:38	40.96	20.01	142.00	3.40	2.67	825	309		
			15:31:39	40.97	20.01	141.76	3.48	2.74	825	301		
			15:31:40	40.95	20.01	141.83	2.96	2.28	825	362		
			15:31:41	40.96	20.01	141.89	2.36	1.74	825	475		
			15:31:42	40.94	20.01	141.75	1.98	1.39	825	592		
			15:31:43	40.98	20.01	141.80	1.52	0.99	825	837		

**TABLE D-33**

Profile PRO-27 on September 22, 2022 (1518-1532 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

84	Instantaneous Minimum Dilution in Profile
159	Minimum Average Dilution in Profile
251	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:31:44	40.89	20.01	141.86	3.25	2.54	825	325		
			15:31:45	40.92	20.01	141.96	3.30	2.58	825	320		
			15:31:46	40.95	20.01	142.00	4.21	3.40	825	243	306	Measured plume at 40-41 ft
			15:31:47	40.98	20.01	141.89	4.42	3.59	825	230		
			15:31:48	40.95	20.01	141.86	4.17	3.37	825	245		
			15:31:49	40.96	20.01	141.63	3.21	2.50	825	330		
			15:31:50	40.93	20.01	141.39	2.46	1.83	825	451		
			15:31:51	40.92	20.01	141.27	1.85	1.28	825	645		
			15:31:52	40.97	20.00	141.09	2.11	1.51	825	545		
			15:31:53	40.93	20.00	140.91	1.83	1.26	825	655		
			15:31:54	40.92	20.00	141.01	2.15	1.55	825	533		
			15:31:55	40.89	20.01	141.06	1.52	0.98	825	839		
			15:31:56	40.91	20.01	141.09	1.24	0.73	825	1129		
			15:31:57	40.91	20.01	141.14	0.96	0.49	825	1697		
			15:31:58	40.91	20.01	141.27	1.33	0.81	825	1013		
			15:31:59	40.92	20.01	141.46	0.57	0.13	825	6309		
			15:32:00	40.90	20.01	141.54	0.06	0.06	825	14031		
			15:32:01	40.90	20.01	141.56	0.39	0.39	825	2104		
			15:32:02	40.93	20.01	142.45	2.56	1.92	825	431		
			15:32:03	40.81	20.02	143.00	4.46	3.62	825	228		
			15:32:04	40.84	20.02	142.95	3.91	3.13	825	264		
			15:32:05	40.83	20.02	142.99	2.81	2.15	825	384		
			15:32:06	40.81	20.02	142.95	3.10	2.40	825	343		
			15:32:07	40.83	20.02	143.01	3.05	2.36	825	350		
			15:32:08	40.84	20.02	142.80	2.91	2.23	825	369		
			15:32:09	40.84	20.01	142.76	2.15	1.55	825	531		
			15:32:10	40.84	20.01	142.82	2.16	1.56	825	528		
			15:32:11	40.81	20.01	142.84	2.17	1.57	825	525		
			15:32:12	40.83	20.01	142.90	2.25	1.64	825	504		
			15:32:13	40.84	20.01	142.99	2.68	2.02	825	408	367	Measured plume at 40-41 ft
			15:32:14	40.82	20.01	142.95	2.80	2.13	825	387		
			15:32:15	40.81	20.01	142.90	2.53	1.89	825	437		
			15:32:16	40.80	20.01	142.76	2.36	1.73	825	476		
			15:32:17	40.77	20.01	142.49	1.89	1.32	825	625		
			15:32:18	40.78	20.01	142.38	1.94	1.37	825	604		
			15:32:19	40.82	20.01	142.34	2.00	1.42	825	582		
			15:32:20	40.78	20.01	142.34	2.42	1.79	825	461		
			15:32:21	40.79	20.01	142.36	2.31	1.69	825	488		
			15:32:22	40.80	20.01	142.38	2.29	1.68	825	492		

**TABLE D-33**

Profile PRO-27 on September 22, 2022 (1518-1532 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

84	Instantaneous Minimum Dilution in Profile
159	Minimum Average Dilution in Profile
251	Plume Average Dilution Detected

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:32:23	40.76	20.01	142.66	4.01	3.22	825	256		
			15:32:24	40.78	20.01	142.73	2.46	1.83	825	451		
			15:32:25	40.79	20.01	143.03	3.01	2.32	825	355		
			15:32:26	40.82	20.01	143.25	4.95	4.06	825	203		
			15:32:27	40.77	20.01	143.26	3.66	2.91	825	284		
			15:32:28	40.79	20.01	143.16	3.71	2.95	825	279		
			15:32:29	40.78	20.01	143.01	3.23	2.52	825	328		
			15:32:30	40.80	20.01	142.95	2.38	1.75	825	471		
			15:32:31	40.80	20.01	142.99	3.74	2.97	825	277		
			15:32:32	40.82	20.01	143.00	2.99	2.31	825	358		
			15:32:33	40.81	20.01	143.31	3.62	2.87	825	287		
			15:32:34	40.81	20.01	143.68	5.13	4.22	825	195		
			15:32:35	40.77	20.02	144.03	6.05	5.05	825	163		
			15:32:36	40.82	20.02	144.16	6.60	5.55	825	149		
			15:32:37	40.75	20.02	144.22	7.63	6.47	825	128		
			15:32:38	40.76	20.02	144.08	6.79	5.71	825	144		
			15:32:39	40.78	20.02	143.55	4.89	4.00	825	206		
			15:32:40	40.81	20.01	142.78	0.89	0.42	825	1962		
			15:32:41	40.79	20.01	142.44	0.03	0.03	825	28448		
			15:32:42	40.83	20.01	142.42	0.02	0.02	825	40441		
			15:32:43	40.81	20.01	142.40	0.06	0.06	825	14373		
			15:32:44	40.82	20.01	142.37	0.63	0.19	825	4456		
			15:32:45	40.79	20.01	142.52	1.52	0.98	825	841		
			15:32:46	40.80	20.01	142.80	2.33	1.72	825	481		
			15:32:47	40.80	20.01	142.95	2.18	1.57	825	524		
			15:32:48	40.89	20.01	143.14	2.92	2.24	825	368	349	Measured plume at 40-41 ft
			15:32:49	40.84	20.01	143.47	3.52	2.78	825	297		
			15:32:50	41.02	20.01	143.74	4.48	3.64	825	226		
			15:32:51	41.13	20.01	143.79	5.02	4.12	825	200		



**TABLE D-34**

Profile PRO-28 on September 22, 2022 (1541-1547 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
PRO-28 (South Mixing Zone Boundary - 242 ft from Diffuser) located East of Diffuser Ports	33-34 ft	0.28 m/sec 173 deg. (mag.) Flood Tide	15:41:58	2.40	20.20	142.11	0.02	0.02	820	46067		No plume detected near surface
			15:41:59	2.36	20.21	141.63	0.02	0.02	820	45304		
			15:42:00	2.44	20.22	141.70	0.02	0.02	820	44809		
			15:42:01	2.40	20.22	141.53	0.02	0.02	820	42268		
			15:42:02	2.37	20.22	141.46	0.02	0.02	820	43386		
			15:42:03	2.36	20.23	141.48	0.02	0.02	820	45304		
			15:42:04	2.36	20.23	141.46	0.02	0.02	820	45304		
			15:42:05	2.39	20.23	141.44	0.02	0.02	820	46591		
			15:42:06	2.39	20.23	141.39	0.02	0.02	820	44324		
			15:42:07	2.35	20.24	141.33	0.02	0.02	820	46591		
			15:42:08	2.37	20.23	141.27	0.02	0.02	820	47953		
			15:42:09	2.37	20.23	141.29	0.02	0.02	820	44809		
			15:42:10	2.39	20.23	141.33	0.02	0.02	820	45304		
			15:42:11	2.37	20.22	141.31	0.02	0.02	820	42932		
			15:42:12	2.36	20.22	141.35	0.02	0.02	820	42932		
			15:42:13	2.39	20.22	141.37	0.02	0.02	820	44809		
			15:42:14	2.41	20.21	141.44	0.02	0.02	820	43850		
			15:42:15	2.39	20.21	141.57	0.02	0.02	820	44324		
			15:42:16	2.42	20.21	141.63	0.02	0.02	820	47953		
			15:42:17	2.40	20.21	141.60	0.02	0.02	820	45304		
			15:42:18	2.43	20.21	141.60	0.02	0.02	820	46067		
			15:42:19	2.38	20.21	141.56	0.02	0.02	820	43386		
			15:42:20	2.41	20.21	141.58	0.02	0.02	820	45810		
			15:42:21	2.37	20.21	141.58	0.02	0.02	820	46328		
			15:42:22	2.38	20.21	141.57	0.02	0.02	820	47399		
			15:42:23	2.40	20.21	141.63	0.02	0.02	820	42487		
			15:42:24	2.38	20.22	141.58	0.02	0.02	820	48235		
			15:42:25	2.48	20.22	141.73	0.02	0.02	820	44809		
			15:42:26	2.86	20.22	141.71	0.02	0.02	820	44809		
			15:42:27	5.25	20.23	141.00	0.68	0.23	820	3588		
			15:42:28	7.44	20.24	141.07	0.02	0.02	820	49398		
			15:42:29	7.83	20.25	140.84	0.02	0.02	820	39806		
			15:42:30	7.90	20.25	140.89	0.02	0.02	820	45304		
			15:42:31	7.90	20.26	140.91	0.02	0.02	820	41414	No plume detected at 8 ft	
			15:42:32	7.88	20.25	140.89	0.02	0.02	820	42932		
			15:42:33	7.85	20.25	140.85	0.02	0.02	820	44809		
15:42:34	7.84	20.25	140.87	0.02	0.02	820	41624					
15:42:35	7.84	20.25	140.89	0.02	0.02	820	41206					
15:42:36	7.83	20.25	141.00	0.02	0.02	820	44809					

**TABLE D-34**

Profile PRO-28 on September 22, 2022 (1541-1547 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:42:37	7.85	20.26	141.02	0.02	0.02	820	41624		
			15:42:38	7.85	20.26	141.06	0.02	0.02	820	42932		
			15:42:39	7.86	20.26	141.20	0.02	0.02	820	42487		
			15:42:40	7.86	20.26	141.24	0.02	0.02	820	46328		
			15:42:41	7.86	20.24	141.37	0.02	0.02	820	47399		
			15:42:42	7.86	20.21	141.41	0.02	0.02	820	43850		
			15:42:43	7.84	20.21	141.37	0.02	0.02	820	42051		
			15:42:44	7.90	20.21	141.27	0.02	0.02	820	48235		
			15:42:45	7.84	20.21	141.39	0.02	0.02	820	42932		
			15:42:46	7.86	20.20	141.50	0.02	0.02	820	43386		
			15:42:47	7.86	20.19	141.75	0.02	0.02	820	42487		
			15:42:48	7.89	20.18	141.82	0.02	0.02	820	47126		
			15:42:49	7.84	20.18	141.83	0.02	0.02	820	42051		
			15:42:50	7.85	20.17	141.89	0.02	0.02	820	45810		
			15:42:51	7.82	20.18	141.82	0.02	0.02	820	43850		
			15:42:52	7.86	20.18	141.63	0.02	0.02	820	46591		
			15:42:53	7.83	20.20	141.41	0.02	0.02	820	43850		
			15:42:54	7.86	20.21	141.44	0.02	0.02	820	43850		
			15:42:55	7.86	20.21	141.44	0.02	0.02	820	41837		
			15:42:56	7.94	20.20	141.65	0.02	0.02	820	43386		
			15:42:57	8.03	20.19	141.90	0.02	0.02	820	43386		
			15:42:58	8.32	20.16	142.02	0.02	0.02	820	41000		
			15:42:59	8.61	20.17	141.77	0.02	0.02	820	47399		
			15:43:00	11.58	20.19	141.44	0.02	0.02	820	44324		
			15:43:01	13.36	20.18	141.69	0.02	0.02	820	43386		
			15:43:02	13.68	20.18	141.73	0.02	0.02	820	44324		No plume detected at 13-14 ft
			15:43:03	13.74	20.17	141.75	0.02	0.02	820	40196		
			15:43:04	13.81	20.18	141.65	0.02	0.02	820	40196		
			15:43:05	13.74	20.18	141.65	0.02	0.02	820	41414		
			15:43:06	13.70	20.18	141.67	0.02	0.02	820	42051		
			15:43:07	13.71	20.19	141.69	0.02	0.02	820	41837		
			15:43:08	13.69	20.19	141.73	0.02	0.02	820	45304		
			15:43:09	13.75	20.18	141.69	0.02	0.02	820	41837		
			15:43:10	13.67	20.18	141.67	0.02	0.02	820	42932		
			15:43:11	13.72	20.18	141.65	0.02	0.02	820	45810		
			15:43:12	13.72	20.18	141.77	0.02	0.02	820	45556		
			15:43:13	13.70	20.17	141.78	0.02	0.02	820	44324		
			15:43:14	13.72	20.16	141.78	0.02	0.02	820	45304		
			15:43:15	13.70	20.16	141.87	0.02	0.02	820	44809		

**TABLE D-34**

Profile PRO-28 on September 22, 2022 (1541-1547 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:43:16	13.72	20.15	141.96	0.02	0.02	820	45810		
			15:43:17	13.73	20.15	141.92	0.02	0.02	820	42051		
			15:43:18	13.79	20.15	142.00	0.02	0.02	820	41414		
			15:43:19	13.74	20.15	141.96	0.02	0.02	820	44809		
			15:43:20	13.75	20.15	141.96	0.02	0.02	820	41206		
			15:43:21	13.78	20.15	141.94	0.02	0.02	820	48810		
			15:43:22	13.71	20.15	141.96	0.02	0.02	820	41837		
			15:43:23	13.73	20.15	141.89	0.02	0.02	820	40594		
			15:43:24	13.80	20.15	141.83	0.02	0.02	820	47126		
			15:43:25	13.76	20.16	141.80	0.02	0.02	820	43850		
			15:43:26	13.72	20.16	141.84	0.02	0.02	820	44324		
			15:43:27	13.77	20.16	141.72	0.02	0.02	820	44809		
			15:43:28	13.75	20.18	141.67	0.02	0.02	820	48810		
			15:43:29	14.39	20.18	141.80	0.02	0.02	820	47126		
			15:43:30	17.22	20.17	142.03	0.02	0.02	820	46328		
			15:43:31	18.54	20.13	143.16	0.02	0.02	820	45304		
			15:43:32	19.07	20.10	143.13	0.02	0.02	820	46328		
			15:43:33	19.18	20.09	143.26	0.02	0.02	820	47953		No plume detected at 19 ft
			15:43:34	19.15	20.08	143.26	0.02	0.02	820	48810		
			15:43:35	19.20	20.07	143.38	0.02	0.02	820	46328		
			15:43:36	19.14	20.07	143.36	0.02	0.02	820	46328		
			15:43:37	19.14	20.07	143.32	0.02	0.02	820	43386		
			15:43:38	19.15	20.08	143.36	0.02	0.02	820	46328		
			15:43:39	19.15	20.09	143.28	0.02	0.02	820	40594		
			15:43:40	19.16	20.08	143.32	0.02	0.02	820	43386		
			15:43:41	19.16	20.07	143.36	0.02	0.02	820	43386		
			15:43:42	19.13	20.07	143.45	0.02	0.02	820	47126		
			15:43:43	19.16	20.07	143.43	0.02	0.02	820	42932		
			15:43:44	19.16	20.07	143.38	0.02	0.02	820	45810		
			15:43:45	19.18	20.07	143.38	0.02	0.02	820	44324		
			15:43:46	19.18	20.07	143.38	0.02	0.02	820	43850		
			15:43:47	19.14	20.08	143.31	0.02	0.02	820	46328		
			15:43:48	19.23	20.08	143.23	0.02	0.02	820	48810		
			15:43:49	19.18	20.09	143.18	0.02	0.02	820	47674		
			15:43:50	19.14	20.09	143.09	0.02	0.02	820	47953		
			15:43:51	19.16	20.10	142.97	0.02	0.02	820	49398		
			15:43:52	19.15	20.10	142.82	0.02	0.02	820	45556		
			15:43:53	19.18	20.12	142.66	0.02	0.02	820	45810		
			15:43:54	19.24	20.14	142.43	0.02	0.02	820	43386		

**TABLE D-34**

Profile PRO-28 on September 22, 2022 (1541-1547 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:43:55	19.18	20.16	142.13	0.02	0.02	820	46067		
			15:43:56	19.21	20.17	142.11	0.02	0.02	820	48235		
			15:43:57	19.23	20.17	142.00	0.02	0.02	820	40594		
			15:43:58	19.22	20.18	142.19	0.02	0.02	820	45304		
			15:43:59	19.26	20.17	142.30	0.02	0.02	820	46591		
			15:44:00	19.45	20.17	142.36	0.02	0.02	820	45810		
			15:44:01	19.88	20.17	142.47	0.02	0.02	820	47953		
			15:44:02	22.06	20.17	142.52	0.02	0.02	820	42268		
			15:44:03	24.24	20.11	143.57	0.02	0.02	820	45304		
			15:44:04	24.78	20.07	143.53	0.02	0.02	820	44809		
			15:44:05	24.95	20.07	143.57	0.02	0.02	820	45304		
			15:44:06	24.90	20.07	143.51	0.02	0.02	820	44324		No plume detected at 24-25 ft
			15:44:07	24.94	20.06	143.49	0.02	0.02	820	47953		
			15:44:08	24.91	20.06	143.55	0.02	0.02	820	42487		
			15:44:09	24.88	20.06	143.51	0.02	0.02	820	45810		
			15:44:10	24.92	20.06	143.47	0.02	0.02	820	45304		
			15:44:11	24.89	20.06	143.49	0.02	0.02	820	45810		
			15:44:12	24.88	20.06	143.53	0.02	0.02	820	47399		
			15:44:13	24.93	20.04	143.47	0.02	0.02	820	43850		
			15:44:14	24.93	20.04	143.45	0.02	0.02	820	46328		
			15:44:15	24.88	20.05	143.45	0.02	0.02	820	42051		
			15:44:16	24.92	20.05	143.43	0.02	0.02	820	44809		
			15:44:17	24.87	20.06	143.45	0.02	0.02	820	42932		
			15:44:18	24.89	20.05	143.43	0.02	0.02	820	45810		
			15:44:19	24.90	20.04	143.45	0.02	0.02	820	46591		
			15:44:20	24.95	20.04	143.45	0.02	0.02	820	41414		
			15:44:21	24.92	20.03	143.37	0.02	0.02	820	46857		
			15:44:22	24.92	20.03	143.28	0.02	0.02	820	47674		
			15:44:23	24.95	20.02	143.18	0.02	0.02	820	43850		
			15:44:24	24.94	20.02	143.09	0.02	0.02	820	46328		
			15:44:25	24.90	20.02	143.05	0.02	0.02	820	47674		
			15:44:26	24.89	20.02	143.09	0.02	0.02	820	46328		
			15:44:27	24.93	20.02	143.01	0.02	0.02	820	48235		
			15:44:28	24.95	20.01	143.01	0.02	0.02	820	47399		
			15:44:29	24.88	20.01	143.02	0.02	0.02	820	47674		
			15:44:30	24.86	20.02	143.09	0.02	0.02	820	43386		
			15:44:31	24.91	20.02	143.14	0.02	0.02	820	46591		
			15:44:32	24.90	20.02	143.20	0.02	0.02	820	43850		
			15:44:33	24.86	20.02	143.20	0.02	0.02	820	45810		

**TABLE D-34**

Profile PRO-28 on September 22, 2022 (1541-1547 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:44:34	24.83	20.02	143.21	0.02	0.02	820	45810		
			15:44:35	24.74	20.02	143.26	0.02	0.02	820	51250		
			15:44:36	24.63	20.02	143.22	0.02	0.02	820	48235		
			15:44:37	24.62	20.02	143.18	0.02	0.02	820	44324		
			15:44:38	24.61	20.02	143.23	0.02	0.02	820	39806		
			15:44:39	24.59	20.02	143.21	0.02	0.02	820	43850		
			15:44:40	24.60	20.02	143.14	0.02	0.02	820	47953		
			15:44:41	24.55	20.02	143.18	0.02	0.02	820	43386		
			15:44:42	24.60	20.02	143.20	0.02	0.02	820	40594		
			15:44:43	24.59	20.02	143.18	0.02	0.02	820	46328		
			15:44:44	24.56	20.02	143.14	0.02	0.02	820	48810		
			15:44:45	24.60	20.02	143.14	0.02	0.02	820	45810		
			15:44:46	24.63	20.02	143.16	0.02	0.02	820	45810		
			15:44:47	24.55	20.02	143.07	0.02	0.02	820	46328		
			15:44:48	24.57	20.02	143.12	0.02	0.02	820	43386		
			15:44:49	24.58	20.02	143.14	0.02	0.02	820	45810		
			15:44:50	24.61	20.04	143.25	0.02	0.02	820	44809		
			15:44:51	24.56	20.04	143.14	0.02	0.02	820	42708		
			15:44:52	24.56	20.02	143.05	0.02	0.02	820	49398		
			15:44:53	24.53	20.02	143.07	0.02	0.02	820	42932		
			15:44:54	24.54	20.03	143.14	0.02	0.02	820	45304		
			15:44:55	24.54	20.03	143.16	0.02	0.02	820	46857		
			15:44:56	24.57	20.03	143.16	0.02	0.02	820	42268		
			15:44:57	24.66	20.03	143.22	0.02	0.02	820	43386		
			15:44:58	24.85	20.03	143.18	0.02	0.02	820	47674		
			15:44:59	24.89	20.02	143.07	0.02	0.02	820	44324		
			15:45:00	24.88	20.02	143.03	0.02	0.02	820	43386		
			15:45:01	25.02	20.01	143.05	0.02	0.02	820	42487		
			15:45:02	25.20	20.02	143.16	0.02	0.02	820	42051		
			15:45:03	25.63	20.02	143.20	0.02	0.02	820	46328		
			15:45:04	26.28	20.03	143.21	0.02	0.02	820	42487		
			15:45:05	26.81	20.03	143.19	0.02	0.02	820	41837		
			15:45:06	27.30	20.03	143.36	0.02	0.02	820	43850		
			15:45:07	27.72	20.04	143.38	0.02	0.02	820	45304		
			15:45:08	28.19	20.04	143.36	0.02	0.02	820	47674		
			15:45:09	28.54	20.04	143.40	0.02	0.02	820	44324		No plume detected at 28-30 ft
			15:45:10	28.84	20.04	143.40	0.02	0.02	820	43850		
			15:45:11	29.07	20.04	143.43	0.02	0.02	820	45810		
			15:45:12	29.43	20.05	143.40	0.02	0.02	820	46857		

**TABLE D-34**

Profile PRO-28 on September 22, 2022 (1541-1547 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:45:13	29.71	20.05	143.36	0.02	0.02	820	39806		
			15:45:14	29.97	20.05	143.38	0.02	0.02	820	47953		
			15:45:15	30.22	20.06	143.40	0.02	0.02	820	45304		
			15:45:16	30.40	20.05	143.32	0.02	0.02	820	44324		
			15:45:17	30.46	20.05	143.38	0.02	0.02	820	46328		
			15:45:18	30.50	20.05	143.32	0.02	0.02	820	48235		
			15:45:19	30.42	20.04	143.38	0.02	0.02	820	44324		
			15:45:20	30.35	20.04	143.34	0.02	0.02	820	45304		
			15:45:21	30.41	20.04	143.28	0.02	0.02	820	47674		
			15:45:22	30.45	20.04	143.26	0.02	0.02	820	51899		
			15:45:23	30.46	20.04	143.32	0.02	0.02	820	46591		
			15:45:24	30.44	20.04	143.38	0.02	0.02	820	44324		
			15:45:25	30.40	20.04	143.28	0.02	0.02	820	43850		
			15:45:26	30.44	20.03	143.20	0.02	0.02	820	46067		
			15:45:27	30.38	20.03	143.23	0.02	0.02	820	44324		
			15:45:28	30.37	20.03	143.18	0.02	0.02	820	46328		
			15:45:29	30.33	20.03	143.14	0.02	0.02	820	44809		
			15:45:30	30.30	20.03	143.09	0.02	0.02	820	50000		
			15:45:31	30.17	20.02	143.06	0.02	0.02	820	45304		
			15:45:32	30.13	20.03	143.14	0.02	0.02	820	46591		
			15:45:33	30.07	20.03	143.12	0.02	0.02	820	42932		
			15:45:34	29.94	20.02	143.05	0.02	0.02	820	43850		
			15:45:35	29.87	20.02	142.92	0.02	0.02	820	48235		
			15:45:36	29.83	20.01	142.90	0.02	0.02	820	51250		
			15:45:37	29.89	20.01	142.92	0.02	0.02	820	45304		
			15:45:38	29.89	20.01	142.78	0.02	0.02	820	43850		
			15:45:39	30.01	20.01	142.82	0.02	0.02	820	43850		
			15:45:40	29.98	20.01	142.90	0.02	0.02	820	45304		
			15:45:41	30.05	20.02	143.03	0.02	0.02	820	41624		
			15:45:42	29.99	20.02	143.09	0.02	0.02	820	46328		
			15:45:43	30.02	20.02	143.23	0.02	0.02	820	46591		
			15:45:44	30.04	20.02	143.23	0.02	0.02	820	44324		
			15:45:45	30.04	20.03	143.33	0.02	0.02	820	42932		
			15:45:46	30.04	20.03	143.34	0.02	0.02	820	48235		
			15:45:47	30.08	20.03	143.45	0.02	0.02	820	46328		
			15:45:48	30.12	20.03	143.45	0.02	0.02	820	41414		
			15:45:49	30.17	20.04	143.49	0.02	0.02	820	43850		
			15:45:50	30.16	20.05	143.49	0.02	0.02	820	46591		
			15:45:51	30.19	20.04	143.25	0.02	0.02	820	41837		

**TABLE D-34**

Profile PRO-28 on September 22, 2022 (1541-1547 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:45:52	30.10	20.03	143.28	0.02	0.02	820	42932		
			15:45:53	30.12	20.03	143.33	0.02	0.02	820	47399		
			15:45:54	30.09	20.06	143.47	0.02	0.02	820	42708		
			15:45:55	30.12	20.07	143.53	0.02	0.02	820	47953		
			15:45:56	30.13	20.06	143.55	0.02	0.02	820	44324		
			15:45:57	30.14	20.06	143.47	0.02	0.02	820	46328		
			15:45:58	30.09	20.06	143.53	0.02	0.02	820	44809		
			15:45:59	30.13	20.08	143.59	0.02	0.02	820	48235		
			15:46:00	30.16	20.08	143.55	0.02	0.02	820	46857		
			15:46:01	30.09	20.08	143.55	0.02	0.02	820	43850		
			15:46:02	30.09	20.09	143.29	0.02	0.02	820	42487		
			15:46:03	30.11	20.12	143.14	0.02	0.02	820	42268		
			15:46:04	30.12	20.13	143.18	0.02	0.02	820	41414		
			15:46:05	30.12	20.13	143.31	0.02	0.02	820	43850		
			15:46:06	30.08	20.12	143.32	0.02	0.02	820	43386		
			15:46:07	30.12	20.12	143.38	0.02	0.02	820	43617		
			15:46:08	30.11	20.11	143.40	0.02	0.02	820	41837		
			15:46:09	30.10	20.11	143.34	0.02	0.02	820	46328		
			15:46:10	30.15	20.11	143.38	0.02	0.02	820	44809		
			15:46:11	30.09	20.09	143.43	0.02	0.02	820	48235		
			15:46:12	30.11	20.08	143.40	0.02	0.02	820	45304		
			15:46:13	30.10	20.08	143.43	0.02	0.02	820	48810		
			15:46:14	30.06	20.08	143.34	0.02	0.02	820	47953		
			15:46:15	30.07	20.09	143.32	0.02	0.02	820	50617		
			15:46:16	30.05	20.08	143.34	0.02	0.02	820	45304		
			15:46:17	30.07	20.08	143.40	0.02	0.02	820	45810		
			15:46:18	30.07	20.06	143.40	0.02	0.02	820	44324		
			15:46:19	30.08	20.06	143.43	0.02	0.02	820	43850		
			15:46:20	30.07	20.05	143.34	0.02	0.02	820	50000		
			15:46:21	30.11	20.05	143.36	0.02	0.02	820	44324		
			15:46:22	30.09	20.04	143.34	0.02	0.02	820	42932		
			15:46:23	30.06	20.05	143.32	0.02	0.02	820	46857		
			15:46:24	30.07	20.07	143.38	0.02	0.02	820	46857		
			15:46:25	30.08	20.08	143.34	0.02	0.02	820	42487		
			15:46:26	30.09	20.08	143.36	0.02	0.02	820	43850		
			15:46:27	30.03	20.07	143.36	0.02	0.02	820	44324		
			15:46:28	30.09	20.08	143.32	0.02	0.02	820	42487		
			15:46:29	30.07	20.09	143.36	0.02	0.02	820	47126		
			15:46:30	30.11	20.08	143.34	0.02	0.02	820	44809		

**TABLE D-34**

Profile PRO-28 on September 22, 2022 (1541-1547 hours PDT) located at South Mixing Zone Boundary  
 Salmon Creek Treatment Plant Outfall 001 Mixing Performance Study

0	Instantaneous Minimum Dilution in Profile
0	Minimum Average Dilution in Profile
0	Plume Average Dilution

Profile Information			SeaBird CTD				Receiving Water		Effluent	Dilution Calculations		Comments
Sampling Location	Water Depth (ft)	Current Speed and Direction	Time (PDT)	Sampling Depth (ft)	Temp. (deg. C)	Cond. (µS/cm)	Measured Dye Conc. (ppb)	Calibration-Corrected Dye Conc. (ppb)	Measured Initial Dye Conc. (ppb)	Instant. Minimum Dilution	Minimum Plume Avg. Dilution	Measurement Observations
			15:46:31	30.04	20.07	143.40	0.02	0.02	820	43617		
			15:46:32	30.12	20.07	143.38	0.02	0.02	820	42268		
			15:46:33	30.11	20.08	143.34	0.02	0.02	820	45810		
			15:46:34	30.14	20.06	143.40	0.02	0.02	820	42932		
			15:46:35	30.12	20.05	143.38	0.02	0.02	820	45304		
			15:46:36	30.14	20.05	143.43	0.02	0.02	820	43850		
			15:46:37	30.11	20.05	143.36	0.02	0.02	820	45810		
			15:46:38	30.14	20.06	143.32	0.02	0.02	820	44809		
			15:46:39	30.12	20.09	143.32	0.02	0.02	820	46591		
			15:46:40	30.04	20.09	143.35	0.02	0.02	820	41414		
			15:46:41	30.11	20.10	143.32	0.02	0.02	820	46328		
			15:46:42	30.10	20.10	143.34	0.02	0.02	820	48235		
			15:46:43	30.12	20.10	143.30	0.02	0.02	820	42051		
			15:46:44	30.04	20.10	143.32	0.02	0.02	820	43386		
			15:46:45	30.08	20.09	143.40	0.02	0.02	820	44809		
			15:46:46	30.04	20.09	143.34	0.02	0.02	820	43850		
			15:46:47	30.11	20.08	143.38	0.02	0.02	820	44324		
			15:46:48	30.02	20.07	143.36	0.02	0.02	820	42051		
			15:46:49	30.10	20.07	143.40	0.02	0.02	820	46328		
			15:46:50	30.08	20.07	143.40	0.02	0.02	820	45304		
			15:46:51	30.13	20.07	143.38	0.02	0.02	820	45304		
			15:46:52	30.07	20.07	143.38	0.02	0.02	820	46591		
			15:46:53	30.09	20.08	143.36	0.02	0.02	820	44324		
			15:46:54	30.09	20.08	143.38	0.02	0.02	820	46328		
			15:46:55	30.13	20.09	143.32	0.02	0.02	820	44809		
			15:46:56	30.09	20.09	143.36	0.02	0.02	820	45304		
			15:46:57	30.09	20.09	143.36	0.02	0.02	820	45810		
			15:46:58	30.08	20.09	143.36	0.02	0.02	820	46328		
			15:46:59	30.14	20.08	143.34	0.02	0.02	820	43850		
			15:47:00	30.05	20.08	143.38	0.02	0.02	820	50000		
			15:47:01	30.11	20.07	143.36	0.02	0.02	820	47126		
			15:47:02	30.10	20.06	143.36	0.02	0.02	820	43850		
			15:47:03	30.11	20.06	143.36	0.02	0.02	820	41624		
			15:47:04	30.11	20.06	143.40	0.02	0.02	820	45810		
			15:47:05	30.08	20.06	143.40	0.02	0.02	820	45810		
			15:47:06	30.15	20.06	143.36	0.02	0.02	820	45304		



## **Appendix E Dilution Modeling Input and Output**

**E-1. Validation Model Runs**

**E-2 Outfall 001 Model Runs**



## E-1. Validation Model Runs



/ UM3. 11/28/2022 9:51:44 AM

Case 1; ambient file C:\Plumes\SCTP outfall\_pro-5\_rev1.001.db; Diffuser table record 1: -----

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Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.36	90.0	0.0	20.29	0.0	0.0	0.36	90.0	0.0003	-1.793
15.0	0.36	90.0	0.0	20.29	0.0	0.0	0.36	90.0	0.0003	-1.793

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChronicMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.6867	4.3	45.0	135.0	10.0	16.0	24.0	242.0	44.0	9.5	1.00E-3	22.4	100.0

Simulation:

Froude number: 39.13; effleunt density (sigma-T) -2.258; effleunt velocity 1.21(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	44.0	0.36	0.687	100.0	1.0	0.0	0.0	0.0;
10	43.87	0.36	0.816	82.03	1.219	-0.0932	0.0996	0.0524;
20	43.74	0.36	0.975	67.3	1.486	-0.187	0.213	0.117;
30	43.6	0.36	1.157	55.21	1.811	-0.281	0.345	0.196;
40	43.47	0.36	1.364	45.29	2.207	-0.376	0.498	0.293;
50	43.33	0.36	1.596	37.15	2.691	-0.471	0.676	0.411;
60	43.2	0.36	1.853	30.48	3.28	-0.566	0.885	0.555;
70	43.06	0.36	2.135	25.0	3.998	-0.662	1.133	0.732;
80	42.92	0.36	2.442	20.51	4.874	-0.761	1.434	0.953;
90	42.78	0.36	2.773	16.83	5.941	-0.863	1.807	1.234;
100	42.62	0.36	3.131	13.8	7.242	-0.971	2.277	1.595;
110	42.46	0.36	3.518	11.32	8.828	-1.086	2.88	2.066;
120	42.28	0.36	3.937	9.289	10.76	-1.211	3.663	2.686;
130	42.09	0.36	4.392	7.62	13.12	-1.346	4.688	3.508;
140	41.87	0.36	4.888	6.251	15.99	-1.494	6.04	4.602;
150	41.64	0.36	5.431	5.128	19.49	-1.656	7.827	6.06;
160	41.38	0.36	6.025	4.207	23.76	-1.833	10.2	8.005;
170	41.09	0.36	6.677	3.451	28.96	-2.027	13.34	10.6;
180	40.77	0.36	7.393	2.831	35.3	-2.238	17.51	14.06;
190	40.42	0.36	8.181	2.323	43.04	-2.469	23.04	18.66;
192	40.34	0.36	8.348	2.232	44.77	-2.518	24.34	19.75; acute zone;
200	40.02	0.36	9.049	1.905	52.46	-2.721	30.34	24.76;
210	39.58	0.36	10.01	1.563	63.95	-2.993	39.97	32.81;
220	39.08	0.36	11.06	1.282	77.95	-3.286	52.58	43.39;
225	38.81	0.36	11.63	1.161	86.07	-3.441	60.26	49.84; merging;
230	38.39	0.36	12.31	1.052	95.03	-3.675	73.09	60.63;
240	37.34	0.36	14.12	0.863	115.8	-4.211	107.3	89.38;
250	36.05	0.36	16.51	0.708	141.2	-4.794	152.5	127.4;
260	34.48	0.36	19.56	0.581	172.1	-5.417	211.3	177.1;
265	33.57	0.36	21.38	0.526	190.0	-5.742	246.8	207.0; chronic zone;
270	32.56	0.36	23.4	0.476	209.8	-6.074	286.8	240.8;
280	30.21	0.36	28.16	0.391	255.8	-6.756	382.3	321.4;
290	27.33	0.36	34.05	0.321	311.8	-7.457	502.0	422.4;
300	23.8	0.36	41.28	0.263	380.1	-8.173	650.6	548.0;
304	22.18	0.36	44.62	0.243	411.4	-8.461	719.4	606.2; surface;

Outside chronic zone

; 9:51:44 AM. amb fills: 2

/ UM3. 11/23/2022 12:39:57 PM

Case 1; ambient file C:\Plumes\SCTP outfall\_pro-8\_9-21-22.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.21	90.0	0.0	20.31	0.0	0.0	0.21	90.0	0.0003	-1.797
15.0	0.21	90.0	0.0	20.31	0.0	0.0	0.21	90.0	0.0003	-1.797

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChronicMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.6806	4.3	45.0	135.0	10.0	16.0	24.0	242.0	43.0	9.16	1.00E-3	22.52	100.0

Simulation:

Froude number: 37.64; effleunt density (sigma-T) -2.285; effleunt velocity 1.187(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	43.0	0.21	0.681	100.0	1.0	0.0	0.0	0.0;
10	42.82	0.21	0.814	82.03	1.219	-0.125	0.13	0.0719;
20	42.63	0.21	0.98	67.3	1.486	-0.26	0.283	0.166;
30	42.43	0.21	1.177	55.21	1.811	-0.404	0.461	0.289;
40	42.21	0.21	1.407	45.29	2.207	-0.555	0.666	0.446;
50	41.99	0.21	1.674	37.15	2.691	-0.711	0.902	0.643;
60	41.77	0.21	1.981	30.48	3.28	-0.869	1.173	0.887;
70	41.54	0.21	2.33	25.0	3.998	-1.029	1.483	1.188;
80	41.31	0.21	2.721	20.51	4.874	-1.19	1.842	1.557;
90	41.08	0.21	3.155	16.83	5.941	-1.352	2.26	2.012;
100	40.84	0.21	3.633	13.8	7.242	-1.518	2.755	2.576;
110	40.6	0.21	4.155	11.32	8.827	-1.688	3.352	3.282;
120	40.34	0.21	4.722	9.289	10.76	-1.865	4.084	4.179;
130	40.07	0.21	5.337	7.62	13.12	-2.051	4.999	5.332;
140	39.78	0.21	6.005	6.251	15.99	-2.25	6.159	6.829;
150	39.47	0.21	6.73	5.128	19.49	-2.463	7.646	8.787;
160	39.12	0.21	7.52	4.207	23.76	-2.693	9.57	11.36;
170	38.75	0.21	8.382	3.451	28.96	-2.942	12.07	14.76;
180	38.33	0.21	9.324	2.831	35.3	-3.212	15.34	19.25;
190	37.87	0.21	10.36	2.323	43.04	-3.504	19.61	25.17;
198	37.46	0.21	11.25	1.982	50.42	-3.754	23.94	31.23; acute zone;
200	37.35	0.21	11.49	1.905	52.46	-3.819	25.18	32.96;
204	37.13	0.21	11.97	1.76	56.78	-3.952	27.85	36.72; merging;
210	36.59	0.21	12.88	1.563	63.95	-4.261	34.73	46.41;
220	35.48	0.21	14.91	1.282	77.95	-4.856	50.17	68.26;
230	34.13	0.21	17.58	1.052	95.02	-5.513	70.89	97.72;
240	32.46	0.21	21.0	0.863	115.8	-6.229	98.27	136.8;
250	30.42	0.21	25.28	0.708	141.2	-6.995	133.9	187.7;
260	27.9	0.21	30.6	0.581	172.1	-7.801	179.4	253.1;
270	24.81	0.21	37.15	0.476	209.8	-8.637	236.9	335.7;
271	24.47	0.21	37.89	0.467	214.0	-8.722	243.4	345.0; chronic zone;
280	21.02	0.21	45.21	0.391	255.8	-9.496	308.7	439.2;
287	17.87	0.21	51.91	0.34	293.8	-10.11	369.1	526.2; matched energy radial vel = 0.154m/s;
290	16.38	0.21	55.08	0.321	311.8	-10.37	397.8	567.7;
295	13.67	0.21	60.81	0.29	344.2	-10.81	449.9	642.9; surface;

Outside chronic zone

; 12:39:57 PM. amb fills: 2

/ UM3. 11/23/2022 1:26:16 PM

Case 1; ambient file C:\Plumes\SCTP outfall\_pro-9\_9-21-22.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.21	90.0	0.0	20.22	0.0	0.0	0.21	90.0	0.0003	-1.779
15.0	0.21	90.0	0.0	20.22	0.0	0.0	0.21	90.0	0.0003	-1.779

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChronicMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.6779	4.3	45.0	135.0	10.0	16.0	24.0	242.0	44.0	9.0	1.00E-3	22.53	100.0

Simulation:

Froude number: 36.56; effleunt density (sigma-T) -2.288; effleunt velocity 1.176(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	44.0	0.21	0.678	100.0	1.0	0.0	0.0	0.0;
10	43.82	0.21	0.811	82.03	1.219	-0.124	0.129	0.072;
20	43.63	0.21	0.976	67.3	1.486	-0.258	0.281	0.167;
30	43.43	0.21	1.172	55.21	1.811	-0.401	0.457	0.289;
40	43.22	0.21	1.4	45.29	2.207	-0.55	0.66	0.446;
50	43.0	0.21	1.666	37.15	2.691	-0.703	0.894	0.642;
60	42.78	0.21	1.971	30.48	3.28	-0.859	1.162	0.885;
70	42.56	0.21	2.317	25.0	3.998	-1.017	1.47	1.185;
80	42.33	0.21	2.705	20.51	4.873	-1.176	1.826	1.553;
90	42.1	0.21	3.136	16.83	5.941	-1.336	2.241	2.006;
100	41.87	0.21	3.609	13.8	7.241	-1.499	2.733	2.568;
110	41.63	0.21	4.126	11.32	8.827	-1.667	3.326	3.272;
120	41.37	0.21	4.688	9.289	10.76	-1.842	4.055	4.167;
130	41.11	0.21	5.297	7.62	13.12	-2.027	4.967	5.318;
140	40.82	0.21	5.958	6.251	15.99	-2.223	6.123	6.812;
150	40.51	0.21	6.677	5.128	19.49	-2.434	7.606	8.769;
160	40.17	0.21	7.459	4.207	23.76	-2.662	9.526	11.34;
170	39.79	0.21	8.313	3.451	28.96	-2.908	12.02	14.74;
180	39.38	0.21	9.246	2.831	35.3	-3.175	15.28	19.22;
190	38.92	0.21	10.27	2.323	43.03	-3.463	19.54	25.13;
198	38.51	0.21	11.16	1.982	50.42	-3.711	23.86	31.17; acute zone;
200	38.4	0.21	11.39	1.905	52.46	-3.775	25.09	32.89;
204	38.18	0.21	11.87	1.76	56.78	-3.905	27.75	36.63; merging;
210	37.65	0.21	12.74	1.563	63.95	-4.207	34.52	46.18;
220	36.56	0.21	14.72	1.282	77.95	-4.788	49.74	67.73;
230	35.23	0.21	17.33	1.052	95.02	-5.428	70.1	96.68;
240	33.59	0.21	20.68	0.863	115.8	-6.123	96.95	135.0;
250	31.57	0.21	24.88	0.708	141.2	-6.866	131.8	184.9;
260	29.09	0.21	30.1	0.581	172.1	-7.646	176.3	248.7;
270	26.04	0.21	36.53	0.476	209.8	-8.455	232.4	329.4;
272	25.36	0.21	37.99	0.458	218.3	-8.619	245.2	347.9; chronic zone;
280	22.31	0.21	44.45	0.391	255.8	-9.285	302.5	430.4;
289	18.23	0.21	53.08	0.327	305.7	-10.05	379.8	541.9; matched energy radial vel = 0.154m/s;
290	17.72	0.21	54.14	0.321	311.8	-10.13	389.3	555.6;
297	13.92	0.21	62.19	0.279	358.1	-10.73	461.9	660.5; surface;

Outside chronic zone

; 1:26:17 PM. amb fills: 2

/ UM3. 11/23/2022 1:38:24 PM

Case 1; ambient file C:\Plumes\SCTP outfall\_pro-10\_9-21-22.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.16	90.0	0.0	20.2	0.0	0.0	0.16	90.0	0.0003	-1.774
15.0	0.16	90.0	0.0	20.2	0.0	0.0	0.16	90.0	0.0003	-1.774

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.6702	4.3	45.0	135.0	10.0	16.0	24.0	242.0	44.0	8.54	1.00E-3	22.61	100.0

Simulation:

Froude number: 34.93; effleunt density (sigma-T) -2.306; effleunt velocity 1.142(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	44.0	0.16	0.67	100.0	1.0	0.0	0.0	0.0;
10	43.81	0.16	0.803	82.03	1.219	-0.133	0.137	0.0794;
20	43.6	0.16	0.97	67.3	1.486	-0.282	0.302	0.188;
30	43.37	0.16	1.168	55.21	1.811	-0.446	0.496	0.333;
40	43.12	0.16	1.402	45.29	2.207	-0.622	0.722	0.523;
50	42.86	0.16	1.677	37.15	2.691	-0.807	0.983	0.767;
60	42.58	0.16	1.996	30.48	3.28	-0.998	1.282	1.075;
70	42.31	0.16	2.365	25.0	3.998	-1.194	1.625	1.458;
80	42.02	0.16	2.784	20.51	4.873	-1.393	2.016	1.932;
90	41.73	0.16	3.256	16.83	5.94	-1.593	2.467	2.515;
100	41.44	0.16	3.783	13.8	7.241	-1.796	2.989	3.233;
110	41.14	0.16	4.363	11.32	8.827	-2.001	3.604	4.122;
120	40.84	0.16	5.0	9.289	10.76	-2.212	4.338	5.232;
130	40.52	0.16	5.693	7.62	13.12	-2.43	5.232	6.635;
140	40.18	0.16	6.447	6.251	15.99	-2.659	6.338	8.427;
150	39.82	0.16	7.265	5.128	19.49	-2.901	7.726	10.74;
160	39.42	0.16	8.155	4.207	23.76	-3.16	9.491	13.75;
170	38.99	0.16	9.124	3.451	28.96	-3.437	11.75	17.68;
180	38.52	0.16	10.18	2.831	35.3	-3.734	14.67	22.82;
190	38.0	0.16	11.33	2.323	43.03	-4.053	18.43	29.55;
197	37.58	0.16	12.21	2.022	49.43	-4.297	21.8	35.64; merging;
200	37.31	0.16	12.65	1.905	52.46	-4.454	24.17	39.95; acute zone;
210	36.22	0.16	14.6	1.563	63.95	-5.042	34.29	58.4;
220	34.89	0.16	17.23	1.282	77.95	-5.694	47.83	83.31;
230	33.26	0.16	20.62	1.052	95.02	-6.407	65.78	116.5;
240	31.25	0.16	24.88	0.863	115.8	-7.174	89.18	160.1;
250	28.77	0.16	30.19	0.708	141.2	-7.985	119.2	216.2;
260	25.71	0.16	36.75	0.581	172.1	-8.83	157.2	287.4;
270	21.96	0.16	44.81	0.476	209.8	-9.701	204.8	376.9; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 44.70 m

conc	dilutn	width	distnce	time				
(%)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
0.47437	210.7	44.82	64.0	0.00261	0.0	0.0	0.16	3.00E-4
0.4748	210.5	44.97	66.0	0.00608	0.0	0.0	0.16	3.00E-4
0.47508	210.4	45.13	68.0	0.00955	0.0	0.0	0.16	3.00E-4
0.47526	210.3	45.29	70.0	0.013	0.0	0.0	0.16	3.00E-4
0.4754	210.2	45.45	72.0	0.0165	0.0	0.0	0.16	3.00E-4
0.47551	210.2	45.61	74.0	0.02	0.0	0.0	0.16	3.00E-4

count: 6

1:38:24 PM. amb fills: 2



/ UM3. 11/23/2022 1:42:57 PM

Case 1; ambient file C:\Plumes\SCTP outfall\_pro-16\_9-22-22.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.5	90.0	0.0	20.11	0.0	0.0	0.5	90.0	0.0003	-1.756
15.0	0.5	90.0	0.0	20.11	0.0	0.0	0.5	90.0	0.0003	-1.756

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChronicMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.6316	4.3	45.0	135.0	10.0	16.0	24.0	242.0	44.0	6.36	1.00E-3	22.23	100.0

Simulation:

Froude number: 32.35; effleunt density (sigma-T) -2.218; effleunt velocity 0.957(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	44.0	0.5	0.632	100.0	1.0	0.0	0.0	0.0;
10	43.93	0.5	0.742	82.03	1.219	-0.0526	0.0587	0.0372;
20	43.86	0.5	0.87	67.4	1.483	-0.101	0.126	0.0793;
30	43.79	0.5	1.006	55.62	1.798	-0.148	0.204	0.128;
40	43.73	0.5	1.155	45.8	2.183	-0.194	0.299	0.188;
50	43.66	0.5	1.317	37.58	2.661	-0.242	0.42	0.262;
60	43.59	0.5	1.49	30.82	3.243	-0.292	0.573	0.357;
70	43.51	0.5	1.674	25.29	3.953	-0.346	0.772	0.48;
80	43.43	0.5	1.871	20.74	4.819	-0.403	1.035	0.642;
90	43.34	0.5	2.083	17.02	5.874	-0.466	1.386	0.857;
100	43.24	0.5	2.313	13.96	7.16	-0.535	1.855	1.146;
110	43.13	0.5	2.564	11.45	8.728	-0.61	2.487	1.533;
120	43.01	0.5	2.838	9.395	10.64	-0.694	3.336	2.052;
130	42.88	0.5	3.139	7.707	12.97	-0.786	4.478	2.751;
140	42.74	0.5	3.469	6.322	15.81	-0.888	6.014	3.69;
150	42.57	0.5	3.833	5.187	19.27	-1.0	8.076	4.95;
160	42.39	0.5	4.234	4.255	23.49	-1.123	10.84	6.639;
170	42.19	0.5	4.676	3.49	28.64	-1.258	14.54	8.899;
180	41.97	0.5	5.163	2.863	34.91	-1.405	19.48	11.92;
188	41.77	0.5	5.589	2.444	40.9	-1.533	24.59	15.03; acute zone;
190	41.72	0.5	5.701	2.349	42.55	-1.567	26.06	15.93;
200	41.44	0.5	6.295	1.927	51.87	-1.742	34.78	21.25;
210	41.13	0.5	6.95	1.581	63.23	-1.932	46.28	28.26;
220	40.78	0.5	7.673	1.297	77.08	-2.136	61.36	37.47;
230	40.39	0.5	8.472	1.064	93.96	-2.355	81.0	49.44;
240	39.94	0.5	9.354	0.873	114.5	-2.586	106.4	64.91;
250	39.43	0.5	10.33	0.716	139.6	-2.828	138.8	84.68;
260	38.85	0.5	11.4	0.587	170.2	-3.08	179.8	109.7; merging;
269	38.01	0.5	12.67	0.491	203.4	-3.405	243.9	148.8; chronic zone;
270	37.9	0.5	12.84	0.482	207.5	-3.443	252.1	153.8;
280	36.72	0.5	14.83	0.395	252.9	-3.826	345.1	210.4;
290	35.28	0.5	17.4	0.324	308.3	-4.22	461.2	281.3;
300	33.53	0.5	20.66	0.266	375.8	-4.62	605.3	369.1;
310	31.39	0.5	24.73	0.218	458.1	-5.026	783.3	477.6;
320	28.79	0.5	29.77	0.179	558.4	-5.435	1002.1	611.0;
330	25.61	0.5	35.98	0.147	680.7	-5.847	1270.5	774.6;
340	21.73	0.5	43.61	0.12	829.7	-6.26	1599.0	974.9; surface;

Outside chronic zone

; 1:42:57 PM. amb fills: 2

/ UM3. 11/28/2022 10:11:52 AM

Case 1; ambient file C:\Plumes\SCTP outfall\_pro-21\_rev1.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.21	90.0	0.0	20.03	0.0	0.0	0.21	90.0	0.0003	-1.739
15.0	0.21	90.0	0.0	20.03	0.0	0.0	0.21	90.0	0.0003	-1.739

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChronicMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.6796	4.3	45.0	135.0	10.0	16.0	24.0	242.0	44.0	9.1	1.00E-3	22.37	100.0

Simulation:

Froude number: 36.65; effleunt density (sigma-T) -2.251; effleunt velocity 1.183(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	44.0	0.21	0.68	100.0	1.0	0.0	0.0	0.0;
10	43.82	0.21	0.813	82.03	1.219	-0.125	0.13	0.0719;
20	43.63	0.21	0.979	67.3	1.486	-0.259	0.282	0.166;
30	43.43	0.21	1.175	55.21	1.811	-0.403	0.459	0.289;
40	43.22	0.21	1.404	45.29	2.207	-0.553	0.664	0.446;
50	43.0	0.21	1.671	37.15	2.691	-0.708	0.899	0.642;
60	42.77	0.21	1.977	30.48	3.28	-0.865	1.169	0.886;
70	42.55	0.21	2.325	25.0	3.998	-1.024	1.478	1.187;
80	42.32	0.21	2.715	20.51	4.873	-1.184	1.836	1.556;
90	42.09	0.21	3.148	16.83	5.941	-1.346	2.253	2.01;
100	41.85	0.21	3.624	13.8	7.241	-1.511	2.747	2.573;
110	41.61	0.21	4.144	11.32	8.827	-1.68	3.342	3.278;
120	41.35	0.21	4.709	9.289	10.76	-1.856	4.073	4.174;
130	41.08	0.21	5.322	7.62	13.12	-2.042	4.986	5.326;
140	40.79	0.21	5.987	6.251	15.99	-2.24	6.144	6.821;
150	40.48	0.21	6.71	5.128	19.49	-2.452	7.629	8.778;
160	40.14	0.21	7.497	4.207	23.76	-2.681	9.55	11.35;
170	39.76	0.21	8.356	3.451	28.96	-2.929	12.05	14.75;
180	39.34	0.21	9.295	2.831	35.3	-3.197	15.31	19.23;
190	38.88	0.21	10.32	2.323	43.03	-3.487	19.57	25.13;
198	38.47	0.21	11.22	1.982	50.42	-3.736	23.88	31.17; acute zone;
200	38.37	0.21	11.45	1.905	52.46	-3.8	25.11	32.9;
204	38.14	0.21	11.93	1.76	56.78	-3.932	27.78	36.64; merging;
210	37.61	0.21	12.83	1.563	63.95	-4.237	34.59	46.25;
220	36.51	0.21	14.84	1.282	77.95	-4.823	49.87	67.87;
230	35.16	0.21	17.49	1.052	95.02	-5.47	70.31	96.93;
240	33.5	0.21	20.88	0.863	115.8	-6.172	97.28	135.4;
250	31.46	0.21	25.13	0.708	141.2	-6.922	132.2	185.5;
260	28.96	0.21	30.41	0.581	172.1	-7.71	176.9	249.6;
270	25.88	0.21	36.92	0.476	209.8	-8.527	233.2	330.6;
272	25.19	0.21	38.39	0.458	218.3	-8.693	246.1	349.1; chronic zone;
280	22.11	0.21	44.92	0.391	255.8	-9.365	303.6	431.8; surface;

Outside chronic zone

; 10:11:53 AM. amb fills: 2

/ UM3. 11/23/2022 1:47:36 PM

Case 1; ambient file C:\Plumes\SCTP outfall\_pro-22\_9-22-22.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.12	90.0	0.0	20.03	0.0	0.0	0.12	90.0	0.0003	-1.739
15.0	0.12	90.0	0.0	20.03	0.0	0.0	0.12	90.0	0.0003	-1.739

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.6859	4.3	45.0	135.0	10.0	16.0	24.0	242.0	44.0	9.48	1.00E-3	22.39	100.0

Simulation:

Froude number: 37.15; effleunt density (sigma-T) -2.255; effleunt velocity 1.21(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)	
0	44.0	0.12	0.686	100.0	1.0	0.0	0.0	0.0;
10	43.79	0.12	0.824	82.03	1.219	-0.148	0.152	0.0835;
20	43.55	0.12	0.997	67.3	1.486	-0.318	0.333	0.2;
30	43.28	0.12	1.205	55.21	1.811	-0.511	0.552	0.362;
40	42.97	0.12	1.454	45.29	2.207	-0.729	0.815	0.585;
50	42.63	0.12	1.748	37.15	2.691	-0.968	1.124	0.882;
60	42.26	0.12	2.096	30.48	3.28	-1.224	1.481	1.27;
70	41.88	0.12	2.504	25.0	3.998	-1.492	1.891	1.765;
80	41.48	0.12	2.977	20.51	4.873	-1.77	2.36	2.391;
90	41.08	0.12	3.521	16.83	5.941	-2.054	2.895	3.17;
100	40.66	0.12	4.139	13.8	7.241	-2.342	3.505	4.134;
110	40.24	0.12	4.835	11.32	8.827	-2.633	4.206	5.322;
120	39.8	0.12	5.609	9.289	10.76	-2.928	5.019	6.787;
130	39.36	0.12	6.464	7.62	13.12	-3.228	5.974	8.602;
140	38.9	0.12	7.401	6.251	15.99	-3.535	7.114	10.87;
150	38.42	0.12	8.423	5.128	19.49	-3.853	8.496	13.73;
160	37.91	0.12	9.536	4.207	23.76	-4.185	10.2	17.38;
170	37.36	0.12	10.75	3.451	28.96	-4.535	12.32	22.07;
180	36.76	0.12	12.06	2.831	35.3	-4.906	15.01	28.13;
184	36.51	0.12	12.62	2.616	38.21	-5.061	16.27	31.02; merging;
190	35.9	0.12	13.66	2.323	43.03	-5.421	19.5	38.49;
196	35.17	0.12	15.0	2.062	48.46	-5.83	23.58	48.01; acute zone;
200	34.64	0.12	16.05	1.905	52.46	-6.119	26.73	55.43;
210	33.12	0.12	19.26	1.563	63.95	-6.902	36.47	78.58;
220	31.24	0.12	23.39	1.282	77.95	-7.768	49.47	109.8;
230	28.91	0.12	28.58	1.052	95.02	-8.712	66.56	151.3;
240	26.04	0.12	35.02	0.863	115.8	-9.722	88.66	205.4;
250	22.5	0.12	42.98	0.708	141.2	-10.79	116.8	274.8;
252	21.69	0.12	44.78	0.68	146.9	-11.0	123.3	290.7; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 44.68 m

conc	dilutn	width	distnce	time				
(%)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
0.67719	147.6	44.71	38.0	6.33E-4	0.0	0.0	0.12	3.00E-4
0.67801	147.4	44.93	40.0	0.00526	0.0	0.0	0.12	3.00E-4
0.67856	147.3	45.14	42.0	0.00989	0.0	0.0	0.12	3.00E-4
0.67889	147.2	45.35	44.0	0.0145	0.0	0.0	0.12	3.00E-4
0.67911	147.2	45.56	46.0	0.0192	0.0	0.0	0.12	3.00E-4
0.67928	147.1	45.76	48.0	0.0238	0.0	0.0	0.12	3.00E-4
0.67941	147.1	45.97	50.0	0.0284	0.0	0.0	0.12	3.00E-4
0.67951	147.1	46.18	52.0	0.033	0.0	0.0	0.12	3.00E-4
0.6796	147.1	46.38	54.0	0.0377	0.0	0.0	0.12	3.00E-4
0.67967	147.1	46.59	56.0	0.0423	0.0	0.0	0.12	3.00E-4
0.67974	147.0	46.79	58.0	0.0469	0.0	0.0	0.12	3.00E-4
0.67979	147.0	47.0	60.0	0.0516	0.0	0.0	0.12	3.00E-4
0.67984	147.0	47.2	62.0	0.0562	0.0	0.0	0.12	3.00E-4
0.67988	147.0	47.4	64.0	0.0608	0.0	0.0	0.12	3.00E-4
0.67992	147.0	47.6	66.0	0.0654	0.0	0.0	0.12	3.00E-4
0.67996	147.0	47.8	68.0	0.0701	0.0	0.0	0.12	3.00E-4
0.67999	147.0	48.0	70.0	0.0747	0.0	0.0	0.12	3.00E-4
0.68001	147.0	48.2	72.0	0.0793	0.0	0.0	0.12	3.00E-4
0.68003	147.0	48.39	74.0	0.084	0.0	0.0	0.12	3.00E-4

count: 19

; 1:47:36 PM. amb fills: 2

/ UM3. 11/23/2022 1:50:47 PM

Case 1; ambient file C:\Plumes\SCTP outfall\_pro-25\_9-22-22.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-sp	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.24	90.0	0.0	20.02	0.0	0.0	0.24	90.0	0.0003	-1.737
15.0	0.24	90.0	0.0	20.02	0.0	0.0	0.24	90.0	0.0003	-1.737

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChronicMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.6806	4.3	45.0	135.0	10.0	16.0	24.0	242.0	44.0	9.16	1.00E-3	22.5	100.0

Simulation:

Froude number: 35.66; effleunt density (sigma-T) -2.281; effleunt velocity 1.187(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	44.0	0.24	0.681	100.0	1.0	0.0	0.0	0.0;
10	43.83	0.24	0.813	82.03	1.219	-0.118	0.123	0.0675;
20	43.66	0.24	0.977	67.3	1.486	-0.242	0.266	0.155;
30	43.47	0.24	1.17	55.21	1.811	-0.373	0.432	0.266;
40	43.28	0.24	1.395	45.29	2.207	-0.508	0.623	0.407;
50	43.09	0.24	1.654	37.15	2.691	-0.646	0.842	0.581;
60	42.89	0.24	1.949	30.48	3.28	-0.785	1.095	0.796;
70	42.69	0.24	2.282	25.0	3.998	-0.925	1.386	1.06;
80	42.49	0.24	2.651	20.51	4.873	-1.067	1.725	1.384;
90	42.28	0.24	3.058	16.83	5.94	-1.21	2.125	1.784;
100	42.07	0.24	3.503	13.8	7.241	-1.356	2.606	2.283;
110	41.85	0.24	3.987	11.32	8.827	-1.508	3.194	2.915;
120	41.62	0.24	4.511	9.289	10.76	-1.668	3.927	3.725;
130	41.38	0.24	5.079	7.62	13.12	-1.838	4.855	4.775;
140	41.11	0.24	5.696	6.251	15.99	-2.02	6.045	6.149;
150	40.82	0.24	6.367	5.128	19.49	-2.217	7.587	7.958;
160	40.5	0.24	7.099	4.207	23.76	-2.431	9.595	10.35;
170	40.15	0.24	7.899	3.451	28.96	-2.662	12.22	13.51;
180	39.76	0.24	8.774	2.831	35.3	-2.913	15.66	17.69;
190	39.33	0.24	9.734	2.323	43.03	-3.186	20.17	23.21;
197	39.0	0.24	10.46	2.022	49.43	-3.389	24.13	28.08; acute zone;
200	38.85	0.24	10.79	1.905	52.46	-3.479	26.07	30.47;
209	38.36	0.24	11.83	1.594	62.69	-3.763	32.88	38.92; merging;
210	38.29	0.24	11.95	1.563	63.94	-3.803	33.96	40.25;
220	37.31	0.24	13.6	1.282	77.95	-4.333	49.61	59.73;
230	36.11	0.24	15.86	1.052	95.02	-4.923	70.77	86.16;
240	34.63	0.24	18.79	0.863	115.8	-5.564	98.72	121.2;
250	32.81	0.24	22.48	0.708	141.2	-6.25	135.0	166.8;
260	30.58	0.24	27.09	0.581	172.1	-6.971	181.5	225.2;
270	27.85	0.24	32.8	0.476	209.8	-7.719	240.1	299.1;
271	27.54	0.24	33.43	0.467	214.0	-7.795	246.7	307.5; chronic zone;
280	24.49	0.24	39.82	0.391	255.7	-8.487	313.4	391.6;
286	22.12	0.24	44.78	0.347	288.0	-8.955	365.6	457.6; surface;

Outside chronic zone

; 1:50:47 PM. amb fills: 2



S = hydrodynamic dilutions, include buoyancy (heat) loss effects, but provided plume has surface contact  
 C = corresponding temperature values (in "deg.C") include heat loss, if any

-----  
 BEGIN MOD201: DIFFUSER DISCHARGE MODULE

Due to complex near-field motions: EQUIVALENT SLOT DIFFUSER (2-D) GEOMETRY

Profile definitions:

BV = Gaussian 1/e (37%) width, in vertical plane normal to trajectory  
 BH = top-hat half-width, in horizontal plane normal to trajectory  
 S = hydrodynamic centerline dilution  
 C = centerline concentration (includes reaction effects, if any)  
 Uc = Local centerline excess velocity (above ambient)  
 TT = Cumulative travel time

X	Y	Z	S	C	BV	BH	Uc	TT
0.00	0.00	1.31	1.0	0.211E+01	0.01	21.95	1.030	.00000E+00

END OF MOD201: DIFFUSER DISCHARGE MODULE  
 -----

BEGIN MOD271: ACCELERATION ZONE OF UNIDIRECTIONAL CO-FLOWING DIFFUSER

In this laterally contracting zone the diffuser plume becomes VERTICALLY FULLY MIXED over the entire layer depth (HS = 13.41m).  
 Full mixing is achieved after a plume distance of about five layer depths from the diffuser.

Profile definitions:

BV = layer depth (vertically mixed)  
 BH = top-hat half-width, in horizontal plane normal to trajectory  
 S = hydrodynamic average (bulk) dilution  
 C = average (bulk) concentration (includes reaction effects, if any)  
 TT = Cumulative travel time

X	Y	Z	S	C	BV	BH	TT
0.00	0.00	1.31	1.0	0.211E+01	0.01	21.95	.00000E+00
0.31	0.31	1.35	73.0	0.289E-01	0.27	21.94	.11656E+01
0.62	0.62	1.38	102.9	0.205E-01	0.54	21.94	.23613E+01
0.93	0.93	1.42	125.8	0.168E-01	0.80	21.93	.35624E+01
1.24	1.24	1.45	145.1	0.145E-01	1.07	21.93	.47664E+01
1.55	1.55	1.49	162.1	0.130E-01	1.34	21.93	.59722E+01
1.86	1.86	1.52	177.4	0.119E-01	1.61	21.92	.71792E+01
2.17	2.17	1.56	191.6	0.110E-01	1.88	21.92	.83873E+01
2.48	2.48	1.59	204.7	0.103E-01	2.15	21.92	.95961E+01
2.79	2.79	1.63	217.1	0.972E-02	2.41	21.92	.10806E+02
3.10	3.10	1.66	228.8	0.922E-02	2.68	21.91	.12016E+02
3.41	3.41	1.70	239.9	0.880E-02	2.95	21.91	.13226E+02
3.72	3.72	1.73	250.5	0.842E-02	3.22	21.91	.14437E+02
4.03	4.03	1.77	260.7	0.809E-02	3.49	21.91	.15648E+02
4.35	4.35	1.81	270.5	0.780E-02	3.76	21.90	.16859E+02
4.66	4.66	1.84	280.0	0.754E-02	4.02	21.90	.18071E+02
4.97	4.97	1.88	289.1	0.730E-02	4.29	21.90	.19283E+02
5.28	5.28	1.91	298.0	0.708E-02	4.56	21.90	.20495E+02
5.59	5.59	1.95	306.6	0.688E-02	4.83	21.90	.21708E+02
5.90	5.90	1.98	315.0	0.670E-02	5.10	21.90	.22920E+02
6.21	6.21	2.02	323.1	0.653E-02	5.36	21.89	.24133E+02
6.52	6.52	2.05	331.1	0.637E-02	5.63	21.89	.25346E+02
6.83	6.83	2.09	338.8	0.623E-02	5.90	21.89	.26559E+02
7.14	7.14	2.12	346.4	0.609E-02	6.17	21.89	.27772E+02
7.45	7.45	2.16	353.9	0.596E-02	6.44	21.89	.28986E+02
7.76	7.76	2.19	361.1	0.584E-02	6.71	21.89	.30199E+02
8.07	8.07	2.23	368.3	0.573E-02	6.97	21.89	.31413E+02
8.38	8.38	2.26	375.3	0.562E-02	7.24	21.88	.32626E+02
8.69	8.69	2.30	382.1	0.552E-02	7.51	21.88	.33840E+02
9.00	9.00	2.33	388.9	0.543E-02	7.78	21.88	.35054E+02
9.31	9.31	2.37	395.5	0.533E-02	8.05	21.88	.36268E+02
9.62	9.62	2.41	402.0	0.525E-02	8.31	21.88	.37482E+02
9.93	9.93	2.44	408.4	0.517E-02	8.58	21.88	.38696E+02
10.24	10.24	2.48	414.8	0.509E-02	8.85	21.88	.39910E+02
10.55	10.55	2.51	421.0	0.501E-02	9.12	21.88	.41125E+02
10.86	10.86	2.55	427.1	0.494E-02	9.39	21.88	.42339E+02
11.17	11.17	2.58	433.2	0.487E-02	9.66	21.88	.43553E+02
11.48	11.48	2.62	439.1	0.481E-02	9.92	21.88	.44768E+02
11.79	11.79	2.65	445.0	0.474E-02	10.19	21.88	.45982E+02
12.10	12.10	2.69	450.8	0.468E-02	10.46	21.88	.47197E+02
12.41	12.41	2.72	456.5	0.462E-02	10.73	21.88	.48412E+02
12.72	12.72	2.76	462.2	0.457E-02	11.00	21.88	.49626E+02
13.04	13.04	2.79	467.8	0.451E-02	11.27	21.88	.50841E+02

13.35	13.35	2.83	473.3	0.446E-02	11.53	21.87	.52056E+02
13.66	13.66	2.86	478.8	0.441E-02	11.80	21.87	.53271E+02
13.97	13.97	2.90	484.2	0.436E-02	12.07	21.87	.54486E+02
14.28	14.28	2.94	489.5	0.431E-02	12.34	21.87	.55701E+02
14.59	14.59	2.97	494.8	0.426E-02	12.61	21.87	.56916E+02
14.90	14.90	3.01	500.0	0.422E-02	12.87	21.87	.58131E+02
15.21	15.21	3.04	505.2	0.418E-02	13.14	21.87	.59346E+02
15.52	15.52	3.08	510.3	0.413E-02	13.41	21.87	.60561E+02

Cumulative travel time = 60.5612 sec ( 0.02 hrs)  
 Plume centerline may exhibit slight discontinuities in transition  
 to subsequent far-field module.

END OF MOD271: ACCELERATION ZONE OF UNIDIRECTIONAL CO-FLOWING DIFFUSER

BEGIN MOD251: DIFFUSER PLUME IN CO-FLOW

Phase 1: Vertically mixed, Phase 2: Re-stratified

Phase 2: The flow has RESTRATIFIED at the beginning of this zone.

This flow region is INSIGNIFICANT in spatial extent and will be by-passed.

END OF MOD251: DIFFUSER PLUME IN CO-FLOW

\*\* End of NEAR-FIELD REGION (NFR) \*\*

BEGIN MOD241: BUOYANT AMBIENT SPREADING

Discharge is non-buoyant or weakly buoyant.  
 Therefore BUOYANT SPREADING REGIME is ABSENT.

END OF MOD241: BUOYANT AMBIENT SPREADING

Due to the attachment or proximity of the plume to the bottom, the bottom  
 coordinate for the FAR-FIELD differs from the ambient depth, ZFB = 0 m.  
 In a subsequent analysis set "depth at discharge" equal to "ambient depth".

BEGIN MOD261: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT

Vertical diffusivity (initial value) = 0.610E-01 m<sup>2</sup>/s  
 Horizontal diffusivity (initial value) = 0.924E-01 m<sup>2</sup>/s

Profile definitions:

- BV = Gaussian s.d.\*sqrt(pi/2) (46%) thickness, measured vertically  
 = or equal to layer depth, if fully mixed
- BH = Gaussian s.d.\*sqrt(pi/2) (46%) half-width,  
 measured horizontally in Y-direction
- ZU = upper plume boundary (Z-coordinate)
- ZL = lower plume boundary (Z-coordinate)
- S = hydrodynamic centerline dilution
- C = centerline concentration (includes reaction effects, if any)
- TT = Cumulative travel time

Plume Stage 1 (not bank attached):

X	Y	Z	S	C	BV	BH	ZU	ZL	TT
15.52	15.52	13.41	510.3	0.413E-02	13.41	22.00	13.41	0.00	.60561E+02

Plume interacts with BOTTOM.

The passive diffusion plume becomes VERTICALLY FULLY MIXED within this  
 prediction interval.

45.69	15.52	13.41	523.2	0.403E-02	13.41	22.55	13.41	0.00	.14437E+03
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\*\* REGULATORY MIXING ZONE BOUNDARY \*\*

In this prediction interval the plume DOWNSTREAM distance meets or exceeds  
 the regulatory value = 73.76 m.

This is the extent of the REGULATORY MIXING ZONE.

75.86	15.52	13.41	536.2	0.393E-02	13.41	23.11	13.41	0.00	.22817E+03
106.03	15.52	13.41	549.3	0.384E-02	13.41	23.68	13.41	0.00	.31197E+03
136.20	15.52	13.41	562.5	0.375E-02	13.41	24.25	13.41	0.00	.39578E+03
166.37	15.52	13.41	575.8	0.366E-02	13.41	24.82	13.41	0.00	.47958E+03
196.54	15.52	13.41	589.2	0.358E-02	13.41	25.40	13.41	0.00	.56339E+03
226.71	15.52	13.41	602.7	0.350E-02	13.41	25.98	13.41	0.00	.64719E+03
256.88	15.52	13.41	616.4	0.342E-02	13.41	26.57	13.41	0.00	.73100E+03
287.04	15.52	13.41	630.1	0.335E-02	13.41	27.16	13.41	0.00	.81480E+03
317.21	15.52	13.41	643.9	0.328E-02	13.41	27.76	13.41	0.00	.89861E+03
347.38	15.52	13.41	657.8	0.321E-02	13.41	28.36	13.41	0.00	.98241E+03
377.55	15.52	13.41	671.8	0.314E-02	13.41	28.96	13.41	0.00	.10662E+04
407.72	15.52	13.41	686.0	0.307E-02	13.41	29.57	13.41	0.00	.11500E+04
437.89	15.52	13.41	700.2	0.301E-02	13.41	30.18	13.41	0.00	.12338E+04
468.06	15.52	13.41	714.5	0.295E-02	13.41	30.80	13.41	0.00	.13176E+04
498.23	15.52	13.41	728.9	0.289E-02	13.41	31.42	13.41	0.00	.14014E+04







S = hydrodynamic dilutions, include buoyancy (heat) loss effects, but provided plume has surface contact  
 C = corresponding temperature values (in "deg.C") include heat loss, if any

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 BEGIN MOD201: DIFFUSER DISCHARGE MODULE

Due to complex near-field motions: EQUIVALENT SLOT DIFFUSER (2-D) GEOMETRY

Profile definitions:

BV = Gaussian 1/e (37%) width, in vertical plane normal to trajectory  
 BH = top-hat half-width, in horizontal plane normal to trajectory  
 S = hydrodynamic centerline dilution  
 C = centerline concentration (includes reaction effects, if any)  
 Uc = Local centerline excess velocity (above ambient)  
 TT = Cumulative travel time

X	Y	Z	S	C	BV	BH	Uc	TT
0.00	0.00	1.31	1.0	0.221E+01	0.01	21.95	1.082	.00000E+00

END OF MOD201: DIFFUSER DISCHARGE MODULE  
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BEGIN MOD271: ACCELERATION ZONE OF UNIDIRECTIONAL CO-FLOWING DIFFUSER

In this laterally contracting zone the diffuser plume becomes VERTICALLY FULLY MIXED over the entire layer depth (HS = 13.11m).  
 Full mixing is achieved after a plume distance of about five layer depths from the diffuser.

Profile definitions:

BV = layer depth (vertically mixed)  
 BH = top-hat half-width, in horizontal plane normal to trajectory  
 S = hydrodynamic average (bulk) dilution  
 C = average (bulk) concentration (includes reaction effects, if any)  
 TT = Cumulative travel time

X	Y	Z	S	C	BV	BH	TT
0.00	0.00	1.31	1.0	0.221E+01	0.01	21.95	.00000E+00
0.31	0.31	1.35	43.7	0.506E-01	0.26	21.93	.18507E+01
0.62	0.62	1.38	61.4	0.360E-01	0.52	21.92	.38276E+01
0.93	0.93	1.42	75.0	0.295E-01	0.79	21.91	.58305E+01
1.24	1.24	1.45	86.4	0.256E-01	1.05	21.90	.78468E+01
1.55	1.55	1.49	96.5	0.229E-01	1.31	21.89	.98719E+01
1.86	1.86	1.52	105.6	0.209E-01	1.57	21.88	.11903E+02
2.17	2.17	1.56	114.0	0.194E-01	1.83	21.88	.13939E+02
2.48	2.48	1.59	121.8	0.181E-01	2.10	21.87	.15979E+02
2.79	2.79	1.63	129.1	0.171E-01	2.36	21.86	.18021E+02
3.10	3.10	1.66	136.1	0.162E-01	2.62	21.85	.20067E+02
3.41	3.41	1.70	142.7	0.155E-01	2.88	21.85	.22114E+02
3.72	3.72	1.73	148.9	0.148E-01	3.15	21.84	.24163E+02
4.03	4.03	1.77	155.0	0.143E-01	3.41	21.84	.26214E+02
4.35	4.35	1.80	160.8	0.137E-01	3.67	21.83	.28267E+02
4.66	4.66	1.84	166.4	0.133E-01	3.93	21.82	.30321E+02
4.97	4.97	1.87	171.8	0.129E-01	4.19	21.82	.32376E+02
5.28	5.28	1.91	177.1	0.125E-01	4.46	21.81	.34432E+02
5.59	5.59	1.94	182.2	0.121E-01	4.72	21.81	.36489E+02
5.90	5.90	1.98	187.2	0.118E-01	4.98	21.80	.38547E+02
6.21	6.21	2.01	192.0	0.115E-01	5.24	21.80	.40605E+02
6.52	6.52	2.05	196.7	0.112E-01	5.50	21.80	.42665E+02
6.83	6.83	2.08	201.3	0.110E-01	5.77	21.79	.44725E+02
7.14	7.14	2.12	205.8	0.107E-01	6.03	21.79	.46786E+02
7.45	7.45	2.15	210.2	0.105E-01	6.29	21.79	.48848E+02
7.76	7.76	2.19	214.5	0.103E-01	6.55	21.78	.50910E+02
8.07	8.07	2.22	218.8	0.101E-01	6.82	21.78	.52972E+02
8.38	8.38	2.26	222.9	0.991E-02	7.08	21.78	.55036E+02
8.69	8.69	2.29	227.0	0.974E-02	7.34	21.77	.57099E+02
9.00	9.00	2.33	231.0	0.957E-02	7.60	21.77	.59163E+02
9.31	9.31	2.36	234.9	0.941E-02	7.86	21.77	.61228E+02
9.62	9.62	2.40	238.8	0.925E-02	8.13	21.76	.63293E+02
9.93	9.93	2.43	242.6	0.911E-02	8.39	21.76	.65359E+02
10.24	10.24	2.47	246.3	0.897E-02	8.65	21.76	.67424E+02
10.55	10.55	2.50	250.0	0.884E-02	8.91	21.76	.69491E+02
10.86	10.86	2.54	253.7	0.871E-02	9.17	21.76	.71557E+02
11.17	11.17	2.57	257.3	0.859E-02	9.44	21.75	.73624E+02
11.48	11.48	2.61	260.8	0.847E-02	9.70	21.75	.75691E+02
11.79	11.79	2.64	264.3	0.836E-02	9.96	21.75	.77759E+02
12.10	12.10	2.68	267.7	0.825E-02	10.22	21.75	.79826E+02
12.41	12.41	2.72	271.1	0.815E-02	10.49	21.75	.81894E+02
12.72	12.72	2.75	274.5	0.805E-02	10.75	21.75	.83963E+02
13.04	13.04	2.79	277.8	0.796E-02	11.01	21.75	.86031E+02

13.35	13.35	2.82	281.1	0.786E-02	11.27	21.75	.88100E+02
13.66	13.66	2.86	284.3	0.777E-02	11.53	21.75	.90169E+02
13.97	13.97	2.89	287.5	0.769E-02	11.80	21.75	.92239E+02
14.28	14.28	2.93	290.7	0.760E-02	12.06	21.75	.94308E+02
14.59	14.59	2.96	293.8	0.752E-02	12.32	21.75	.96378E+02
14.90	14.90	3.00	296.9	0.744E-02	12.58	21.75	.98448E+02
15.21	15.21	3.03	300.0	0.737E-02	12.84	21.75	.10052E+03
15.52	15.52	3.07	303.0	0.729E-02	13.11	21.75	.10259E+03

Cumulative travel time = 102.5885 sec ( 0.03 hrs)  
 Plume centerline may exhibit slight discontinuities in transition  
 to subsequent far-field module.

END OF MOD271: ACCELERATION ZONE OF UNIDIRECTIONAL CO-FLOWING DIFFUSER

BEGIN MOD251: DIFFUSER PLUME IN CO-FLOW

Phase 1: Vertically mixed, Phase 2: Re-stratified

Phase 2: The flow has RESTRATIFIED at the beginning of this zone.

This flow region is INSIGNIFICANT in spatial extent and will be by-passed.

END OF MOD251: DIFFUSER PLUME IN CO-FLOW

\*\* End of NEAR-FIELD REGION (NFR) \*\*

BEGIN MOD241: BUOYANT AMBIENT SPREADING

Profile definitions:

- BV = top-hat thickness, measured vertically
- BH = top-hat half-width, measured horizontally in y-direction
- ZU = upper plume boundary (Z-coordinate)
- ZL = lower plume boundary (Z-coordinate)
- S = hydrodynamic average (bulk) dilution
- C = average (bulk) concentration (includes reaction effects, if any)
- TT = Cumulative travel time

Plume Stage 1 (not bank attached):

X	Y	Z	S	C	BV	BH	ZU	ZL	TT
15.52	15.52	13.11	303.0	0.729E-02	13.11	22.09	13.11	0.00	.10259E+03
16.36	15.52	13.11	303.4	0.728E-02	13.10	22.13	13.11	0.01	.10659E+03
17.20	15.52	13.11	303.8	0.728E-02	13.09	22.17	13.11	0.01	.11059E+03
18.04	15.52	13.11	304.2	0.727E-02	13.08	22.21	13.11	0.02	.11459E+03
18.88	15.52	13.11	304.5	0.726E-02	13.08	22.25	13.11	0.03	.11859E+03
19.72	15.52	13.11	304.9	0.725E-02	13.07	22.29	13.11	0.04	.12259E+03
20.56	15.52	13.11	305.3	0.724E-02	13.06	22.33	13.11	0.04	.12659E+03
21.40	15.52	13.11	305.7	0.723E-02	13.06	22.37	13.11	0.05	.13060E+03
22.24	15.52	13.11	306.1	0.722E-02	13.05	22.42	13.11	0.06	.13460E+03
23.08	15.52	13.11	306.5	0.721E-02	13.04	22.46	13.11	0.06	.13860E+03
23.92	15.52	13.11	306.9	0.720E-02	13.04	22.50	13.11	0.07	.14260E+03
24.76	15.52	13.11	307.3	0.719E-02	13.03	22.54	13.11	0.08	.14660E+03
25.60	15.52	13.11	307.7	0.718E-02	13.02	22.58	13.11	0.08	.15060E+03
26.44	15.52	13.11	308.1	0.717E-02	13.02	22.62	13.11	0.09	.15460E+03
27.28	15.52	13.11	308.5	0.716E-02	13.01	22.66	13.11	0.10	.15860E+03
28.12	15.52	13.11	308.9	0.716E-02	13.00	22.70	13.11	0.10	.16260E+03
28.96	15.52	13.11	309.3	0.715E-02	13.00	22.74	13.11	0.11	.16660E+03
29.80	15.52	13.11	309.6	0.714E-02	12.99	22.78	13.11	0.12	.17060E+03
30.64	15.52	13.11	310.0	0.713E-02	12.98	22.82	13.11	0.12	.17461E+03
31.48	15.52	13.11	310.4	0.712E-02	12.98	22.86	13.11	0.13	.17861E+03
32.32	15.52	13.11	310.8	0.711E-02	12.97	22.90	13.11	0.13	.18261E+03
33.16	15.52	13.11	311.2	0.710E-02	12.97	22.94	13.11	0.14	.18661E+03
34.00	15.52	13.11	311.6	0.709E-02	12.96	22.98	13.11	0.15	.19061E+03
34.84	15.52	13.11	312.0	0.708E-02	12.95	23.02	13.11	0.15	.19461E+03
35.68	15.52	13.11	312.4	0.707E-02	12.95	23.06	13.11	0.16	.19861E+03
36.52	15.52	13.11	312.9	0.706E-02	12.94	23.10	13.11	0.16	.20261E+03
37.36	15.52	13.11	313.3	0.705E-02	12.94	23.14	13.11	0.17	.20661E+03
38.20	15.52	13.11	313.7	0.705E-02	12.93	23.18	13.11	0.18	.21061E+03
39.04	15.52	13.11	314.1	0.704E-02	12.93	23.22	13.11	0.18	.21461E+03
39.88	15.52	13.11	314.5	0.703E-02	12.92	23.26	13.11	0.19	.21862E+03
40.72	15.52	13.11	314.9	0.702E-02	12.92	23.30	13.11	0.19	.22262E+03
41.56	15.52	13.11	315.3	0.701E-02	12.91	23.34	13.11	0.20	.22662E+03
42.40	15.52	13.11	315.7	0.700E-02	12.90	23.38	13.11	0.20	.23062E+03
43.24	15.52	13.11	316.1	0.699E-02	12.90	23.42	13.11	0.21	.23462E+03
44.08	15.52	13.11	316.5	0.698E-02	12.89	23.45	13.11	0.21	.23862E+03
44.92	15.52	13.11	316.9	0.697E-02	12.89	23.49	13.11	0.22	.24262E+03
45.77	15.52	13.11	317.3	0.696E-02	12.88	23.53	13.11	0.22	.24662E+03
46.61	15.52	13.11	317.7	0.695E-02	12.88	23.57	13.11	0.23	.25062E+03
47.45	15.52	13.11	318.2	0.695E-02	12.87	23.61	13.11	0.23	.25462E+03
48.29	15.52	13.11	318.6	0.694E-02	12.87	23.65	13.11	0.24	.25863E+03

49.13	15.52	13.11	319.0	0.693E-02	12.87	23.69	13.11	0.24	.26263E+03
49.97	15.52	13.11	319.4	0.692E-02	12.86	23.73	13.11	0.25	.26663E+03
50.81	15.52	13.11	319.8	0.691E-02	12.86	23.77	13.11	0.25	.27063E+03
51.65	15.52	13.11	320.2	0.690E-02	12.85	23.81	13.11	0.25	.27463E+03
52.49	15.52	13.11	320.7	0.689E-02	12.85	23.85	13.11	0.26	.27863E+03
53.33	15.52	13.11	321.1	0.688E-02	12.84	23.89	13.11	0.26	.28263E+03
54.17	15.52	13.11	321.5	0.687E-02	12.84	23.93	13.11	0.27	.28663E+03
55.01	15.52	13.11	321.9	0.686E-02	12.83	23.97	13.11	0.27	.29063E+03
55.85	15.52	13.11	322.3	0.686E-02	12.83	24.01	13.11	0.28	.29463E+03
56.69	15.52	13.11	322.8	0.685E-02	12.83	24.04	13.11	0.28	.29863E+03
57.53	15.52	13.11	323.2	0.684E-02	12.82	24.08	13.11	0.28	.30264E+03

Cumulative travel time = 302.6358 sec ( 0.08 hrs)

END OF MOD241: BUOYANT AMBIENT SPREADING

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 Due to the attachment or proximity of the plume to the bottom, the bottom coordinate for the FAR-FIELD differs from the ambient depth, ZFB = 0 m. In a subsequent analysis set "depth at discharge" equal to "ambient depth".  
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BEGIN MOD261: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT

Vertical diffusivity (initial value) = 0.351E-01 m<sup>2</sup>/s  
 Horizontal diffusivity (initial value) = 0.104E+00 m<sup>2</sup>/s

Profile definitions:

BV = Gaussian s.d.\*sqrt(pi/2) (46%) thickness, measured vertically  
 = or equal to layer depth, if fully mixed  
 BH = Gaussian s.d.\*sqrt(pi/2) (46%) half-width,  
 measured horizontally in Y-direction  
 ZU = upper plume boundary (Z-coordinate)  
 ZL = lower plume boundary (Z-coordinate)  
 S = hydrodynamic centerline dilution  
 C = centerline concentration (includes reaction effects, if any)  
 TT = Cumulative travel time

Plume Stage 1 (not bank attached):

X	Y	Z	S	C	BV	BH	ZU	ZL	TT
57.53	15.52	13.11	323.2	0.684E-02	12.82	24.08	13.11	0.28	.30264E+03

\*\* REGULATORY MIXING ZONE BOUNDARY \*\*

In this prediction interval the plume DOWNSTREAM distance meets or exceeds the regulatory value = 73.76 m.

This is the extent of the REGULATORY MIXING ZONE.

Plume interacts with BOTTOM.

The passive diffusion plume becomes VERTICALLY FULLY MIXED within this prediction interval.

86.86	15.52	13.11	343.5	0.643E-02	13.11	25.04	13.11	0.00	.44230E+03
116.19	15.52	13.11	356.7	0.619E-02	13.11	26.01	13.11	0.00	.58196E+03
145.52	15.52	13.11	370.2	0.597E-02	13.11	26.99	13.11	0.00	.72163E+03
174.85	15.52	13.11	383.8	0.576E-02	13.11	27.98	13.11	0.00	.86129E+03
204.18	15.52	13.11	397.6	0.556E-02	13.11	28.99	13.11	0.00	.10010E+04
233.50	15.52	13.11	411.6	0.537E-02	13.11	30.00	13.11	0.00	.11406E+04
262.83	15.52	13.11	425.7	0.519E-02	13.11	31.03	13.11	0.00	.12803E+04
292.16	15.52	13.11	439.9	0.502E-02	13.11	32.07	13.11	0.00	.14199E+04
321.49	15.52	13.11	454.3	0.486E-02	13.11	33.12	13.11	0.00	.15596E+04
350.82	15.52	13.11	468.9	0.471E-02	13.11	34.19	13.11	0.00	.16993E+04
380.15	15.52	13.11	483.6	0.457E-02	13.11	35.26	13.11	0.00	.18389E+04
409.48	15.52	13.11	498.5	0.443E-02	13.11	36.34	13.11	0.00	.19786E+04
438.81	15.52	13.11	513.5	0.430E-02	13.11	37.44	13.11	0.00	.21183E+04
468.14	15.52	13.11	528.7	0.418E-02	13.11	38.55	13.11	0.00	.22579E+04
497.47	15.52	13.11	544.0	0.406E-02	13.11	39.66	13.11	0.00	.23976E+04
526.80	15.52	13.11	559.5	0.395E-02	13.11	40.79	13.11	0.00	.25373E+04
556.13	15.52	13.11	575.1	0.384E-02	13.11	41.93	13.11	0.00	.26769E+04
585.46	15.52	13.11	590.9	0.374E-02	13.11	43.08	13.11	0.00	.28166E+04
614.79	15.52	13.11	606.8	0.364E-02	13.11	44.24	13.11	0.00	.29563E+04
644.12	15.52	13.11	622.8	0.354E-02	13.11	45.40	13.11	0.00	.30959E+04
673.45	15.52	13.11	639.0	0.345E-02	13.11	46.58	13.11	0.00	.32356E+04
702.78	15.52	13.11	655.3	0.337E-02	13.11	47.77	13.11	0.00	.33752E+04
732.11	15.52	13.11	671.7	0.328E-02	13.11	48.97	13.11	0.00	.35149E+04
761.43	15.52	13.11	688.3	0.321E-02	13.11	50.18	13.11	0.00	.36546E+04
790.76	15.52	13.11	705.0	0.313E-02	13.11	51.40	13.11	0.00	.37942E+04
820.09	15.52	13.11	721.9	0.306E-02	13.11	52.63	13.11	0.00	.39339E+04
849.42	15.52	13.11	738.8	0.299E-02	13.11	53.87	13.11	0.00	.40736E+04
878.75	15.52	13.11	756.0	0.292E-02	13.11	55.11	13.11	0.00	.42132E+04
908.08	15.52	13.11	773.2	0.285E-02	13.11	56.37	13.11	0.00	.43529E+04
937.41	15.52	13.11	790.6	0.279E-02	13.11	57.64	13.11	0.00	.44926E+04
966.74	15.52	13.11	808.1	0.273E-02	13.11	58.91	13.11	0.00	.46322E+04
996.07	15.52	13.11	825.7	0.267E-02	13.11	60.20	13.11	0.00	.47719E+04
1025.40	15.52	13.11	843.4	0.261E-02	13.11	61.49	13.11	0.00	.49115E+04
1054.73	15.52	13.11	861.3	0.256E-02	13.11	62.80	13.11	0.00	.50512E+04
1084.06	15.52	13.11	879.3	0.251E-02	13.11	64.11	13.11	0.00	.51909E+04
1113.39	15.52	13.11	897.5	0.246E-02	13.11	65.43	13.11	0.00	.53305E+04





S = hydrodynamic dilutions, include buoyancy (heat) loss effects, but provided plume has surface contact  
 C = corresponding temperature values (in "deg.C") include heat loss, if any

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 BEGIN MOD201: DIFFUSER DISCHARGE MODULE

Due to complex near-field motions: EQUIVALENT SLOT DIFFUSER (2-D) GEOMETRY

Profile definitions:

BV = Gaussian 1/e (37%) width, in vertical plane normal to trajectory  
 BH = top-hat half-width, in horizontal plane normal to trajectory  
 S = hydrodynamic centerline dilution  
 C = centerline concentration (includes reaction effects, if any)  
 Uc = Local centerline excess velocity (above ambient)  
 TT = Cumulative travel time

X	Y	Z	S	C	BV	BH	Uc	TT
0.00	0.00	1.31	1.0	0.231E+01	0.01	21.95	1.071	.00000E+00

END OF MOD201: DIFFUSER DISCHARGE MODULE  
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BEGIN MOD271: ACCELERATION ZONE OF UNIDIRECTIONAL CO-FLOWING DIFFUSER

In this laterally contracting zone the diffuser plume becomes VERTICALLY FULLY MIXED over the entire layer depth (HS = 13.41m).  
 Full mixing is achieved after a plume distance of about five layer depths from the diffuser.

Profile definitions:

BV = layer depth (vertically mixed)  
 BH = top-hat half-width, in horizontal plane normal to trajectory  
 S = hydrodynamic average (bulk) dilution  
 C = average (bulk) concentration (includes reaction effects, if any)  
 TT = Cumulative travel time

X	Y	Z	S	C	BV	BH	TT
0.00	0.00	1.31	1.0	0.231E+01	0.01	21.95	.00000E+00
0.31	0.31	1.35	45.5	0.508E-01	0.27	21.93	.18609E+01
0.62	0.62	1.38	63.9	0.362E-01	0.54	21.92	.38433E+01
0.93	0.93	1.42	78.0	0.296E-01	0.80	21.91	.58503E+01
1.24	1.24	1.45	89.9	0.257E-01	1.07	21.90	.78702E+01
1.55	1.55	1.49	100.4	0.230E-01	1.34	21.90	.98984E+01
1.86	1.86	1.52	109.9	0.210E-01	1.61	21.89	.11933E+02
2.17	2.17	1.56	118.7	0.195E-01	1.88	21.88	.13971E+02
2.48	2.48	1.59	126.8	0.182E-01	2.15	21.87	.16013E+02
2.79	2.79	1.63	134.4	0.172E-01	2.41	21.87	.18058E+02
3.10	3.10	1.66	141.6	0.163E-01	2.68	21.86	.20106E+02
3.41	3.41	1.70	148.5	0.156E-01	2.95	21.85	.22155E+02
3.72	3.72	1.73	155.1	0.149E-01	3.22	21.85	.24206E+02
4.03	4.03	1.77	161.3	0.143E-01	3.49	21.84	.26259E+02
4.35	4.35	1.81	167.4	0.138E-01	3.76	21.84	.28314E+02
4.66	4.66	1.84	173.2	0.133E-01	4.02	21.83	.30369E+02
4.97	4.97	1.88	178.9	0.129E-01	4.29	21.83	.32426E+02
5.28	5.28	1.91	184.4	0.125E-01	4.56	21.82	.34484E+02
5.59	5.59	1.95	189.7	0.122E-01	4.83	21.82	.36542E+02
5.90	5.90	1.98	194.8	0.119E-01	5.10	21.81	.38602E+02
6.21	6.21	2.02	199.9	0.116E-01	5.36	21.81	.40662E+02
6.52	6.52	2.05	204.8	0.113E-01	5.63	21.80	.42723E+02
6.83	6.83	2.09	209.6	0.110E-01	5.90	21.80	.44785E+02
7.14	7.14	2.12	214.3	0.108E-01	6.17	21.80	.46847E+02

\*\* REGULATORY MIXING ZONE BOUNDARY is within the Near-Field Region \*\*

In this prediction interval the plume DOWNSTREAM distance meets or exceeds the regulatory value = 7.38 m.

This is the extent of the REGULATORY MIXING ZONE.

7.45	7.45	2.16	218.9	0.106E-01	6.44	21.79	.48910E+02
7.76	7.76	2.19	223.4	0.103E-01	6.71	21.79	.50973E+02
8.07	8.07	2.23	227.8	0.101E-01	6.97	21.79	.53037E+02
8.38	8.38	2.26	232.1	0.995E-02	7.24	21.78	.55102E+02
8.69	8.69	2.30	236.3	0.977E-02	7.51	21.78	.57167E+02
9.00	9.00	2.33	240.5	0.961E-02	7.78	21.78	.59232E+02
9.31	9.31	2.37	244.6	0.944E-02	8.05	21.78	.61298E+02
9.62	9.62	2.41	248.6	0.929E-02	8.31	21.77	.63365E+02
9.93	9.93	2.44	252.6	0.915E-02	8.58	21.77	.65431E+02
10.24	10.24	2.48	256.5	0.901E-02	8.85	21.77	.67498E+02
10.55	10.55	2.51	260.3	0.887E-02	9.12	21.77	.69565E+02
10.86	10.86	2.55	264.1	0.875E-02	9.39	21.77	.71633E+02
11.17	11.17	2.58	267.8	0.863E-02	9.66	21.76	.73701E+02
11.48	11.48	2.62	271.5	0.851E-02	9.92	21.76	.75769E+02
11.79	11.79	2.65	275.1	0.840E-02	10.19	21.76	.77838E+02

12.10	12.10	2.69	278.7	0.829E-02	10.46	21.76	.79907E+02
12.41	12.41	2.72	282.3	0.818E-02	10.73	21.76	.81976E+02
12.72	12.72	2.76	285.8	0.808E-02	11.00	21.76	.84045E+02
13.04	13.04	2.79	289.2	0.799E-02	11.27	21.76	.86115E+02
13.35	13.35	2.83	292.6	0.789E-02	11.53	21.76	.88185E+02
13.66	13.66	2.86	296.0	0.780E-02	11.80	21.76	.90255E+02
13.97	13.97	2.90	299.3	0.772E-02	12.07	21.76	.92325E+02
14.28	14.28	2.94	302.6	0.763E-02	12.34	21.76	.94396E+02
14.59	14.59	2.97	305.9	0.755E-02	12.61	21.76	.96467E+02
14.90	14.90	3.01	309.1	0.747E-02	12.87	21.76	.98538E+02
15.21	15.21	3.04	312.3	0.740E-02	13.14	21.75	.10061E+03
15.52	15.52	3.08	315.5	0.732E-02	13.41	21.75	.10268E+03

Cumulative travel time = 102.6801 sec ( 0.03 hrs)

Plume centerline may exhibit slight discontinuities in transition to subsequent far-field module.

END OF MOD271: ACCELERATION ZONE OF UNIDIRECTIONAL CO-FLOWING DIFFUSER

BEGIN MOD251: DIFFUSER PLUME IN CO-FLOW

Phase 1: Vertically mixed, Phase 2: Re-stratified

Phase 2: The flow has RESTRATIFIED at the beginning of this zone.

This flow region is INSIGNIFICANT in spatial extent and will be by-passed.

END OF MOD251: DIFFUSER PLUME IN CO-FLOW

\*\* End of NEAR-FIELD REGION (NFR) \*\*

BEGIN MOD241: BUOYANT AMBIENT SPREADING

Profile definitions:

BV = top-hat thickness, measured vertically  
 BH = top-hat half-width, measured horizontally in y-direction  
 ZU = upper plume boundary (Z-coordinate)  
 ZL = lower plume boundary (Z-coordinate)  
 S = hydrodynamic average (bulk) dilution  
 C = average (bulk) concentration (includes reaction effects, if any)  
 TT = Cumulative travel time

Plume Stage 1 (not bank attached):

X	Y	Z	S	C	BV	BH	ZU	ZL	TT
15.52	15.52	13.41	315.5	0.732E-02	13.41	22.08	13.41	0.00	.10268E+03
17.77	15.52	13.41	316.5	0.730E-02	13.39	22.19	13.41	0.02	.11340E+03
20.02	15.52	13.41	317.5	0.727E-02	13.37	22.30	13.41	0.04	.12411E+03
22.27	15.52	13.41	318.6	0.725E-02	13.34	22.41	13.41	0.07	.13483E+03
24.52	15.52	13.41	319.6	0.723E-02	13.32	22.52	13.41	0.09	.14555E+03
26.77	15.52	13.41	320.7	0.720E-02	13.30	22.63	13.41	0.11	.15626E+03
29.02	15.52	13.41	321.8	0.718E-02	13.28	22.74	13.41	0.13	.16698E+03
31.27	15.52	13.41	322.8	0.715E-02	13.26	22.85	13.41	0.15	.17770E+03
33.52	15.52	13.41	323.9	0.713E-02	13.25	22.96	13.41	0.17	.18841E+03
35.77	15.52	13.41	325.0	0.711E-02	13.23	23.07	13.41	0.18	.19913E+03
38.02	15.52	13.41	326.1	0.708E-02	13.21	23.18	13.41	0.20	.20985E+03
40.27	15.52	13.41	327.2	0.706E-02	13.19	23.28	13.41	0.22	.22056E+03
42.52	15.52	13.41	328.3	0.704E-02	13.18	23.39	13.41	0.24	.23128E+03
44.77	15.52	13.41	329.4	0.701E-02	13.16	23.50	13.41	0.25	.24200E+03
47.02	15.52	13.41	330.5	0.699E-02	13.14	23.60	13.41	0.27	.25271E+03
49.28	15.52	13.41	331.6	0.697E-02	13.13	23.71	13.41	0.28	.26343E+03
51.53	15.52	13.41	332.7	0.694E-02	13.11	23.82	13.41	0.30	.27415E+03
53.78	15.52	13.41	333.8	0.692E-02	13.10	23.92	13.41	0.31	.28486E+03
56.03	15.52	13.41	335.0	0.690E-02	13.09	24.03	13.41	0.32	.29558E+03
58.28	15.52	13.41	336.1	0.687E-02	13.07	24.14	13.41	0.34	.30630E+03
60.53	15.52	13.41	337.2	0.685E-02	13.06	24.24	13.41	0.35	.31701E+03
62.78	15.52	13.41	338.4	0.683E-02	13.05	24.35	13.41	0.36	.32773E+03
65.03	15.52	13.41	339.5	0.680E-02	13.04	24.45	13.41	0.37	.33845E+03
67.28	15.52	13.41	340.7	0.678E-02	13.02	24.56	13.41	0.39	.34916E+03
69.53	15.52	13.41	341.8	0.676E-02	13.01	24.66	13.41	0.40	.35988E+03
71.78	15.52	13.41	343.0	0.673E-02	13.00	24.77	13.41	0.41	.37059E+03
74.03	15.52	13.41	344.2	0.671E-02	12.99	24.87	13.41	0.42	.38131E+03
76.28	15.52	13.41	345.4	0.669E-02	12.98	24.97	13.41	0.43	.39203E+03
78.53	15.52	13.41	346.6	0.666E-02	12.97	25.08	13.41	0.44	.40274E+03
80.78	15.52	13.41	347.7	0.664E-02	12.96	25.18	13.41	0.45	.41346E+03
83.03	15.52	13.41	348.9	0.662E-02	12.96	25.29	13.41	0.45	.42418E+03
85.28	15.52	13.41	350.1	0.660E-02	12.95	25.39	13.41	0.46	.43489E+03
87.53	15.52	13.41	351.4	0.657E-02	12.94	25.49	13.41	0.47	.44561E+03
89.78	15.52	13.41	352.6	0.655E-02	12.93	25.59	13.41	0.48	.45633E+03
92.03	15.52	13.41	353.8	0.653E-02	12.93	25.70	13.41	0.49	.46704E+03
94.28	15.52	13.41	355.0	0.651E-02	12.92	25.80	13.41	0.49	.47776E+03



96.54	15.52	13.41	356.2	0.648E-02	12.91	25.90	13.41	0.50	.48848E+03
98.79	15.52	13.41	357.5	0.646E-02	12.91	26.00	13.41	0.50	.49919E+03
101.04	15.52	13.41	358.7	0.644E-02	12.90	26.10	13.41	0.51	.50991E+03
103.29	15.52	13.41	360.0	0.642E-02	12.90	26.21	13.41	0.51	.52063E+03
105.54	15.52	13.41	361.2	0.639E-02	12.89	26.31	13.41	0.52	.53134E+03
107.79	15.52	13.41	362.5	0.637E-02	12.89	26.41	13.41	0.52	.54206E+03
110.04	15.52	13.41	363.8	0.635E-02	12.88	26.51	13.41	0.53	.55278E+03
112.29	15.52	13.41	365.1	0.633E-02	12.88	26.61	13.41	0.53	.56349E+03
114.54	15.52	13.41	366.3	0.630E-02	12.88	26.71	13.41	0.54	.57421E+03
116.79	15.52	13.41	367.6	0.628E-02	12.87	26.81	13.41	0.54	.58493E+03
119.04	15.52	13.41	368.9	0.626E-02	12.87	26.91	13.41	0.54	.59564E+03
121.29	15.52	13.41	370.2	0.624E-02	12.87	27.01	13.41	0.54	.60636E+03
123.54	15.52	13.41	371.5	0.622E-02	12.87	27.11	13.41	0.55	.61708E+03
125.79	15.52	13.41	372.8	0.619E-02	12.86	27.21	13.41	0.55	.62779E+03
128.04	15.52	13.41	374.2	0.617E-02	12.86	27.31	13.41	0.55	.63851E+03

Cumulative travel time = 638.5093 sec ( 0.18 hrs)

END OF MOD241: BUOYANT AMBIENT SPREADING

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 Due to the attachment or proximity of the plume to the bottom, the bottom coordinate for the FAR-FIELD differs from the ambient depth, ZFB = 0 m.  
 In a subsequent analysis set "depth at discharge" equal to "ambient depth".  
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BEGIN MOD261: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT

Vertical diffusivity (initial value) = 0.357E-01 m<sup>2</sup>/s  
 Horizontal diffusivity (initial value) = 0.123E+00 m<sup>2</sup>/s

Profile definitions:

BV = Gaussian s.d.\*sqrt(pi/2) (46%) thickness, measured vertically  
 = or equal to layer depth, if fully mixed  
 BH = Gaussian s.d.\*sqrt(pi/2) (46%) half-width,  
 measured horizontally in Y-direction  
 ZU = upper plume boundary (Z-coordinate)  
 ZL = lower plume boundary (Z-coordinate)  
 S = hydrodynamic centerline dilution  
 C = centerline concentration (includes reaction effects, if any)  
 TT = Cumulative travel time

Plume Stage 1 (not bank attached):

X	Y	Z	S	C	BV	BH	ZU	ZL	TT
128.04	15.52	13.41	374.2	0.617E-02	12.86	27.31	13.41	0.55	.63851E+03
155.96	15.52	13.41	398.0	0.580E-02	13.22	28.26	13.41	0.19	.77146E+03

Plume interacts with BOTTOM.

The passive diffusion plume becomes VERTICALLY FULLY MIXED within this prediction interval.

183.88	15.52	13.41	417.4	0.553E-02	13.41	29.22	13.41	0.00	.90441E+03
211.80	15.52	13.41	431.2	0.535E-02	13.41	30.19	13.41	0.00	.10374E+04
239.72	15.52	13.41	445.2	0.519E-02	13.41	31.17	13.41	0.00	.11703E+04
267.64	15.52	13.41	459.4	0.503E-02	13.41	32.16	13.41	0.00	.13033E+04
295.56	15.52	13.41	473.7	0.487E-02	13.41	33.16	13.41	0.00	.14362E+04
323.48	15.52	13.41	488.2	0.473E-02	13.41	34.17	13.41	0.00	.15691E+04
351.40	15.52	13.41	502.7	0.459E-02	13.41	35.19	13.41	0.00	.17021E+04
379.31	15.52	13.41	517.5	0.446E-02	13.41	36.23	13.41	0.00	.18350E+04
407.23	15.52	13.41	532.4	0.434E-02	13.41	37.27	13.41	0.00	.19680E+04
435.15	15.52	13.41	547.4	0.422E-02	13.41	38.32	13.41	0.00	.21009E+04
463.07	15.52	13.41	562.5	0.410E-02	13.41	39.38	13.41	0.00	.22339E+04
490.99	15.52	13.41	577.8	0.399E-02	13.41	40.45	13.41	0.00	.23668E+04
518.91	15.52	13.41	593.3	0.389E-02	13.41	41.53	13.41	0.00	.24998E+04
546.83	15.52	13.41	608.8	0.379E-02	13.41	42.62	13.41	0.00	.26327E+04
574.75	15.52	13.41	624.5	0.369E-02	13.41	43.72	13.41	0.00	.27657E+04
602.67	15.52	13.41	640.3	0.360E-02	13.41	44.83	13.41	0.00	.28986E+04
630.59	15.52	13.41	656.3	0.352E-02	13.41	45.94	13.41	0.00	.30316E+04
658.51	15.52	13.41	672.4	0.343E-02	13.41	47.07	13.41	0.00	.31645E+04
686.43	15.52	13.41	688.6	0.335E-02	13.41	48.21	13.41	0.00	.32975E+04
714.34	15.52	13.41	705.0	0.327E-02	13.41	49.35	13.41	0.00	.34304E+04
742.26	15.52	13.41	721.4	0.320E-02	13.41	50.50	13.41	0.00	.35634E+04
770.18	15.52	13.41	738.0	0.312E-02	13.41	51.67	13.41	0.00	.36963E+04
798.10	15.52	13.41	754.8	0.306E-02	13.41	52.84	13.41	0.00	.38293E+04
826.02	15.52	13.41	771.6	0.299E-02	13.41	54.02	13.41	0.00	.39622E+04
853.94	15.52	13.41	788.6	0.292E-02	13.41	55.21	13.41	0.00	.40952E+04
881.86	15.52	13.41	805.7	0.286E-02	13.41	56.40	13.41	0.00	.42281E+04
909.78	15.52	13.41	822.9	0.280E-02	13.41	57.61	13.41	0.00	.43611E+04
937.70	15.52	13.41	840.3	0.274E-02	13.41	58.82	13.41	0.00	.44940E+04
965.62	15.52	13.41	857.7	0.269E-02	13.41	60.04	13.41	0.00	.46270E+04
993.54	15.52	13.41	875.3	0.263E-02	13.41	61.28	13.41	0.00	.47599E+04
1021.46	15.52	13.41	893.0	0.258E-02	13.41	62.51	13.41	0.00	.48929E+04
1049.37	15.52	13.41	910.8	0.253E-02	13.41	63.76	13.41	0.00	.50258E+04
1077.29	15.52	13.41	928.8	0.248E-02	13.41	65.02	13.41	0.00	.51588E+04
1105.21	15.52	13.41	946.8	0.243E-02	13.41	66.28	13.41	0.00	.52917E+04
1133.13	15.52	13.41	965.0	0.239E-02	13.41	67.55	13.41	0.00	.54247E+04





S = hydrodynamic dilutions, include buoyancy (heat) loss effects, but provided plume has surface contact  
 C = corresponding temperature values (in "deg.C") include heat loss, if any

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 BEGIN MOD201: DIFFUSER DISCHARGE MODULE

Due to complex near-field motions: EQUIVALENT SLOT DIFFUSER (2-D) GEOMETRY

Profile definitions:

BV = Gaussian 1/e (37%) width, in vertical plane normal to trajectory  
 BH = top-hat half-width, in horizontal plane normal to trajectory  
 S = hydrodynamic centerline dilution  
 C = centerline concentration (includes reaction effects, if any)  
 Uc = Local centerline excess velocity (above ambient)  
 TT = Cumulative travel time

X	Y	Z	S	C	BV	BH	Uc	TT
0.00	0.00	1.31	1.0	0.241E+01	0.01	21.95	1.062	.00000E+00

END OF MOD201: DIFFUSER DISCHARGE MODULE  
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BEGIN MOD271: ACCELERATION ZONE OF UNIDIRECTIONAL CO-FLOWING DIFFUSER

In this laterally contracting zone the diffuser plume becomes VERTICALLY FULLY MIXED over the entire layer depth (HS = 13.41m).  
 Full mixing is achieved after a plume distance of about five layer depths from the diffuser.

Profile definitions:

BV = layer depth (vertically mixed)  
 BH = top-hat half-width, in horizontal plane normal to trajectory  
 S = hydrodynamic average (bulk) dilution  
 C = average (bulk) concentration (includes reaction effects, if any)  
 TT = Cumulative travel time

X	Y	Z	S	C	BV	BH	TT
0.00	0.00	1.31	1.0	0.241E+01	0.01	21.95	.00000E+00
0.31	0.31	1.35	36.8	0.655E-01	0.27	21.93	.22978E+01
0.62	0.62	1.38	51.6	0.467E-01	0.54	21.91	.48204E+01
0.93	0.93	1.42	63.0	0.382E-01	0.80	21.90	.73926E+01
1.24	1.24	1.45	72.6	0.332E-01	1.07	21.88	.99911E+01
1.55	1.55	1.49	81.1	0.297E-01	1.34	21.87	.12606E+02
1.86	1.86	1.52	88.7	0.272E-01	1.61	21.85	.15234E+02
2.17	2.17	1.56	95.7	0.252E-01	1.88	21.84	.17871E+02
2.48	2.48	1.59	102.3	0.236E-01	2.15	21.83	.20515E+02
2.79	2.79	1.63	108.4	0.222E-01	2.41	21.82	.23164E+02
3.10	3.10	1.66	114.2	0.211E-01	2.68	21.81	.25819E+02
3.41	3.41	1.70	119.8	0.201E-01	2.95	21.80	.28479E+02
3.72	3.72	1.73	125.0	0.193E-01	3.22	21.79	.31141E+02
4.03	4.03	1.77	130.1	0.185E-01	3.49	21.78	.33808E+02
4.35	4.35	1.81	135.0	0.179E-01	3.76	21.77	.36477E+02
4.66	4.66	1.84	139.7	0.173E-01	4.02	21.76	.39148E+02
4.97	4.97	1.88	144.2	0.167E-01	4.29	21.76	.41822E+02
5.28	5.28	1.91	148.6	0.162E-01	4.56	21.75	.44498E+02
5.59	5.59	1.95	152.9	0.158E-01	4.83	21.74	.47176E+02
5.90	5.90	1.98	157.1	0.153E-01	5.10	21.74	.49856E+02
6.21	6.21	2.02	161.1	0.150E-01	5.36	21.73	.52538E+02
6.52	6.52	2.05	165.1	0.146E-01	5.63	21.72	.55221E+02
6.83	6.83	2.09	169.0	0.143E-01	5.90	21.72	.57905E+02
7.14	7.14	2.12	172.7	0.140E-01	6.17	21.71	.60591E+02
7.45	7.45	2.16	176.4	0.137E-01	6.44	21.71	.63278E+02
7.76	7.76	2.19	180.0	0.134E-01	6.71	21.70	.65966E+02
8.07	8.07	2.23	183.6	0.131E-01	6.97	21.70	.68655E+02
8.38	8.38	2.26	187.1	0.129E-01	7.24	21.69	.71345E+02
8.69	8.69	2.30	190.5	0.127E-01	7.51	21.69	.74036E+02
9.00	9.00	2.33	193.8	0.124E-01	7.78	21.68	.76728E+02
9.31	9.31	2.37	197.1	0.122E-01	8.05	21.68	.79421E+02
9.62	9.62	2.41	200.4	0.120E-01	8.31	21.68	.82115E+02
9.93	9.93	2.44	203.6	0.118E-01	8.58	21.67	.84810E+02
10.24	10.24	2.48	206.7	0.117E-01	8.85	21.67	.87505E+02
10.55	10.55	2.51	209.8	0.115E-01	9.12	21.67	.90201E+02
10.86	10.86	2.55	212.9	0.113E-01	9.39	21.66	.92898E+02
11.17	11.17	2.58	215.9	0.112E-01	9.66	21.66	.95595E+02
11.48	11.48	2.62	218.8	0.110E-01	9.92	21.66	.98293E+02
11.79	11.79	2.65	221.7	0.109E-01	10.19	21.66	.10099E+03
12.10	12.10	2.69	224.6	0.107E-01	10.46	21.66	.10369E+03
12.41	12.41	2.72	227.5	0.106E-01	10.73	21.65	.10639E+03
12.72	12.72	2.76	230.3	0.105E-01	11.00	21.65	.10909E+03
13.04	13.04	2.79	233.1	0.103E-01	11.27	21.65	.11179E+03

13.35	13.35	2.83	235.8	0.102E-01	11.53	21.65	.11449E+03
13.66	13.66	2.86	238.5	0.101E-01	11.80	21.65	.11720E+03
13.97	13.97	2.90	241.2	0.999E-02	12.07	21.65	.11990E+03
14.28	14.28	2.94	243.9	0.988E-02	12.34	21.65	.12260E+03
14.59	14.59	2.97	246.5	0.978E-02	12.61	21.65	.12530E+03
14.90	14.90	3.01	249.1	0.967E-02	12.87	21.65	.12801E+03
15.21	15.21	3.04	251.7	0.958E-02	13.14	21.65	.13071E+03
15.52	15.52	3.08	254.2	0.948E-02	13.41	21.65	.13342E+03

Cumulative travel time = 133.4153 sec ( 0.04 hrs)  
 Plume centerline may exhibit slight discontinuities in transition  
 to subsequent far-field module.

END OF MOD271: ACCELERATION ZONE OF UNIDIRECTIONAL CO-FLOWING DIFFUSER

BEGIN MOD251: DIFFUSER PLUME IN CO-FLOW

Phase 1: Vertically mixed, Phase 2: Re-stratified

Phase 2: The flow has RESTRATIFIED at the beginning of this zone.

This flow region is INSIGNIFICANT in spatial extent and will be by-passed.

END OF MOD251: DIFFUSER PLUME IN CO-FLOW

\*\* End of NEAR-FIELD REGION (NFR) \*\*

BEGIN MOD241: BUOYANT AMBIENT SPREADING

Profile definitions:

- BV = top-hat thickness, measured vertically
- BH = top-hat half-width, measured horizontally in y-direction
- ZU = upper plume boundary (Z-coordinate)
- ZL = lower plume boundary (Z-coordinate)
- S = hydrodynamic average (bulk) dilution
- C = average (bulk) concentration (includes reaction effects, if any)
- TT = Cumulative travel time

Plume Stage 1 (not bank attached):

X	Y	Z	S	C	BV	BH	ZU	ZL	TT
15.52	15.52	13.41	254.2	0.948E-02	13.41	22.16	13.41	0.00	.13342E+03
29.92	15.52	13.41	258.8	0.931E-02	13.04	23.21	13.41	0.37	.22345E+03
44.33	15.52	13.41	263.3	0.915E-02	12.71	24.23	13.41	0.71	.31349E+03
58.74	15.52	13.41	267.9	0.900E-02	12.41	25.23	13.41	1.00	.40353E+03
73.14	15.52	13.41	272.5	0.884E-02	12.16	26.21	13.41	1.26	.49357E+03

\*\* REGULATORY MIXING ZONE BOUNDARY \*\*

In this prediction interval the plume DOWNSTREAM distance meets or exceeds  
 the regulatory value = 73.76 m.

This is the extent of the REGULATORY MIXING ZONE.

87.55	15.52	13.41	277.2	0.869E-02	11.93	27.17	13.41	1.48	.58361E+03
101.95	15.52	13.41	281.9	0.855E-02	11.72	28.12	13.41	1.69	.67364E+03
116.36	15.52	13.41	286.8	0.840E-02	11.54	29.05	13.41	1.87	.76368E+03
130.77	15.52	13.41	291.7	0.826E-02	11.38	29.97	13.41	2.03	.85372E+03
145.17	15.52	13.41	296.8	0.812E-02	11.24	30.87	13.41	2.17	.94376E+03
159.58	15.52	13.41	301.9	0.798E-02	11.12	31.76	13.41	2.30	.10338E+04
173.98	15.52	13.41	307.2	0.784E-02	11.01	32.63	13.41	2.41	.11238E+04
188.39	15.52	13.41	312.6	0.771E-02	10.91	33.50	13.41	2.50	.12139E+04
202.80	15.52	13.41	318.1	0.757E-02	10.83	34.35	13.41	2.58	.13039E+04
217.20	15.52	13.41	323.8	0.744E-02	10.76	35.20	13.41	2.65	.13939E+04
231.61	15.52	13.41	329.7	0.731E-02	10.70	36.03	13.41	2.71	.14840E+04
246.02	15.52	13.41	335.6	0.718E-02	10.65	36.85	13.41	2.76	.15740E+04
260.42	15.52	13.41	341.8	0.705E-02	10.61	37.67	13.41	2.80	.16641E+04
274.83	15.52	13.41	348.1	0.692E-02	10.58	38.47	13.41	2.83	.17541E+04
289.23	15.52	13.41	354.6	0.679E-02	10.56	39.27	13.41	2.85	.18441E+04
303.64	15.52	13.41	361.2	0.667E-02	10.54	40.06	13.41	2.87	.19342E+04
318.05	15.52	13.41	368.0	0.654E-02	10.54	40.84	13.41	2.88	.20242E+04
332.45	15.52	13.41	375.0	0.642E-02	10.54	41.62	13.41	2.87	.21143E+04
346.86	15.52	13.41	382.2	0.630E-02	10.54	42.38	13.41	2.87	.22043E+04
361.26	15.52	13.41	389.6	0.618E-02	10.56	43.14	13.41	2.85	.22943E+04
375.67	15.52	13.41	397.1	0.606E-02	10.58	43.90	13.41	2.83	.23844E+04
390.08	15.52	13.41	404.9	0.595E-02	10.60	44.64	13.41	2.81	.24744E+04
404.48	15.52	13.41	412.8	0.583E-02	10.64	45.38	13.41	2.78	.25644E+04
418.89	15.52	13.41	421.0	0.572E-02	10.67	46.12	13.41	2.74	.26545E+04
433.29	15.52	13.41	429.3	0.561E-02	10.72	46.85	13.41	2.70	.27445E+04
447.70	15.52	13.41	437.9	0.550E-02	10.76	47.57	13.41	2.65	.28346E+04
462.11	15.52	13.41	446.7	0.539E-02	10.82	48.29	13.41	2.60	.29246E+04
476.51	15.52	13.41	455.6	0.528E-02	10.87	49.00	13.41	2.54	.30146E+04
490.92	15.52	13.41	464.8	0.518E-02	10.93	49.71	13.41	2.48	.31047E+04
505.33	15.52	13.41	474.2	0.508E-02	11.00	50.41	13.41	2.41	.31947E+04
519.73	15.52	13.41	483.8	0.497E-02	11.07	51.11	13.41	2.34	.32847E+04

534.14	15.52	13.41	493.7	0.487E-02	11.14	51.80	13.41	2.27	.33748E+04
548.54	15.52	13.41	503.7	0.478E-02	11.22	52.49	13.41	2.19	.34648E+04
562.95	15.52	13.41	514.0	0.468E-02	11.30	53.17	13.41	2.11	.35549E+04
577.36	15.52	13.41	524.5	0.459E-02	11.39	53.85	13.41	2.02	.36449E+04
591.76	15.52	13.41	535.2	0.450E-02	11.48	54.53	13.41	1.93	.37349E+04
606.17	15.52	13.41	546.2	0.441E-02	11.57	55.20	13.41	1.84	.38250E+04
620.57	15.52	13.41	557.4	0.432E-02	11.67	55.86	13.41	1.74	.39150E+04
634.98	15.52	13.41	568.8	0.423E-02	11.77	56.52	13.41	1.64	.40051E+04
649.39	15.52	13.41	580.5	0.414E-02	11.87	57.18	13.41	1.54	.40951E+04
663.79	15.52	13.41	592.4	0.406E-02	11.98	57.84	13.41	1.44	.41851E+04
678.20	15.52	13.41	604.6	0.398E-02	12.09	58.49	13.41	1.33	.42752E+04
692.60	15.52	13.41	616.9	0.390E-02	12.20	59.14	13.41	1.21	.43652E+04
707.01	15.52	13.41	629.6	0.382E-02	12.31	59.78	13.41	1.10	.44552E+04
721.42	15.52	13.41	642.4	0.374E-02	12.43	60.42	13.41	0.98	.45453E+04
735.82	15.52	13.41	655.6	0.367E-02	12.55	61.06	13.41	0.86	.46353E+04

Cumulative travel time = 4635.3193 sec ( 1.29 hrs)

END OF MOD241: BUOYANT AMBIENT SPREADING

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 Due to the attachment or proximity of the plume to the bottom, the bottom coordinate for the FAR-FIELD differs from the ambient depth, ZFB = 0 m.  
 In a subsequent analysis set "depth at discharge" equal to "ambient depth".  
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BEGIN MOD261: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT

Vertical diffusivity (initial value) = 0.274E-01 m<sup>2</sup>/s  
 Horizontal diffusivity (initial value) = 0.361E+00 m<sup>2</sup>/s

Profile definitions:

BV = Gaussian s.d.\*sqrt(pi/2) (46%) thickness, measured vertically  
 = or equal to layer depth, if fully mixed  
 BH = Gaussian s.d.\*sqrt(pi/2) (46%) half-width,  
 measured horizontally in Y-direction  
 ZU = upper plume boundary (Z-coordinate)  
 ZL = lower plume boundary (Z-coordinate)  
 S = hydrodynamic centerline dilution  
 C = centerline concentration (includes reaction effects, if any)  
 TT = Cumulative travel time

Plume Stage 1 (not bank attached):

X	Y	Z	S	C	BV	BH	ZU	ZL	TT
735.82	15.52	13.41	655.6	0.367E-02	12.55	61.06	13.41	0.86	.46353E+04
751.59	15.52	13.41	676.3	0.356E-02	12.76	61.98	13.41	0.65	.47338E+04
767.35	15.52	13.41	697.4	0.345E-02	12.96	62.90	13.41	0.45	.48324E+04
783.11	15.52	13.41	718.8	0.335E-02	13.17	63.82	13.41	0.24	.49309E+04
798.88	15.52	13.41	740.6	0.325E-02	13.37	64.75	13.41	0.04	.50294E+04

Plume interacts with BOTTOM.

The passive diffusion plume becomes VERTICALLY FULLY MIXED within this prediction interval.

814.64	15.52	13.41	753.4	0.319E-02	13.41	65.69	13.41	0.00	.51279E+04
830.40	15.52	13.41	764.2	0.315E-02	13.41	66.62	13.41	0.00	.52265E+04
846.17	15.52	13.41	775.0	0.310E-02	13.41	67.57	13.41	0.00	.53250E+04
861.93	15.52	13.41	785.9	0.306E-02	13.41	68.52	13.41	0.00	.54235E+04
877.69	15.52	13.41	796.8	0.302E-02	13.41	69.47	13.41	0.00	.55220E+04
893.46	15.52	13.41	807.8	0.298E-02	13.41	70.42	13.41	0.00	.56205E+04
909.22	15.52	13.41	818.8	0.294E-02	13.41	71.38	13.41	0.00	.57191E+04
924.98	15.52	13.41	829.8	0.290E-02	13.41	72.35	13.41	0.00	.58176E+04
940.75	15.52	13.41	841.0	0.286E-02	13.41	73.32	13.41	0.00	.59161E+04
956.51	15.52	13.41	852.1	0.282E-02	13.41	74.29	13.41	0.00	.60146E+04
972.28	15.52	13.41	863.4	0.278E-02	13.41	75.27	13.41	0.00	.61132E+04
988.04	15.52	13.41	874.6	0.275E-02	13.41	76.25	13.41	0.00	.62117E+04
1003.80	15.52	13.41	885.9	0.271E-02	13.41	77.24	13.41	0.00	.63102E+04
1019.57	15.52	13.41	897.3	0.268E-02	13.41	78.23	13.41	0.00	.64087E+04
1035.33	15.52	13.41	908.7	0.264E-02	13.41	79.23	13.41	0.00	.65072E+04
1051.09	15.52	13.41	920.2	0.261E-02	13.41	80.22	13.41	0.00	.66058E+04
1066.86	15.52	13.41	931.7	0.258E-02	13.41	81.23	13.41	0.00	.67043E+04
1082.62	15.52	13.41	943.2	0.255E-02	13.41	82.24	13.41	0.00	.68028E+04
1098.38	15.52	13.41	954.8	0.252E-02	13.41	83.25	13.41	0.00	.69013E+04
1114.15	15.52	13.41	966.5	0.249E-02	13.41	84.26	13.41	0.00	.69999E+04
1129.91	15.52	13.41	978.2	0.246E-02	13.41	85.28	13.41	0.00	.70984E+04
1145.67	15.52	13.41	989.9	0.243E-02	13.41	86.31	13.41	0.00	.71969E+04
1161.44	15.52	13.41	1001.7	0.240E-02	13.41	87.33	13.41	0.00	.72954E+04
1177.20	15.52	13.41	1013.6	0.237E-02	13.41	88.37	13.41	0.00	.73939E+04
1192.97	15.52	13.41	1025.4	0.234E-02	13.41	89.40	13.41	0.00	.74925E+04
1208.73	15.52	13.41	1037.4	0.232E-02	13.41	90.44	13.41	0.00	.75910E+04
1224.49	15.52	13.41	1049.3	0.229E-02	13.41	91.49	13.41	0.00	.76895E+04
1240.26	15.52	13.41	1061.4	0.226E-02	13.41	92.53	13.41	0.00	.77880E+04
1256.02	15.52	13.41	1073.4	0.224E-02	13.41	93.59	13.41	0.00	.78865E+04
1271.78	15.52	13.41	1085.5	0.221E-02	13.41	94.64	13.41	0.00	.79851E+04
1287.55	15.52	13.41	1097.7	0.219E-02	13.41	95.70	13.41	0.00	.80836E+04
1303.31	15.52	13.41	1109.9	0.216E-02	13.41	96.77	13.41	0.00	.81821E+04







S = hydrodynamic dilutions, include buoyancy (heat) loss effects, but provided plume has surface contact  
 C = corresponding temperature values (in "deg.C") include heat loss, if any

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 BEGIN MOD201: DIFFUSER DISCHARGE MODULE

Due to complex near-field motions: EQUIVALENT SLOT DIFFUSER (2-D) GEOMETRY

Profile definitions:

BV = Gaussian 1/e (37%) width, in vertical plane normal to trajectory  
 BH = top-hat half-width, in horizontal plane normal to trajectory  
 S = hydrodynamic centerline dilution  
 C = centerline concentration (includes reaction effects, if any)  
 Uc = Local centerline excess velocity (above ambient)  
 TT = Cumulative travel time

X	Y	Z	S	C	BV	BH	Uc	TT
0.00	0.00	1.31	1.0	0.212E+01	0.00	21.95	0.707	.00000E+00

END OF MOD201: DIFFUSER DISCHARGE MODULE  
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BEGIN MOD271: ACCELERATION ZONE OF UNIDIRECTIONAL CO-FLOWING DIFFUSER

In this laterally contracting zone the diffuser plume becomes VERTICALLY FULLY MIXED over the entire layer depth (HS = 13.41m).  
 Full mixing is achieved after a plume distance of about five layer depths from the diffuser.

Profile definitions:

BV = layer depth (vertically mixed)  
 BH = top-hat half-width, in horizontal plane normal to trajectory  
 S = hydrodynamic average (bulk) dilution  
 C = average (bulk) concentration (includes reaction effects, if any)  
 TT = Cumulative travel time

X	Y	Z	S	C	BV	BH	TT
0.00	0.00	1.31	1.0	0.212E+01	0.00	21.95	.00000E+00
0.31	0.31	1.35	150.3	0.141E-01	0.27	21.94	.86678E+00
0.62	0.62	1.38	212.2	0.999E-02	0.54	21.94	.17399E+01
0.93	0.93	1.42	259.6	0.817E-02	0.80	21.94	.26142E+01
1.24	1.24	1.45	299.7	0.707E-02	1.07	21.94	.34890E+01
1.55	1.55	1.49	334.9	0.633E-02	1.34	21.94	.43642E+01
1.86	1.86	1.52	366.8	0.578E-02	1.61	21.94	.52396E+01
2.17	2.17	1.56	396.1	0.535E-02	1.88	21.94	.61152E+01
2.48	2.48	1.59	423.4	0.501E-02	2.15	21.94	.69910E+01
2.79	2.79	1.63	449.0	0.472E-02	2.41	21.94	.78669E+01
3.10	3.10	1.66	473.2	0.448E-02	2.68	21.94	.87429E+01
3.41	3.41	1.70	496.3	0.427E-02	2.95	21.94	.96190E+01
3.72	3.72	1.73	518.3	0.409E-02	3.22	21.94	.10495E+02
4.03	4.03	1.77	539.4	0.393E-02	3.49	21.93	.11371E+02
4.35	4.35	1.81	559.7	0.379E-02	3.76	21.93	.12248E+02
4.66	4.66	1.84	579.3	0.366E-02	4.02	21.93	.13124E+02
4.97	4.97	1.88	598.3	0.354E-02	4.29	21.93	.14000E+02
5.28	5.28	1.91	616.7	0.344E-02	4.56	21.93	.14877E+02
5.59	5.59	1.95	634.5	0.334E-02	4.83	21.93	.15753E+02
5.90	5.90	1.98	651.9	0.325E-02	5.10	21.93	.16630E+02
6.21	6.21	2.02	668.8	0.317E-02	5.36	21.93	.17506E+02
6.52	6.52	2.05	685.3	0.309E-02	5.63	21.93	.18383E+02
6.83	6.83	2.09	701.4	0.302E-02	5.90	21.93	.19260E+02
7.14	7.14	2.12	717.2	0.296E-02	6.17	21.93	.20136E+02

\*\* REGULATORY MIXING ZONE BOUNDARY is within the Near-Field Region \*\*

In this prediction interval the plume DOWNSTREAM distance meets or exceeds the regulatory value = 7.38 m.

This is the extent of the REGULATORY MIXING ZONE.

7.45	7.45	2.16	732.6	0.289E-02	6.44	21.93	.21013E+02
7.76	7.76	2.19	747.6	0.284E-02	6.71	21.93	.21890E+02
8.07	8.07	2.23	762.4	0.278E-02	6.97	21.93	.22766E+02
8.38	8.38	2.26	776.9	0.273E-02	7.24	21.93	.23643E+02
8.69	8.69	2.30	791.2	0.268E-02	7.51	21.93	.24520E+02
9.00	9.00	2.33	805.2	0.263E-02	7.78	21.93	.25397E+02
9.31	9.31	2.37	818.9	0.259E-02	8.05	21.93	.26273E+02
9.62	9.62	2.41	832.4	0.255E-02	8.31	21.93	.27150E+02
9.93	9.93	2.44	845.7	0.251E-02	8.58	21.93	.28027E+02
10.24	10.24	2.48	858.8	0.247E-02	8.85	21.93	.28904E+02
10.55	10.55	2.51	871.7	0.243E-02	9.12	21.93	.29781E+02
10.86	10.86	2.55	884.4	0.240E-02	9.39	21.93	.30657E+02
11.17	11.17	2.58	897.0	0.236E-02	9.66	21.93	.31534E+02
11.48	11.48	2.62	909.3	0.233E-02	9.92	21.93	.32411E+02
11.79	11.79	2.65	921.5	0.230E-02	10.19	21.93	.33288E+02

12.10	12.10	2.69	933.6	0.227E-02	10.46	21.93	.34165E+02
12.41	12.41	2.72	945.4	0.224E-02	10.73	21.93	.35042E+02
12.72	12.72	2.76	957.2	0.221E-02	11.00	21.93	.35919E+02
13.04	13.04	2.79	968.8	0.219E-02	11.27	21.93	.36796E+02
13.35	13.35	2.83	980.2	0.216E-02	11.53	21.93	.37673E+02
13.66	13.66	2.86	991.5	0.214E-02	11.80	21.93	.38550E+02
13.97	13.97	2.90	1002.7	0.211E-02	12.07	21.93	.39427E+02
14.28	14.28	2.94	1013.8	0.209E-02	12.34	21.93	.40304E+02
14.59	14.59	2.97	1024.7	0.207E-02	12.61	21.93	.41181E+02
14.90	14.90	3.01	1035.6	0.205E-02	12.87	21.93	.42058E+02
15.21	15.21	3.04	1046.3	0.203E-02	13.14	21.93	.42935E+02
15.52	15.52	3.08	1056.9	0.201E-02	13.41	21.93	.43812E+02

Cumulative travel time = 43.8118 sec ( 0.01 hrs)

Plume centerline may exhibit slight discontinuities in transition to subsequent far-field module.

END OF MOD271: ACCELERATION ZONE OF UNIDIRECTIONAL CO-FLOWING DIFFUSER

BEGIN MOD251: DIFFUSER PLUME IN CO-FLOW

Phase 1: Vertically mixed, Phase 2: Re-stratified

Phase 2: The flow has RESTRATIFIED at the beginning of this zone.

This flow region is INSIGNIFICANT in spatial extent and will be by-passed.

END OF MOD251: DIFFUSER PLUME IN CO-FLOW

\*\* End of NEAR-FIELD REGION (NFR) \*\*

BEGIN MOD241: BUOYANT AMBIENT SPREADING

Discharge is non-buoyant or weakly buoyant.  
Therefore BUOYANT SPREADING REGIME is ABSENT.

END OF MOD241: BUOYANT AMBIENT SPREADING

Due to the attachment or proximity of the plume to the bottom, the bottom coordinate for the FAR-FIELD differs from the ambient depth, ZFB = 0 m.  
In a subsequent analysis set "depth at discharge" equal to "ambient depth".

BEGIN MOD261: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT

Vertical diffusivity (initial value) = 0.846E-01 m<sup>2</sup>/s  
Horizontal diffusivity (initial value) = 0.922E-01 m<sup>2</sup>/s

Profile definitions:

BV = Gaussian s.d.\*sqrt(pi/2) (46%) thickness, measured vertically  
= or equal to layer depth, if fully mixed  
BH = Gaussian s.d.\*sqrt(pi/2) (46%) half-width,  
measured horizontally in Y-direction  
ZU = upper plume boundary (Z-coordinate)  
ZL = lower plume boundary (Z-coordinate)  
S = hydrodynamic centerline dilution  
C = centerline concentration (includes reaction effects, if any)  
TT = Cumulative travel time

Plume Stage 1 (not bank attached):

X	Y	Z	C	BV	BH	ZU	ZL	TT	
15.52	15.52	13.41	1056.9	0.201E-02	13.41	21.96	13.41	0.00	.43812E+02

Plume interacts with BOTTOM.

The passive diffusion plume becomes VERTICALLY FULLY MIXED within this prediction interval.

45.69	15.52	13.41	1076.1	0.197E-02	13.41	22.36	13.41	0.00	.10415E+03
75.86	15.52	13.41	1095.5	0.194E-02	13.41	22.76	13.41	0.00	.16449E+03
106.03	15.52	13.41	1114.9	0.190E-02	13.41	23.16	13.41	0.00	.22483E+03
136.20	15.52	13.41	1134.5	0.187E-02	13.41	23.57	13.41	0.00	.28517E+03
166.37	15.52	13.41	1154.1	0.184E-02	13.41	23.98	13.41	0.00	.34551E+03
196.54	15.52	13.41	1173.9	0.181E-02	13.41	24.39	13.41	0.00	.40585E+03
226.71	15.52	13.41	1193.8	0.178E-02	13.41	24.80	13.41	0.00	.46619E+03
256.88	15.52	13.41	1213.8	0.175E-02	13.41	25.22	13.41	0.00	.52653E+03
287.04	15.52	13.41	1234.0	0.172E-02	13.41	25.64	13.41	0.00	.58687E+03
317.21	15.52	13.41	1254.2	0.169E-02	13.41	26.06	13.41	0.00	.64720E+03
347.38	15.52	13.41	1274.5	0.166E-02	13.41	26.48	13.41	0.00	.70754E+03
377.55	15.52	13.41	1295.0	0.164E-02	13.41	26.91	13.41	0.00	.76788E+03
407.72	15.52	13.41	1315.5	0.161E-02	13.41	27.33	13.41	0.00	.82822E+03
437.89	15.52	13.41	1336.2	0.159E-02	13.41	27.76	13.41	0.00	.88856E+03
468.06	15.52	13.41	1357.0	0.156E-02	13.41	28.19	13.41	0.00	.94890E+03
498.23	15.52	13.41	1377.9	0.154E-02	13.41	28.63	13.41	0.00	.10092E+04





S = hydrodynamic dilutions, include buoyancy (heat) loss effects, but provided plume has surface contact  
 C = corresponding temperature values (in "deg.C") include heat loss, if any

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 BEGIN MOD201: DIFFUSER DISCHARGE MODULE

Due to complex near-field motions: EQUIVALENT SLOT DIFFUSER (2-D) GEOMETRY

Profile definitions:

BV = Gaussian 1/e (37%) width, in vertical plane normal to trajectory  
 BH = top-hat half-width, in horizontal plane normal to trajectory  
 S = hydrodynamic centerline dilution  
 C = centerline concentration (includes reaction effects, if any)  
 Uc = Local centerline excess velocity (above ambient)  
 TT = Cumulative travel time

X	Y	Z	S	C	BV	BH	Uc	TT
0.00	0.00	1.31	1.0	0.234E+01	0.01	21.95	1.078	.00000E+00

END OF MOD201: DIFFUSER DISCHARGE MODULE  
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BEGIN MOD271: ACCELERATION ZONE OF UNIDIRECTIONAL CO-FLOWING DIFFUSER

In this laterally contracting zone the diffuser plume becomes VERTICALLY FULLY MIXED over the entire layer depth (HS = 13.41m).  
 Full mixing is achieved after a plume distance of about five layer depths from the diffuser.

Profile definitions:

BV = layer depth (vertically mixed)  
 BH = top-hat half-width, in horizontal plane normal to trajectory  
 S = hydrodynamic average (bulk) dilution  
 C = average (bulk) concentration (includes reaction effects, if any)  
 TT = Cumulative travel time

X	Y	Z	S	C	BV	BH	TT
0.00	0.00	1.31	1.0	0.234E+01	0.01	21.95	.00000E+00
0.31	0.31	1.35	45.0	0.520E-01	0.27	21.93	.18574E+01
0.62	0.62	1.38	63.2	0.370E-01	0.54	21.92	.38380E+01
0.93	0.93	1.42	77.2	0.303E-01	0.80	21.91	.58436E+01
1.24	1.24	1.45	89.0	0.263E-01	1.07	21.90	.78624E+01
1.55	1.55	1.49	99.4	0.236E-01	1.34	21.90	.98895E+01
1.86	1.86	1.52	108.7	0.215E-01	1.61	21.89	.11923E+02
2.17	2.17	1.56	117.4	0.199E-01	1.88	21.88	.13960E+02
2.48	2.48	1.59	125.4	0.187E-01	2.15	21.87	.16002E+02
2.79	2.79	1.63	133.0	0.176E-01	2.41	21.86	.18046E+02
3.10	3.10	1.66	140.1	0.167E-01	2.68	21.86	.20093E+02
3.41	3.41	1.70	146.9	0.159E-01	2.95	21.85	.22141E+02
3.72	3.72	1.73	153.4	0.153E-01	3.22	21.84	.24192E+02
4.03	4.03	1.77	159.6	0.147E-01	3.49	21.84	.26244E+02
4.35	4.35	1.81	165.6	0.141E-01	3.76	21.83	.28298E+02
4.66	4.66	1.84	171.4	0.137E-01	4.02	21.83	.30353E+02
4.97	4.97	1.88	176.9	0.132E-01	4.29	21.82	.32409E+02
5.28	5.28	1.91	182.4	0.128E-01	4.56	21.82	.34466E+02
5.59	5.59	1.95	187.6	0.125E-01	4.83	21.81	.36524E+02
5.90	5.90	1.98	192.7	0.121E-01	5.10	21.81	.38583E+02
6.21	6.21	2.02	197.7	0.118E-01	5.36	21.81	.40643E+02
6.52	6.52	2.05	202.6	0.116E-01	5.63	21.80	.42704E+02
6.83	6.83	2.09	207.3	0.113E-01	5.90	21.80	.44765E+02
7.14	7.14	2.12	211.9	0.110E-01	6.17	21.79	.46827E+02

\*\* REGULATORY MIXING ZONE BOUNDARY is within the Near-Field Region \*\*

In this prediction interval the plume DOWNSTREAM distance meets or exceeds the regulatory value = 7.38 m.

This is the extent of the REGULATORY MIXING ZONE.

7.45	7.45	2.16	216.5	0.108E-01	6.44	21.79	.48889E+02
7.76	7.76	2.19	220.9	0.106E-01	6.71	21.79	.50952E+02
8.07	8.07	2.23	225.3	0.104E-01	6.97	21.78	.53016E+02
8.38	8.38	2.26	229.6	0.102E-01	7.24	21.78	.55080E+02
8.69	8.69	2.30	233.7	0.100E-01	7.51	21.78	.57144E+02
9.00	9.00	2.33	237.9	0.984E-02	7.78	21.78	.59209E+02
9.31	9.31	2.37	241.9	0.967E-02	8.05	21.77	.61275E+02
9.62	9.62	2.41	245.9	0.952E-02	8.31	21.77	.63341E+02
9.93	9.93	2.44	249.8	0.937E-02	8.58	21.77	.65407E+02
10.24	10.24	2.48	253.7	0.922E-02	8.85	21.77	.67473E+02
10.55	10.55	2.51	257.5	0.909E-02	9.12	21.76	.69540E+02
10.86	10.86	2.55	261.2	0.896E-02	9.39	21.76	.71608E+02
11.17	11.17	2.58	264.9	0.883E-02	9.66	21.76	.73675E+02
11.48	11.48	2.62	268.6	0.871E-02	9.92	21.76	.75743E+02
11.79	11.79	2.65	272.1	0.860E-02	10.19	21.76	.77811E+02

12.10	12.10	2.69	275.7	0.849E-02	10.46	21.76	.79880E+02
12.41	12.41	2.72	279.2	0.838E-02	10.73	21.76	.81949E+02
12.72	12.72	2.76	282.6	0.828E-02	11.00	21.76	.84018E+02
13.04	13.04	2.79	286.1	0.818E-02	11.27	21.75	.86087E+02
13.35	13.35	2.83	289.4	0.808E-02	11.53	21.75	.88157E+02
13.66	13.66	2.86	292.8	0.799E-02	11.80	21.75	.90226E+02
13.97	13.97	2.90	296.1	0.790E-02	12.07	21.75	.92296E+02
14.28	14.28	2.94	299.3	0.782E-02	12.34	21.75	.94367E+02
14.59	14.59	2.97	302.5	0.773E-02	12.61	21.75	.96437E+02
14.90	14.90	3.01	305.7	0.765E-02	12.87	21.75	.98508E+02
15.21	15.21	3.04	308.9	0.758E-02	13.14	21.75	.10058E+03
15.52	15.52	3.08	312.0	0.750E-02	13.41	21.75	.10265E+03

Cumulative travel time = 102.6495 sec ( 0.03 hrs)

Plume centerline may exhibit slight discontinuities in transition to subsequent far-field module.

END OF MOD271: ACCELERATION ZONE OF UNIDIRECTIONAL CO-FLOWING DIFFUSER

BEGIN MOD251: DIFFUSER PLUME IN CO-FLOW

Phase 1: Vertically mixed, Phase 2: Re-stratified

Phase 2: The flow has RESTRATIFIED at the beginning of this zone.

This flow region is INSIGNIFICANT in spatial extent and will be by-passed.

END OF MOD251: DIFFUSER PLUME IN CO-FLOW

\*\* End of NEAR-FIELD REGION (NFR) \*\*

BEGIN MOD241: BUOYANT AMBIENT SPREADING

Profile definitions:

BV = top-hat thickness, measured vertically  
 BH = top-hat half-width, measured horizontally in y-direction  
 ZU = upper plume boundary (Z-coordinate)  
 ZL = lower plume boundary (Z-coordinate)  
 S = hydrodynamic average (bulk) dilution  
 C = average (bulk) concentration (includes reaction effects, if any)  
 TT = Cumulative travel time

Plume Stage 1 (not bank attached):

X	Y	Z	S	C	BV	BH	ZU	ZL	TT
15.52	15.52	13.41	312.0	0.750E-02	13.41	22.09	13.41	0.00	.10265E+03
17.11	15.52	13.41	312.7	0.748E-02	13.39	22.16	13.41	0.02	.11023E+03
18.70	15.52	13.41	313.5	0.746E-02	13.38	22.24	13.41	0.03	.11782E+03
20.30	15.52	13.41	314.2	0.745E-02	13.36	22.32	13.41	0.05	.12540E+03
21.89	15.52	13.41	314.9	0.743E-02	13.35	22.40	13.41	0.06	.13298E+03
23.48	15.52	13.41	315.7	0.741E-02	13.33	22.48	13.41	0.08	.14056E+03
25.07	15.52	13.41	316.4	0.740E-02	13.32	22.56	13.41	0.10	.14815E+03
26.67	15.52	13.41	317.1	0.738E-02	13.30	22.63	13.41	0.11	.15573E+03
28.26	15.52	13.41	317.9	0.736E-02	13.29	22.71	13.41	0.13	.16331E+03
29.85	15.52	13.41	318.6	0.734E-02	13.27	22.79	13.41	0.14	.17090E+03
31.44	15.52	13.41	319.4	0.733E-02	13.26	22.87	13.41	0.15	.17848E+03
33.03	15.52	13.41	320.1	0.731E-02	13.24	22.94	13.41	0.17	.18606E+03
34.63	15.52	13.41	320.9	0.729E-02	13.23	23.02	13.41	0.18	.19365E+03
36.22	15.52	13.41	321.6	0.728E-02	13.22	23.10	13.41	0.19	.20123E+03
37.81	15.52	13.41	322.4	0.726E-02	13.20	23.18	13.41	0.21	.20881E+03
39.40	15.52	13.41	323.1	0.724E-02	13.19	23.25	13.41	0.22	.21640E+03
41.00	15.52	13.41	323.9	0.722E-02	13.18	23.33	13.41	0.23	.22398E+03
42.59	15.52	13.41	324.6	0.721E-02	13.17	23.41	13.41	0.24	.23156E+03
44.18	15.52	13.41	325.4	0.719E-02	13.15	23.48	13.41	0.26	.23915E+03
45.77	15.52	13.41	326.2	0.717E-02	13.14	23.56	13.41	0.27	.24673E+03
47.37	15.52	13.41	326.9	0.716E-02	13.13	23.64	13.41	0.28	.25431E+03
48.96	15.52	13.41	327.7	0.714E-02	13.12	23.71	13.41	0.29	.26189E+03
50.55	15.52	13.41	328.5	0.712E-02	13.11	23.79	13.41	0.30	.26948E+03
52.14	15.52	13.41	329.3	0.711E-02	13.10	23.86	13.41	0.31	.27706E+03
53.74	15.52	13.41	330.0	0.709E-02	13.09	23.94	13.41	0.32	.28464E+03
55.33	15.52	13.41	330.8	0.707E-02	13.08	24.01	13.41	0.33	.29223E+03
56.92	15.52	13.41	331.6	0.706E-02	13.07	24.09	13.41	0.34	.29981E+03
58.51	15.52	13.41	332.4	0.704E-02	13.06	24.17	13.41	0.35	.30739E+03
60.11	15.52	13.41	333.2	0.702E-02	13.05	24.24	13.41	0.36	.31498E+03
61.70	15.52	13.41	334.0	0.701E-02	13.04	24.32	13.41	0.37	.32256E+03
63.29	15.52	13.41	334.8	0.699E-02	13.03	24.39	13.41	0.38	.33014E+03
64.88	15.52	13.41	335.6	0.697E-02	13.02	24.47	13.41	0.39	.33773E+03
66.48	15.52	13.41	336.4	0.696E-02	13.01	24.54	13.41	0.40	.34531E+03
68.07	15.52	13.41	337.2	0.694E-02	13.00	24.62	13.41	0.41	.35289E+03
69.66	15.52	13.41	338.0	0.692E-02	13.00	24.69	13.41	0.42	.36047E+03
71.25	15.52	13.41	338.8	0.691E-02	12.99	24.76	13.41	0.42	.36806E+03

72.85	15.52	13.41	339.6	0.689E-02	12.98	24.84	13.41	0.43	.37564E+03
74.44	15.52	13.41	340.4	0.687E-02	12.97	24.91	13.41	0.44	.38322E+03
76.03	15.52	13.41	341.3	0.686E-02	12.96	24.99	13.41	0.45	.39081E+03
77.62	15.52	13.41	342.1	0.684E-02	12.96	25.06	13.41	0.45	.39839E+03
79.22	15.52	13.41	342.9	0.682E-02	12.95	25.14	13.41	0.46	.40597E+03
80.81	15.52	13.41	343.7	0.681E-02	12.94	25.21	13.41	0.47	.41356E+03
82.40	15.52	13.41	344.6	0.679E-02	12.94	25.28	13.41	0.47	.42114E+03
83.99	15.52	13.41	345.4	0.677E-02	12.93	25.36	13.41	0.48	.42872E+03
85.59	15.52	13.41	346.2	0.676E-02	12.92	25.43	13.41	0.49	.43631E+03
87.18	15.52	13.41	347.1	0.674E-02	12.92	25.50	13.41	0.49	.44389E+03
88.77	15.52	13.41	347.9	0.672E-02	12.91	25.58	13.41	0.50	.45147E+03
90.36	15.52	13.41	348.8	0.671E-02	12.91	25.65	13.41	0.50	.45906E+03
91.96	15.52	13.41	349.6	0.669E-02	12.90	25.72	13.41	0.51	.46664E+03
93.55	15.52	13.41	350.5	0.668E-02	12.90	25.80	13.41	0.51	.47422E+03
95.14	15.52	13.41	351.3	0.666E-02	12.89	25.87	13.41	0.52	.48180E+03

Cumulative travel time = 481.8045 sec ( 0.13 hrs)

END OF MOD241: BUOYANT AMBIENT SPREADING

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 Due to the attachment or proximity of the plume to the bottom, the bottom coordinate for the FAR-FIELD differs from the ambient depth, ZFB = 0 m.  
 In a subsequent analysis set "depth at discharge" equal to "ambient depth".  
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BEGIN MOD261: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT

Vertical diffusivity (initial value) = 0.357E-01 m<sup>2</sup>/s  
 Horizontal diffusivity (initial value) = 0.115E+00 m<sup>2</sup>/s

Profile definitions:

BV = Gaussian s.d.\*sqrt(pi/2) (46%) thickness, measured vertically  
 = or equal to layer depth, if fully mixed  
 BH = Gaussian s.d.\*sqrt(pi/2) (46%) half-width,  
 measured horizontally in Y-direction  
 ZU = upper plume boundary (Z-coordinate)  
 ZL = lower plume boundary (Z-coordinate)  
 S = hydrodynamic centerline dilution  
 C = centerline concentration (includes reaction effects, if any)  
 TT = Cumulative travel time

Plume Stage 1 (not bank attached):

X	Y	Z	S	C	BV	BH	ZU	ZL	TT
95.14	15.52	13.41	351.3	0.666E-02	12.89	25.87	13.41	0.52	.48180E+03
133.24	15.52	13.41	382.2	0.612E-02	13.37	27.14	13.41	0.04	.66322E+03

Plume interacts with BOTTOM.

The passive diffusion plume becomes VERTICALLY FULLY MIXED within this prediction interval.

171.33	15.52	13.41	401.8	0.582E-02	13.41	28.44	13.41	0.00	.84463E+03
209.43	15.52	13.41	420.3	0.556E-02	13.41	29.75	13.41	0.00	.10261E+04
247.53	15.52	13.41	439.2	0.533E-02	13.41	31.09	13.41	0.00	.12075E+04
285.63	15.52	13.41	458.3	0.510E-02	13.41	32.44	13.41	0.00	.13889E+04
323.72	15.52	13.41	477.7	0.490E-02	13.41	33.81	13.41	0.00	.15703E+04
361.82	15.52	13.41	497.4	0.470E-02	13.41	35.20	13.41	0.00	.17517E+04
399.92	15.52	13.41	517.3	0.452E-02	13.41	36.61	13.41	0.00	.19331E+04
438.02	15.52	13.41	537.5	0.435E-02	13.41	38.04	13.41	0.00	.21145E+04
476.11	15.52	13.41	557.9	0.419E-02	13.41	39.49	13.41	0.00	.22960E+04
514.21	15.52	13.41	578.6	0.404E-02	13.41	40.95	13.41	0.00	.24774E+04
552.31	15.52	13.41	599.5	0.390E-02	13.41	42.44	13.41	0.00	.26588E+04
590.40	15.52	13.41	620.7	0.377E-02	13.41	43.94	13.41	0.00	.28402E+04
628.50	15.52	13.41	642.2	0.364E-02	13.41	45.45	13.41	0.00	.30216E+04
666.60	15.52	13.41	663.8	0.352E-02	13.41	46.99	13.41	0.00	.32030E+04
704.70	15.52	13.41	685.7	0.341E-02	13.41	48.54	13.41	0.00	.33844E+04
742.79	15.52	13.41	707.9	0.330E-02	13.41	50.11	13.41	0.00	.35659E+04
780.89	15.52	13.41	730.3	0.320E-02	13.41	51.69	13.41	0.00	.37473E+04
818.99	15.52	13.41	752.9	0.310E-02	13.41	53.29	13.41	0.00	.39287E+04
857.08	15.52	13.41	775.7	0.301E-02	13.41	54.91	13.41	0.00	.41101E+04
895.18	15.52	13.41	798.8	0.292E-02	13.41	56.54	13.41	0.00	.42915E+04
933.28	15.52	13.41	822.1	0.284E-02	13.41	58.19	13.41	0.00	.44729E+04
971.38	15.52	13.41	845.6	0.276E-02	13.41	59.85	13.41	0.00	.46544E+04
1009.47	15.52	13.41	869.3	0.269E-02	13.41	61.53	13.41	0.00	.48358E+04
1047.57	15.52	13.41	893.3	0.261E-02	13.41	63.23	13.41	0.00	.50172E+04
1085.67	15.52	13.41	917.4	0.254E-02	13.41	64.94	13.41	0.00	.51986E+04
1123.76	15.52	13.41	941.8	0.248E-02	13.41	66.66	13.41	0.00	.53800E+04
1161.86	15.52	13.41	966.4	0.242E-02	13.41	68.40	13.41	0.00	.55614E+04
1199.96	15.52	13.41	991.2	0.235E-02	13.41	70.16	13.41	0.00	.57428E+04
1238.06	15.52	13.41	1016.2	0.230E-02	13.41	71.93	13.41	0.00	.59243E+04
1276.15	15.52	13.41	1041.4	0.224E-02	13.41	73.71	13.41	0.00	.61057E+04
1314.25	15.52	13.41	1066.9	0.219E-02	13.41	75.51	13.41	0.00	.62871E+04
1352.35	15.52	13.41	1092.5	0.214E-02	13.41	77.33	13.41	0.00	.64685E+04
1390.44	15.52	13.41	1118.3	0.209E-02	13.41	79.16	13.41	0.00	.66499E+04
1428.54	15.52	13.41	1144.3	0.204E-02	13.41	81.00	13.41	0.00	.68313E+04
1466.64	15.52	13.41	1170.6	0.199E-02	13.41	82.86	13.41	0.00	.70127E+04







S = hydrodynamic dilutions, include buoyancy (heat) loss effects, but provided plume has surface contact  
 C = corresponding temperature values (in "deg.C") include heat loss, if any

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 BEGIN MOD201: DIFFUSER DISCHARGE MODULE

Due to complex near-field motions: EQUIVALENT SLOT DIFFUSER (2-D) GEOMETRY

Profile definitions:

BV = Gaussian 1/e (37%) width, in vertical plane normal to trajectory  
 BH = top-hat half-width, in horizontal plane normal to trajectory  
 S = hydrodynamic centerline dilution  
 C = centerline concentration (includes reaction effects, if any)  
 Uc = Local centerline excess velocity (above ambient)  
 TT = Cumulative travel time

X	Y	Z	S	C	BV	BH	Uc	TT
0.00	0.00	1.31	1.0	0.236E+01	0.01	21.95	1.150	.00000E+00

END OF MOD201: DIFFUSER DISCHARGE MODULE  
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BEGIN MOD271: ACCELERATION ZONE OF UNIDIRECTIONAL CO-FLOWING DIFFUSER

In this laterally contracting zone the diffuser plume becomes VERTICALLY FULLY MIXED over the entire layer depth (HS = 13.41m).  
 Full mixing is achieved after a plume distance of about five layer depths from the diffuser.

Profile definitions:

BV = layer depth (vertically mixed)  
 BH = top-hat half-width, in horizontal plane normal to trajectory  
 S = hydrodynamic average (bulk) dilution  
 C = average (bulk) concentration (includes reaction effects, if any)  
 TT = Cumulative travel time

X	Y	Z	S	C	BV	BH	TT
0.00	0.00	1.31	1.0	0.236E+01	0.01	21.95	.00000E+00
0.31	0.31	1.35	25.4	0.929E-01	0.27	21.91	.26184E+01
0.62	0.62	1.38	35.5	0.665E-01	0.54	21.88	.56975E+01
0.93	0.93	1.42	43.3	0.545E-01	0.80	21.85	.88990E+01
1.24	1.24	1.45	49.8	0.474E-01	1.07	21.82	.12167E+02
1.55	1.55	1.49	55.6	0.425E-01	1.34	21.79	.15479E+02
1.86	1.86	1.52	60.8	0.388E-01	1.61	21.76	.18823E+02
2.17	2.17	1.56	65.6	0.360E-01	1.88	21.74	.22191E+02
2.48	2.48	1.59	70.0	0.337E-01	2.15	21.72	.25578E+02
2.79	2.79	1.63	74.2	0.318E-01	2.41	21.69	.28981E+02
3.10	3.10	1.66	78.2	0.302E-01	2.68	21.67	.32397E+02
3.41	3.41	1.70	81.9	0.288E-01	2.95	21.65	.35825E+02
3.72	3.72	1.73	85.5	0.276E-01	3.22	21.63	.39263E+02
4.03	4.03	1.77	89.0	0.265E-01	3.49	21.62	.42710E+02
4.35	4.35	1.81	92.3	0.256E-01	3.76	21.60	.46164E+02
4.66	4.66	1.84	95.5	0.247E-01	4.02	21.58	.49625E+02
4.97	4.97	1.88	98.6	0.239E-01	4.29	21.57	.53093E+02
5.28	5.28	1.91	101.6	0.232E-01	4.56	21.55	.56567E+02
5.59	5.59	1.95	104.5	0.226E-01	4.83	21.54	.60045E+02
5.90	5.90	1.98	107.4	0.220E-01	5.10	21.52	.63529E+02
6.21	6.21	2.02	110.1	0.214E-01	5.36	21.51	.67017E+02
6.52	6.52	2.05	112.8	0.209E-01	5.63	21.50	.70509E+02
6.83	6.83	2.09	115.5	0.204E-01	5.90	21.49	.74005E+02
7.14	7.14	2.12	118.0	0.200E-01	6.17	21.48	.77504E+02
7.45	7.45	2.16	120.6	0.196E-01	6.44	21.46	.81007E+02
7.76	7.76	2.19	123.0	0.192E-01	6.71	21.45	.84513E+02
8.07	8.07	2.23	125.4	0.188E-01	6.97	21.44	.88022E+02
8.38	8.38	2.26	127.8	0.185E-01	7.24	21.44	.91534E+02
8.69	8.69	2.30	130.1	0.181E-01	7.51	21.43	.95048E+02
9.00	9.00	2.33	132.4	0.178E-01	7.78	21.42	.98565E+02
9.31	9.31	2.37	134.7	0.175E-01	8.05	21.41	.10208E+03
9.62	9.62	2.41	136.9	0.172E-01	8.31	21.40	.10561E+03
9.93	9.93	2.44	139.0	0.170E-01	8.58	21.40	.10913E+03
10.24	10.24	2.48	141.2	0.167E-01	8.85	21.39	.11266E+03
10.55	10.55	2.51	143.3	0.165E-01	9.12	21.38	.11618E+03
10.86	10.86	2.55	145.4	0.162E-01	9.39	21.38	.11971E+03
11.17	11.17	2.58	147.4	0.160E-01	9.66	21.37	.12324E+03
11.48	11.48	2.62	149.4	0.158E-01	9.92	21.37	.12678E+03
11.79	11.79	2.65	151.4	0.156E-01	10.19	21.37	.13031E+03
12.10	12.10	2.69	153.4	0.154E-01	10.46	21.36	.13385E+03
12.41	12.41	2.72	155.3	0.152E-01	10.73	21.36	.13739E+03
12.72	12.72	2.76	157.3	0.150E-01	11.00	21.36	.14093E+03
13.04	13.04	2.79	159.2	0.148E-01	11.27	21.35	.14447E+03

13.35	13.35	2.83	161.0	0.147E-01	11.53	21.35	.14801E+03
13.66	13.66	2.86	162.9	0.145E-01	11.80	21.35	.15155E+03
13.97	13.97	2.90	164.7	0.143E-01	12.07	21.35	.15510E+03
14.28	14.28	2.94	166.5	0.142E-01	12.34	21.35	.15864E+03
14.59	14.59	2.97	168.3	0.140E-01	12.61	21.35	.16219E+03
14.90	14.90	3.01	170.1	0.139E-01	12.87	21.35	.16574E+03
15.21	15.21	3.04	171.8	0.137E-01	13.14	21.35	.16929E+03
15.52	15.52	3.08	173.6	0.136E-01	13.41	21.34	.17284E+03

Cumulative travel time = 172.8390 sec ( 0.05 hrs)  
 Plume centerline may exhibit slight discontinuities in transition  
 to subsequent far-field module.

END OF MOD271: ACCELERATION ZONE OF UNIDIRECTIONAL CO-FLOWING DIFFUSER

BEGIN MOD251: DIFFUSER PLUME IN CO-FLOW

Phase 1: Vertically mixed, Phase 2: Re-stratified

Phase 2: The flow has RESTRATIFIED at the beginning of this zone.

This flow region is INSIGNIFICANT in spatial extent and will be by-passed.

END OF MOD251: DIFFUSER PLUME IN CO-FLOW

\*\* End of NEAR-FIELD REGION (NFR) \*\*

BEGIN MOD241: BUOYANT AMBIENT SPREADING

Profile definitions:

- BV = top-hat thickness, measured vertically
- BH = top-hat half-width, measured horizontally in y-direction
- ZU = upper plume boundary (Z-coordinate)
- ZL = lower plume boundary (Z-coordinate)
- S = hydrodynamic average (bulk) dilution
- C = average (bulk) concentration (includes reaction effects, if any)
- TT = Cumulative travel time

Plume Stage 1 (not bank attached):

X	Y	Z	S	C	BV	BH	ZU	ZL	TT
15.52	15.52	13.41	173.6	0.136E-01	13.41	22.40	13.41	0.00	.17284E+03
45.69	15.52	13.41	180.9	0.130E-01	12.14	25.79	13.41	1.28	.42425E+03

\*\* REGULATORY MIXING ZONE BOUNDARY \*\*

In this prediction interval the plume DOWNSTREAM distance meets or exceeds  
 the regulatory value = 73.76 m.

This is the extent of the REGULATORY MIXING ZONE.

75.86	15.52	13.41	187.6	0.126E-01	11.20	28.97	13.41	2.21	.67567E+03
106.03	15.52	13.41	194.0	0.122E-01	10.49	31.99	13.41	2.92	.92708E+03
136.20	15.52	13.41	200.2	0.118E-01	9.94	34.87	13.41	3.47	.11785E+04
166.37	15.52	13.41	206.5	0.114E-01	9.50	37.63	13.41	3.92	.14299E+04
196.54	15.52	13.41	212.8	0.111E-01	9.14	40.30	13.41	4.27	.16813E+04
226.71	15.52	13.41	219.2	0.108E-01	8.85	42.87	13.41	4.56	.19327E+04
256.88	15.52	13.41	225.9	0.104E-01	8.62	45.38	13.41	4.80	.21841E+04
287.04	15.52	13.41	232.8	0.101E-01	8.43	47.81	13.41	4.98	.24356E+04
317.21	15.52	13.41	240.0	0.982E-02	8.28	50.19	13.41	5.14	.26870E+04
347.38	15.52	13.41	247.5	0.952E-02	8.16	52.51	13.41	5.25	.29384E+04
377.55	15.52	13.41	255.3	0.923E-02	8.07	54.78	13.41	5.34	.31898E+04
407.72	15.52	13.41	263.5	0.894E-02	8.00	57.00	13.41	5.41	.34412E+04
437.89	15.52	13.41	272.1	0.866E-02	7.96	59.18	13.41	5.45	.36926E+04
468.06	15.52	13.41	281.1	0.838E-02	7.93	61.32	13.41	5.48	.39440E+04
498.23	15.52	13.41	290.5	0.811E-02	7.93	63.42	13.41	5.48	.41955E+04
528.40	15.52	13.41	300.4	0.784E-02	7.94	65.48	13.41	5.47	.44469E+04
558.57	15.52	13.41	310.7	0.758E-02	7.96	67.52	13.41	5.45	.46983E+04
588.74	15.52	13.41	321.5	0.733E-02	8.00	69.52	13.41	5.41	.49497E+04
618.91	15.52	13.41	332.7	0.708E-02	8.05	71.50	13.41	5.36	.52011E+04
649.08	15.52	13.41	344.5	0.683E-02	8.12	73.45	13.41	5.29	.54525E+04
679.25	15.52	13.41	356.7	0.660E-02	8.19	75.37	13.41	5.22	.57039E+04
709.42	15.52	13.41	369.5	0.637E-02	8.28	77.27	13.41	5.14	.59554E+04
739.59	15.52	13.41	382.8	0.615E-02	8.37	79.14	13.41	5.04	.62068E+04
769.76	15.52	13.41	396.6	0.593E-02	8.47	81.00	13.41	4.94	.64582E+04
799.93	15.52	13.41	411.0	0.573E-02	8.59	82.83	13.41	4.82	.67096E+04
830.10	15.52	13.41	425.9	0.552E-02	8.71	84.64	13.41	4.70	.69610E+04
860.27	15.52	13.41	441.4	0.533E-02	8.84	86.43	13.41	4.57	.72124E+04
890.44	15.52	13.41	457.4	0.514E-02	8.97	88.20	13.41	4.44	.74638E+04
920.61	15.52	13.41	474.0	0.496E-02	9.12	89.96	13.41	4.29	.77152E+04
950.78	15.52	13.41	491.3	0.479E-02	9.27	91.70	13.41	4.14	.79667E+04
980.95	15.52	13.41	509.1	0.462E-02	9.43	93.42	13.41	3.98	.82181E+04
1011.12	15.52	13.41	527.5	0.446E-02	9.60	95.12	13.41	3.82	.84695E+04
1041.29	15.52	13.41	546.5	0.430E-02	9.77	96.82	13.41	3.64	.87209E+04
1071.46	15.52	13.41	566.1	0.415E-02	9.95	98.49	13.41	3.46	.89723E+04





S = hydrodynamic dilutions, include buoyancy (heat) loss effects, but provided plume has surface contact  
 C = corresponding temperature values (in "deg.C") include heat loss, if any

-----  
 BEGIN MOD201: DIFFUSER DISCHARGE MODULE

Due to complex near-field motions: EQUIVALENT SLOT DIFFUSER (2-D) GEOMETRY

Profile definitions:

BV = Gaussian 1/e (37%) width, in vertical plane normal to trajectory  
 BH = top-hat half-width, in horizontal plane normal to trajectory  
 S = hydrodynamic centerline dilution  
 C = centerline concentration (includes reaction effects, if any)  
 Uc = Local centerline excess velocity (above ambient)  
 TT = Cumulative travel time

X	Y	Z	S	C	BV	BH	Uc	TT
0.00	0.00	1.31	1.0	0.248E+01	0.01	21.95	1.067	.00000E+00

END OF MOD201: DIFFUSER DISCHARGE MODULE  
 -----

BEGIN MOD271: ACCELERATION ZONE OF UNIDIRECTIONAL CO-FLOWING DIFFUSER

In this laterally contracting zone the diffuser plume becomes VERTICALLY FULLY MIXED over the entire layer depth (HS = 13.41m).  
 Full mixing is achieved after a plume distance of about five layer depths from the diffuser.

Profile definitions:

BV = layer depth (vertically mixed)  
 BH = top-hat half-width, in horizontal plane normal to trajectory  
 S = hydrodynamic average (bulk) dilution  
 C = average (bulk) concentration (includes reaction effects, if any)  
 TT = Cumulative travel time

X	Y	Z	S	C	BV	BH	TT
0.00	0.00	1.31	1.0	0.248E+01	0.01	21.95	.00000E+00
0.31	0.31	1.35	50.9	0.487E-01	0.27	21.94	.16668E+01
0.62	0.62	1.38	71.6	0.347E-01	0.54	21.93	.34211E+01
0.93	0.93	1.42	87.4	0.284E-01	0.80	21.92	.51925E+01
1.24	1.24	1.45	100.8	0.246E-01	1.07	21.91	.69729E+01
1.55	1.55	1.49	112.6	0.220E-01	1.34	21.91	.87590E+01
1.86	1.86	1.52	123.2	0.201E-01	1.61	21.90	.10549E+02
2.17	2.17	1.56	133.0	0.186E-01	1.88	21.89	.12342E+02
2.48	2.48	1.59	142.1	0.175E-01	2.15	21.89	.14138E+02
2.79	2.79	1.63	150.7	0.165E-01	2.41	21.88	.15936E+02
3.10	3.10	1.66	158.8	0.156E-01	2.68	21.88	.17735E+02
3.41	3.41	1.70	166.5	0.149E-01	2.95	21.87	.19536E+02
3.72	3.72	1.73	173.8	0.143E-01	3.22	21.87	.21338E+02
4.03	4.03	1.77	180.9	0.137E-01	3.49	21.86	.23141E+02
4.35	4.35	1.81	187.7	0.132E-01	3.76	21.86	.24946E+02
4.66	4.66	1.84	194.2	0.128E-01	4.02	21.85	.26751E+02
4.97	4.97	1.88	200.5	0.124E-01	4.29	21.85	.28556E+02
5.28	5.28	1.91	206.7	0.120E-01	4.56	21.85	.30363E+02
5.59	5.59	1.95	212.7	0.117E-01	4.83	21.84	.32170E+02
5.90	5.90	1.98	218.5	0.114E-01	5.10	21.84	.33978E+02
6.21	6.21	2.02	224.1	0.111E-01	5.36	21.84	.35786E+02
6.52	6.52	2.05	229.6	0.108E-01	5.63	21.83	.37595E+02
6.83	6.83	2.09	235.0	0.106E-01	5.90	21.83	.39404E+02
7.14	7.14	2.12	240.3	0.103E-01	6.17	21.83	.41214E+02

\*\* REGULATORY MIXING ZONE BOUNDARY is within the Near-Field Region \*\*

In this prediction interval the plume DOWNSTREAM distance meets or exceeds the regulatory value = 7.38 m.

This is the extent of the REGULATORY MIXING ZONE.

7.45	7.45	2.16	245.4	0.101E-01	6.44	21.82	.43024E+02
7.76	7.76	2.19	250.4	0.990E-02	6.71	21.82	.44834E+02
8.07	8.07	2.23	255.4	0.971E-02	6.97	21.82	.46645E+02
8.38	8.38	2.26	260.2	0.953E-02	7.24	21.82	.48456E+02
8.69	8.69	2.30	265.0	0.936E-02	7.51	21.82	.50268E+02
9.00	9.00	2.33	269.7	0.920E-02	7.78	21.81	.52080E+02
9.31	9.31	2.37	274.2	0.904E-02	8.05	21.81	.53892E+02
9.62	9.62	2.41	278.8	0.890E-02	8.31	21.81	.55704E+02
9.93	9.93	2.44	283.2	0.876E-02	8.58	21.81	.57517E+02
10.24	10.24	2.48	287.6	0.862E-02	8.85	21.81	.59330E+02
10.55	10.55	2.51	291.9	0.850E-02	9.12	21.80	.61143E+02
10.86	10.86	2.55	296.1	0.837E-02	9.39	21.80	.62956E+02
11.17	11.17	2.58	300.3	0.826E-02	9.66	21.80	.64770E+02
11.48	11.48	2.62	304.5	0.815E-02	9.92	21.80	.66584E+02
11.79	11.79	2.65	308.5	0.804E-02	10.19	21.80	.68398E+02

12.10	12.10	2.69	312.5	0.793E-02	10.46	21.80	.70212E+02
12.41	12.41	2.72	316.5	0.784E-02	10.73	21.80	.72026E+02
12.72	12.72	2.76	320.4	0.774E-02	11.00	21.80	.73841E+02
13.04	13.04	2.79	324.3	0.765E-02	11.27	21.80	.75655E+02
13.35	13.35	2.83	328.1	0.756E-02	11.53	21.80	.77470E+02
13.66	13.66	2.86	331.9	0.747E-02	11.80	21.80	.79285E+02
13.97	13.97	2.90	335.7	0.739E-02	12.07	21.80	.81101E+02
14.28	14.28	2.94	339.4	0.731E-02	12.34	21.80	.82916E+02
14.59	14.59	2.97	343.0	0.723E-02	12.61	21.80	.84731E+02
14.90	14.90	3.01	346.6	0.715E-02	12.87	21.79	.86547E+02
15.21	15.21	3.04	350.2	0.708E-02	13.14	21.79	.88363E+02
15.52	15.52	3.08	353.8	0.701E-02	13.41	21.79	.90179E+02

Cumulative travel time = 90.1788 sec ( 0.03 hrs)

Plume centerline may exhibit slight discontinuities in transition to subsequent far-field module.

END OF MOD271: ACCELERATION ZONE OF UNIDIRECTIONAL CO-FLOWING DIFFUSER

BEGIN MOD251: DIFFUSER PLUME IN CO-FLOW

Phase 1: Vertically mixed, Phase 2: Re-stratified

Phase 2: The flow has RESTRATIFIED at the beginning of this zone.

This flow region is INSIGNIFICANT in spatial extent and will be by-passed.

END OF MOD251: DIFFUSER PLUME IN CO-FLOW

\*\* End of NEAR-FIELD REGION (NFR) \*\*

BEGIN MOD241: BUOYANT AMBIENT SPREADING

Discharge is non-buoyant or weakly buoyant.  
Therefore BUOYANT SPREADING REGIME is ABSENT.

END OF MOD241: BUOYANT AMBIENT SPREADING

Due to the attachment or proximity of the plume to the bottom, the bottom coordinate for the FAR-FIELD differs from the ambient depth, ZFB = 0 m.  
In a subsequent analysis set "depth at discharge" equal to "ambient depth".

BEGIN MOD261: PASSIVE AMBIENT MIXING IN UNIFORM AMBIENT

Vertical diffusivity (initial value) = 0.408E-01 m<sup>2</sup>/s  
Horizontal diffusivity (initial value) = 0.928E-01 m<sup>2</sup>/s

Profile definitions:

BV = Gaussian s.d.\*sqrt(pi/2) (46%) thickness, measured vertically  
= or equal to layer depth, if fully mixed  
BH = Gaussian s.d.\*sqrt(pi/2) (46%) half-width,  
measured horizontally in Y-direction  
ZU = upper plume boundary (Z-coordinate)  
ZL = lower plume boundary (Z-coordinate)  
S = hydrodynamic centerline dilution  
C = centerline concentration (includes reaction effects, if any)  
TT = Cumulative travel time

Plume Stage 1 (not bank attached):

X	Y	Z	S	C	BV	BH	ZU	ZL	TT
15.52	15.52	13.41	353.8	0.701E-02	13.41	22.05	13.41	0.00	.90179E+02

Plume interacts with BOTTOM.

The passive diffusion plume becomes VERTICALLY FULLY MIXED within this prediction interval.

55.21	15.52	13.41	371.4	0.668E-02	13.41	23.16	13.41	0.00	.25555E+03
94.90	15.52	13.41	389.4	0.637E-02	13.41	24.28	13.41	0.00	.42093E+03
134.59	15.52	13.41	407.6	0.608E-02	13.41	25.41	13.41	0.00	.58630E+03
174.28	15.52	13.41	426.1	0.582E-02	13.41	26.57	13.41	0.00	.75167E+03
213.97	15.52	13.41	444.9	0.557E-02	13.41	27.74	13.41	0.00	.91705E+03
253.66	15.52	13.41	464.0	0.534E-02	13.41	28.93	13.41	0.00	.10824E+04
293.35	15.52	13.41	483.3	0.513E-02	13.41	30.13	13.41	0.00	.12478E+04
333.04	15.52	13.41	502.9	0.493E-02	13.41	31.35	13.41	0.00	.14132E+04
372.72	15.52	13.41	522.7	0.474E-02	13.41	32.59	13.41	0.00	.15785E+04
412.41	15.52	13.41	542.8	0.457E-02	13.41	33.84	13.41	0.00	.17439E+04
452.10	15.52	13.41	563.1	0.440E-02	13.41	35.11	13.41	0.00	.19093E+04
491.79	15.52	13.41	583.7	0.424E-02	13.41	36.39	13.41	0.00	.20747E+04
531.48	15.52	13.41	604.6	0.410E-02	13.41	37.69	13.41	0.00	.22400E+04
571.17	15.52	13.41	625.6	0.396E-02	13.41	39.00	13.41	0.00	.24054E+04
610.86	15.52	13.41	646.9	0.383E-02	13.41	40.33	13.41	0.00	.25708E+04
650.55	15.52	13.41	668.5	0.371E-02	13.41	41.68	13.41	0.00	.27362E+04





**E-2. Outfall 001 Model Runs**



/ UM3. 12/1/2022 8:34:03 AM

Case 1; ambient file C:\Plumes\SCTP-01.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.13	90.0	0.0	21.1	0.0	0.0	0.13	90.0	0.0003	-1.966
15.0	0.13	90.0	0.0	21.1	0.0	0.0	0.13	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.7473	4.3	45.0	135.0	10.0	16.0	24.0	242.0	42.6	13.5	1.00E-3	23.2	100.0

Simulation:

Froude number: 44.3; effleunt density (sigma-T) -2.446; effleunt velocity 1.451(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	42.6	0.13	0.747	100.0	1.0	0.0	0.0	0.0;
10	42.37	0.13	0.898	82.03	1.219	-0.165	0.168	0.0774;
20	42.1	0.13	1.088	67.3	1.486	-0.354	0.37	0.186;
30	41.79	0.13	1.316	55.21	1.811	-0.572	0.613	0.338;
40	41.44	0.13	1.589	45.29	2.207	-0.819	0.906	0.549;
50	41.05	0.13	1.914	37.15	2.691	-1.094	1.254	0.834;
60	40.63	0.13	2.299	30.48	3.28	-1.392	1.659	1.211;
70	40.18	0.13	2.751	25.0	3.998	-1.708	2.126	1.697;
80	39.71	0.13	3.279	20.51	4.874	-2.038	2.66	2.316;
90	39.22	0.13	3.89	16.83	5.941	-2.377	3.27	3.092;
100	38.72	0.13	4.587	13.8	7.242	-2.723	3.965	4.056;
110	38.22	0.13	5.377	11.32	8.827	-3.073	4.76	5.247;
120	37.7	0.13	6.261	9.289	10.76	-3.427	5.677	6.714;
130	37.18	0.13	7.242	7.62	13.12	-3.786	6.746	8.529;
140	36.64	0.13	8.32	6.251	15.99	-4.153	8.01	10.79;
150	36.07	0.13	9.5	5.128	19.49	-4.531	9.531	13.63;
160	35.48	0.13	10.79	4.207	23.76	-4.925	11.39	17.23;
170	34.84	0.13	12.18	3.451	28.96	-5.338	13.7	21.84;
175	34.51	0.13	12.93	3.126	31.98	-5.554	15.06	24.63; merging;
180	33.98	0.13	13.83	2.831	35.3	-5.888	17.38	29.41;
190	32.68	0.13	16.34	2.323	43.04	-6.682	23.65	42.59; acute zone;
200	31.1	0.13	19.75	1.905	52.46	-7.589	32.22	60.95;
210	29.17	0.13	24.16	1.563	63.95	-8.618	43.9	86.34;
220	26.79	0.13	29.73	1.282	77.95	-9.769	59.6	120.9;
230	23.86	0.13	36.66	1.052	95.02	-11.03	80.39	167.2;
238	21.03	0.13	43.37	0.898	111.3	-12.12	101.5	214.6; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 44.26 m

conc (%)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
0.89375	111.8	44.34	32.0	0.00182	0.0	0.0	0.13	3.00E-4
0.89479	111.7	44.53	34.0	0.00609	0.0	0.0	0.13	3.00E-4
0.8954	111.6	44.73	36.0	0.0104	0.0	0.0	0.13	3.00E-4
0.89579	111.6	44.92	38.0	0.0146	0.0	0.0	0.13	3.00E-4
0.89607	111.5	45.11	40.0	0.0189	0.0	0.0	0.13	3.00E-4
0.89627	111.5	45.31	42.0	0.0232	0.0	0.0	0.13	3.00E-4
0.89644	111.5	45.5	44.0	0.0275	0.0	0.0	0.13	3.00E-4
0.89657	111.5	45.69	46.0	0.0317	0.0	0.0	0.13	3.00E-4
0.89668	111.5	45.88	48.0	0.036	0.0	0.0	0.13	3.00E-4
0.89678	111.5	46.06	50.0	0.0403	0.0	0.0	0.13	3.00E-4
0.89686	111.4	46.25	52.0	0.0446	0.0	0.0	0.13	3.00E-4
0.89693	111.4	46.44	54.0	0.0488	0.0	0.0	0.13	3.00E-4
0.897	111.4	46.63	56.0	0.0531	0.0	0.0	0.13	3.00E-4
0.89705	111.4	46.81	58.0	0.0574	0.0	0.0	0.13	3.00E-4
0.89711	111.4	47.0	60.0	0.0616	0.0	0.0	0.13	3.00E-4
0.89715	111.4	47.18	62.0	0.0659	0.0	0.0	0.13	3.00E-4
0.89719	111.4	47.36	64.0	0.0702	0.0	0.0	0.13	3.00E-4
0.89723	111.4	47.55	66.0	0.0745	0.0	0.0	0.13	3.00E-4
0.89726	111.4	47.73	68.0	0.0787	0.0	0.0	0.13	3.00E-4
0.89729	111.4	47.91	70.0	0.083	0.0	0.0	0.13	3.00E-4
0.89731	111.4	48.09	72.0	0.0873	0.0	0.0	0.13	3.00E-4
0.89732	111.4	48.27	74.0	0.0916	0.0	0.0	0.13	3.00E-4

count: 22

/ UM3. 12/1/2022 8:38:33 AM

Case 2; ambient file C:\Plumes\SCTP-02.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.57	90.0	0.0	21.1	0.0	0.0	0.57	90.0	0.0003	-1.966
15.0	0.57	90.0	0.0	21.1	0.0	0.0	0.57	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChronicMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.7473	4.3	45.0	135.0	10.0	16.0	24.0	242.0	42.6	13.5	1.00E-3	23.2	100.0

Simulation:

Froude number: 44.3; effleunt density (sigma-T) -2.446; effleunt velocity 1.451(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	42.6	0.57	0.747	100.0	1.0	0.0	0.0	0.0;
10	42.49	0.57	0.884	82.03	1.219	-0.0812	0.0884	0.038;
20	42.37	0.57	1.048	67.3	1.486	-0.16	0.189	0.0829;
30	42.26	0.57	1.232	55.21	1.811	-0.238	0.308	0.137;
40	42.15	0.57	1.438	45.29	2.207	-0.315	0.447	0.203;
50	42.05	0.57	1.662	37.15	2.691	-0.392	0.612	0.282;
60	41.94	0.57	1.906	30.48	3.28	-0.47	0.813	0.381;
70	41.82	0.57	2.169	25.0	3.998	-0.55	1.061	0.504;
80	41.7	0.57	2.451	20.51	4.874	-0.634	1.375	0.663;
90	41.57	0.57	2.754	16.83	5.941	-0.724	1.78	0.869;
100	41.44	0.57	3.082	13.8	7.242	-0.821	2.307	1.14;
110	41.29	0.57	3.437	11.32	8.827	-0.927	3.003	1.499;
120	41.12	0.57	3.823	9.289	10.76	-1.043	3.925	1.979;
130	40.94	0.57	4.244	7.62	13.12	-1.17	5.154	2.622;
140	40.74	0.57	4.705	6.251	15.99	-1.309	6.794	3.483;
150	40.52	0.57	5.21	5.128	19.49	-1.463	8.985	4.637;
160	40.27	0.57	5.766	4.207	23.76	-1.632	11.91	6.184;
170	40.0	0.57	6.377	3.451	28.96	-1.817	15.83	8.257;
180	39.7	0.57	7.05	2.831	35.3	-2.021	21.06	11.03;
185	39.54	0.57	7.412	2.564	38.98	-2.13	24.3	12.75; acute zone;
190	39.37	0.57	7.792	2.323	43.04	-2.244	28.03	14.73;
200	39.0	0.57	8.61	1.905	52.46	-2.488	37.32	19.67;
210	38.58	0.57	9.512	1.563	63.95	-2.754	49.63	26.22;
220	38.12	0.57	10.51	1.282	77.95	-3.043	65.9	34.89;
229	37.66	0.57	11.49	1.073	93.16	-3.322	84.9	45.02; merging;
230	37.59	0.57	11.61	1.052	95.02	-3.361	87.85	46.59;
240	36.64	0.57	13.13	0.863	115.8	-3.892	132.3	70.3;
250	35.48	0.57	15.21	0.708	141.2	-4.485	192.8	102.6;
257	34.52	0.57	17.02	0.616	162.2	-4.932	246.7	131.4; chronic zone;
260	34.07	0.57	17.9	0.581	172.1	-5.131	273.1	145.5;
270	32.34	0.57	21.3	0.476	209.8	-5.823	377.9	201.4;
280	30.22	0.57	25.54	0.391	255.8	-6.552	512.4	273.2;
290	27.64	0.57	30.79	0.321	311.8	-7.309	682.7	364.2;
300	24.49	0.57	37.26	0.263	380.1	-8.089	896.1	478.3;
308	21.47	0.57	43.48	0.224	445.3	-8.723	1103.8	589.2; surface;

Outside chronic zone

/ UM3. 12/1/2022 8:47:48 AM

Case 3; ambient file C:\Plumes\SCTP-03.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.04	90.0	0.0	21.1	0.0	0.0	0.04	90.0	0.0003	-1.966
15.0	0.04	90.0	0.0	21.1	0.0	0.0	0.04	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.7473	4.3	45.0	135.0	10.0	16.0	24.0	242.0	42.6	13.5	1.00E-3	23.2	100.0

Simulation:

Froude number: 44.3; effleunt density (sigma-T) -2.446; effleunt velocity 1.451(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	42.6	0.04	0.747	100.0	1.0	0.0	0.0	0.0;
10	42.33	0.04	0.901	82.03	1.219	-0.189	0.19	0.089;
20	42.01	0.04	1.096	67.3	1.486	-0.415	0.421	0.219;
30	41.63	0.04	1.332	55.21	1.811	-0.685	0.7	0.407;
40	41.18	0.04	1.619	45.29	2.207	-1.005	1.038	0.679;
50	40.64	0.04	1.966	37.15	2.691	-1.382	1.447	1.072;
60	40.01	0.04	2.386	30.48	3.28	-1.825	1.939	1.632;
70	39.27	0.04	2.891	25.0	3.998	-2.342	2.532	2.429;
80	38.42	0.04	3.498	20.51	4.874	-2.94	3.244	3.553;
90	37.43	0.04	4.225	16.83	5.941	-3.625	4.098	5.125;
100	36.3	0.04	5.091	13.8	7.242	-4.405	5.12	7.302;
110	35.02	0.04	6.118	11.32	8.827	-5.272	6.326	10.25;
120	33.62	0.04	7.328	9.289	10.76	-6.209	7.723	14.14;
130	32.11	0.04	8.744	7.62	13.12	-7.203	9.321	19.16;
140	30.5	0.04	10.39	6.251	15.99	-8.238	11.14	25.54;
150	28.8	0.04	12.28	5.128	19.49	-9.301	13.19	33.52;
160	27.02	0.04	14.45	4.207	23.76	-10.38	15.5	43.4;
162	26.65	0.04	14.91	4.044	24.72	-10.6	16.0	45.63; merging;
170	24.19	0.04	17.36	3.451	28.96	-12.0	19.43	61.64;
173	23.12	0.04	18.56	3.252	30.73	-12.59	20.96	69.06; acute zone;
180	20.34	0.04	21.96	2.831	35.3	-14.04	24.99	89.35;
190	15.64	0.04	28.4	2.323	43.04	-16.29	32.01	126.7;
195	12.91	0.04	32.4	2.104	47.51	-17.48	36.15	149.6; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 40.91 m

conc	dilutn	width	distnce	time	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
(%)		(m)	(m)	(hrs)				
2.09868	47.63	41.45	14.0	0.0122	0.0	0.0	0.04	3.00E-4
2.10052	47.58	42.06	16.0	0.0261	0.0	0.0	0.04	3.00E-4
2.10141	47.56	42.66	18.0	0.04	0.0	0.0	0.04	3.00E-4
2.10195	47.55	43.25	20.0	0.0539	0.0	0.0	0.04	3.00E-4
2.10232	47.54	43.83	22.0	0.0678	0.0	0.0	0.04	3.00E-4
2.10255	47.54	44.41	24.0	0.0817	0.0	0.0	0.04	3.00E-4
2.10256	47.54	44.98	26.0	0.0956	0.0	0.0	0.04	3.00E-4
2.10225	47.55	45.54	28.0	0.109	0.0	0.0	0.04	3.00E-4
2.10149	47.56	46.09	30.0	0.123	0.0	0.0	0.04	3.00E-4
2.10014	47.59	46.64	32.0	0.137	0.0	0.0	0.04	3.00E-4
2.09812	47.64	47.18	34.0	0.151	0.0	0.0	0.04	3.00E-4
2.09535	47.7	47.71	36.0	0.165	0.0	0.0	0.04	3.00E-4
2.09183	47.78	48.24	38.0	0.179	0.0	0.0	0.04	3.00E-4
2.08747	47.88	48.77	40.0	0.193	0.0	0.0	0.04	3.00E-4
2.08256	48.0	49.28	42.0	0.207	0.0	0.0	0.04	3.00E-4
2.07701	48.12	49.8	44.0	0.221	0.0	0.0	0.04	3.00E-4
2.07088	48.27	50.3	46.0	0.234	0.0	0.0	0.04	3.00E-4
2.06418	48.42	50.8	48.0	0.248	0.0	0.0	0.04	3.00E-4
2.05711	48.59	51.3	50.0	0.262	0.0	0.0	0.04	3.00E-4
2.04949	48.77	51.79	52.0	0.276	0.0	0.0	0.04	3.00E-4
2.04156	48.96	52.28	54.0	0.29	0.0	0.0	0.04	3.00E-4
2.03324	49.16	52.76	56.0	0.304	0.0	0.0	0.04	3.00E-4
2.02459	49.37	53.24	58.0	0.318	0.0	0.0	0.04	3.00E-4
2.01551	49.59	53.72	60.0	0.332	0.0	0.0	0.04	3.00E-4
2.00643	49.82	54.19	62.0	0.346	0.0	0.0	0.04	3.00E-4
1.99713	50.05	54.65	64.0	0.359	0.0	0.0	0.04	3.00E-4
1.98765	50.29	55.12	66.0	0.373	0.0	0.0	0.04	3.00E-4
1.97827	50.53	55.58	68.0	0.387	0.0	0.0	0.04	3.00E-4
1.96864	50.77	56.03	70.0	0.401	0.0	0.0	0.04	3.00E-4
1.95891	51.03	56.48	72.0	0.415	0.0	0.0	0.04	3.00E-4
1.94911	51.28	56.93	74.0	0.429	0.0	0.0	0.04	3.00E-4

count: 31

/ UM3. 12/1/2022 8:50:01 AM

Case 4; ambient file C:\Plumes\SCTP-04.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.21	90.0	0.0	21.1	0.0	0.0	0.21	90.0	0.0003	-1.966
15.0	0.21	90.0	0.0	21.1	0.0	0.0	0.21	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.7473	4.3	45.0	135.0	10.0	16.0	24.0	242.0	42.6	13.5	1.00E-3	23.2	100.0

Simulation:

Froude number: 44.3; effleunt density (sigma-T) -2.446; effleunt velocity 1.451(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	42.6	0.21	0.747	100.0	1.0	0.0	0.0	0.0;
10	42.39	0.21	0.895	82.03	1.219	-0.147	0.152	0.069;
20	42.16	0.21	1.081	67.3	1.486	-0.311	0.333	0.163;
30	41.91	0.21	1.301	55.21	1.811	-0.491	0.547	0.288;
40	41.63	0.21	1.561	45.29	2.207	-0.682	0.796	0.451;
50	41.35	0.21	1.866	37.15	2.691	-0.884	1.083	0.66;
60	41.05	0.21	2.221	30.48	3.28	-1.092	1.412	0.923;
70	40.75	0.21	2.628	25.0	3.998	-1.304	1.788	1.25;
80	40.45	0.21	3.091	20.51	4.874	-1.519	2.219	1.653;
90	40.14	0.21	3.612	16.83	5.941	-1.736	2.715	2.15;
100	39.82	0.21	4.191	13.8	7.242	-1.956	3.293	2.762;
110	39.5	0.21	4.829	11.32	8.827	-2.179	3.975	3.521;
120	39.17	0.21	5.526	9.289	10.76	-2.409	4.793	4.472;
130	38.83	0.21	6.286	7.62	13.12	-2.647	5.793	5.678;
140	38.46	0.21	7.111	6.251	15.99	-2.898	7.038	7.226;
150	38.07	0.21	8.007	5.128	19.49	-3.166	8.61	9.232;
160	37.65	0.21	8.982	4.207	23.76	-3.452	10.62	11.85;
170	37.18	0.21	10.04	3.451	28.96	-3.76	13.21	15.29;
180	36.68	0.21	11.2	2.831	35.3	-4.093	16.57	19.83;
188	36.23	0.21	12.2	2.416	41.36	-4.379	19.97	24.47; merging;
190	36.07	0.21	12.48	2.323	43.04	-4.479	21.28	26.26;
193	35.79	0.21	12.96	2.189	45.67	-4.66	23.76	29.68; acute zone;
200	35.03	0.21	14.34	1.905	52.46	-5.121	30.69	39.27;
210	33.77	0.21	16.91	1.563	63.95	-5.859	43.76	57.47;
220	32.21	0.21	20.23	1.282	77.95	-6.697	61.71	82.66;
230	30.3	0.21	24.43	1.052	95.02	-7.632	85.99	116.9;
240	27.96	0.21	29.67	0.863	115.8	-8.657	118.2	162.7;
250	25.07	0.21	36.15	0.708	141.2	-9.758	160.3	222.6;
260	21.52	0.21	44.12	0.581	172.1	-10.92	214.3	299.8; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 44.48 m

conc	dilutn	width	distnce	time				
(%)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
0.57798	172.9	44.52	66.0	7.81E-4	0.0	0.0	0.21	3.00E-4
0.5784	172.8	44.64	68.0	0.00343	0.0	0.0	0.21	3.00E-4
0.57878	172.7	44.76	70.0	0.00607	0.0	0.0	0.21	3.00E-4
0.57905	172.6	44.88	72.0	0.00872	0.0	0.0	0.21	3.00E-4
0.57925	172.6	45.0	74.0	0.0114	0.0	0.0	0.21	3.00E-4

count: 5

/ UM3. 12/1/2022 8:58:10 AM

Case 5; ambient file C:\Plumes\SCTP-05.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.33	90.0	0.0	10.7	0.0	0.0	0.33	90.0	0.0003	-0.3
15.0	0.33	90.0	0.0	10.7	0.0	0.0	0.33	90.0	0.0003	-0.3

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.7588	4.3	45.0	135.0	10.0	16.0	24.0	242.0	43.6	14.33	1.00E-3	20.2	100.0

Simulation:

Froude number: 25.83; effleunt density (sigma-T) -1.774; effleunt velocity 1.494(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	43.6	0.33	0.759	100.0	1.0	0.0	0.0	0.0;
10	43.42	0.33	0.906	82.03	1.219	-0.125	0.131	0.0569;
20	43.24	0.33	1.087	67.3	1.485	-0.255	0.283	0.129;
30	43.05	0.33	1.299	55.21	1.81	-0.391	0.458	0.222;
40	42.85	0.33	1.545	45.29	2.206	-0.531	0.661	0.337;
50	42.65	0.33	1.827	37.15	2.689	-0.672	0.894	0.479;
60	42.44	0.33	2.146	30.48	3.277	-0.814	1.162	0.653;
70	42.24	0.33	2.504	25.0	3.995	-0.957	1.473	0.867;
80	42.04	0.33	2.899	20.51	4.869	-1.101	1.837	1.129;
90	41.83	0.33	3.332	16.83	5.935	-1.248	2.272	1.455;
100	41.61	0.33	3.804	13.8	7.235	-1.399	2.798	1.864;
110	41.38	0.33	4.315	11.32	8.819	-1.556	3.45	2.384;
120	41.14	0.33	4.869	9.289	10.75	-1.723	4.269	3.054;
130	40.88	0.33	5.47	7.62	13.1	-1.9	5.314	3.928;
140	40.6	0.33	6.123	6.251	15.97	-2.092	6.662	5.075;
150	40.29	0.33	6.833	5.128	19.47	-2.299	8.415	6.587;
160	39.95	0.33	7.609	4.207	23.74	-2.524	10.7	8.586;
170	39.57	0.33	8.457	3.451	28.93	-2.768	13.7	11.23;
180	39.15	0.33	9.386	2.831	35.27	-3.032	17.63	14.72;
190	38.69	0.33	10.41	2.323	42.99	-3.318	22.77	19.32;
192	38.59	0.33	10.62	2.232	44.73	-3.377	23.98	20.41; acute zone;
200	38.16	0.33	11.53	1.905	52.41	-3.625	29.48	25.36;
203	37.98	0.33	11.89	1.795	55.62	-3.728	32.02	27.65; merging;
210	37.33	0.33	12.95	1.563	63.89	-4.086	41.78	36.48;
220	36.21	0.33	14.99	1.282	77.88	-4.654	60.04	53.06;
230	34.83	0.33	17.67	1.052	94.93	-5.274	84.28	75.12;
240	33.14	0.33	21.07	0.863	115.7	-5.941	116.0	104.0;
250	31.07	0.33	25.34	0.708	141.1	-6.646	156.7	141.3;
260	28.52	0.33	30.63	0.581	172.0	-7.382	208.4	188.7;
266	26.72	0.33	34.39	0.516	193.6	-7.835	245.6	222.8; chronic zone;
270	25.4	0.33	37.16	0.476	209.6	-8.141	273.3	248.3;
279	21.99	0.33	44.3	0.399	250.5	-8.838	345.2	314.3; surface;

Outside chronic zone

/ UM3. 12/1/2022 9:02:42 AM

Case 6; ambient file C:\Plumes\SCTP-06.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.44	90.0	0.0	21.1	0.0	0.0	0.44	90.0	0.0003	-1.966
15.0	0.44	90.0	0.0	21.1	0.0	0.0	0.44	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.6876	4.3	45.0	135.0	10.0	16.0	24.0	242.0	42.6	9.58	1.00E-3	23.0	100.0

Simulation:

Froude number: 40.79; effleunt density (sigma-T) -2.398; effleunt velocity 1.217(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	42.6	0.44	0.688	100.0	1.0	0.0	0.0	0.0;
10	42.49	0.44	0.815	82.03	1.219	-0.0801	0.0867	0.0447;
20	42.38	0.44	0.968	67.3	1.486	-0.158	0.186	0.0982;
30	42.27	0.44	1.142	55.21	1.811	-0.237	0.301	0.163;
40	42.16	0.44	1.337	45.29	2.208	-0.314	0.436	0.242;
50	42.05	0.44	1.551	37.15	2.691	-0.392	0.596	0.337;
60	41.94	0.44	1.786	30.48	3.28	-0.47	0.786	0.455;
70	41.82	0.44	2.04	25.0	3.998	-0.549	1.02	0.601;
80	41.7	0.44	2.313	20.51	4.874	-0.632	1.311	0.787;
90	41.58	0.44	2.607	16.83	5.941	-0.72	1.681	1.027;
100	41.45	0.44	2.925	13.8	7.242	-0.814	2.16	1.34;
110	41.3	0.44	3.268	11.32	8.828	-0.916	2.787	1.755;
120	41.14	0.44	3.641	9.289	10.76	-1.028	3.613	2.306;
130	40.97	0.44	4.048	7.62	13.12	-1.15	4.709	3.042;
140	40.77	0.44	4.492	6.251	15.99	-1.283	6.166	4.026;
150	40.56	0.44	4.979	5.128	19.49	-1.43	8.108	5.343;
160	40.33	0.44	5.513	4.207	23.76	-1.591	10.7	7.106;
170	40.07	0.44	6.101	3.451	28.96	-1.768	14.15	9.464;
180	39.78	0.44	6.748	2.831	35.31	-1.962	18.75	12.61;
189	39.49	0.44	7.386	2.369	42.19	-2.153	24.18	16.34; acute zone;
190	39.46	0.44	7.461	2.323	43.04	-2.175	24.87	16.81;
200	39.1	0.44	8.246	1.905	52.46	-2.406	32.99	22.39;
210	38.7	0.44	9.112	1.563	63.95	-2.657	43.73	29.78;
220	38.25	0.44	10.07	1.282	77.96	-2.929	57.87	39.53;
230	37.75	0.44	11.12	1.052	95.03	-3.221	76.38	52.29;
234	37.53	0.44	11.57	0.972	102.9	-3.344	85.26	58.42; merging;
240	37.01	0.44	12.41	0.863	115.8	-3.624	107.8	73.96;
250	35.93	0.44	14.25	0.708	141.2	-4.153	157.5	108.3;
260	34.62	0.44	16.67	0.581	172.1	-4.723	222.8	153.5;
263	34.17	0.44	17.52	0.547	182.7	-4.901	246.0	169.5; chronic zone;
270	33.02	0.44	19.75	0.476	209.8	-5.328	307.2	211.8;
280	31.06	0.44	23.62	0.391	255.8	-5.961	414.8	286.2;
290	28.66	0.44	28.42	0.321	311.8	-6.616	550.3	380.0;
300	25.74	0.44	34.34	0.263	380.1	-7.285	719.3	496.9;
310	22.16	0.44	41.62	0.216	463.3	-7.966	928.7	641.9;
312	21.36	0.44	43.26	0.207	482.0	-8.104	976.2	674.7; surface;

Outside chronic zone



/ UM3. 12/1/2022 9:05:05 AM

Case 7; ambient file C:\Plumes\SCTP-07.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.11	90.0	0.0	21.1	0.0	0.0	0.11	90.0	0.0003	-1.966
15.0	0.11	90.0	0.0	21.1	0.0	0.0	0.11	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.6876	4.3	45.0	135.0	10.0	16.0	24.0	242.0	42.6	9.58	1.00E-3	23.0	100.0

Simulation:

Froude number: 40.79; effleunt density (sigma-T) -2.398; effleunt velocity 1.217 (m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	42.6	0.11	0.688	100.0	1.0	0.0	0.0	0.0;
10	42.39	0.11	0.826	82.03	1.219	-0.151	0.154	0.0848;
20	42.14	0.11	1.001	67.3	1.486	-0.325	0.34	0.204;
30	41.86	0.11	1.211	55.21	1.811	-0.525	0.563	0.37;
40	41.54	0.11	1.461	45.29	2.208	-0.752	0.832	0.601;
50	41.18	0.11	1.76	37.15	2.691	-1.004	1.151	0.912;
60	40.79	0.11	2.114	30.48	3.28	-1.276	1.523	1.323;
70	40.38	0.11	2.529	25.0	3.998	-1.565	1.95	1.853;
80	39.95	0.11	3.014	20.51	4.874	-1.865	2.44	2.527;
90	39.51	0.11	3.573	16.83	5.941	-2.175	2.998	3.371;
100	39.05	0.11	4.213	13.8	7.242	-2.49	3.635	4.42;
110	38.59	0.11	4.937	11.32	8.828	-2.809	4.363	5.714;
120	38.12	0.11	5.746	9.289	10.76	-3.132	5.203	7.308;
130	37.64	0.11	6.644	7.62	13.12	-3.459	6.182	9.28;
140	37.14	0.11	7.631	6.251	15.99	-3.793	7.341	11.73;
150	36.62	0.11	8.71	5.128	19.49	-4.137	8.735	14.81;
160	36.08	0.11	9.886	4.207	23.76	-4.495	10.44	18.72;
170	35.49	0.11	11.17	3.451	28.96	-4.87	12.55	23.72;
180	34.86	0.11	12.56	2.831	35.31	-5.267	15.2	30.16;
182	34.73	0.11	12.85	2.721	36.73	-5.349	15.81	31.66; merging;
190	33.85	0.11	14.4	2.323	43.04	-5.878	20.1	42.35;
195	33.2	0.11	15.65	2.104	47.52	-6.249	23.48	50.87; acute zone;
200	32.49	0.11	17.11	1.905	52.46	-6.645	27.41	60.87;
210	30.84	0.11	20.69	1.563	63.95	-7.51	37.31	86.34;
220	28.8	0.11	25.27	1.282	77.96	-8.473	50.56	120.9;
230	26.28	0.11	31.02	1.052	95.03	-9.527	68.04	166.9;
240	23.18	0.11	38.15	0.863	115.8	-10.66	90.72	227.2;
246	20.97	0.11	43.2	0.766	130.5	-11.37	107.3	271.5; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 44.20 m

conc	dilutn	width	distnce	time				
(%)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
0.76305	131.0	44.33	34.0	0.00282	0.0	0.0	0.11	3.00E-4
0.76395	130.8	44.56	36.0	0.00787	0.0	0.0	0.11	3.00E-4
0.76443	130.8	44.79	38.0	0.0129	0.0	0.0	0.11	3.00E-4
0.76474	130.7	45.02	40.0	0.018	0.0	0.0	0.11	3.00E-4
0.76495	130.7	45.25	42.0	0.023	0.0	0.0	0.11	3.00E-4
0.76512	130.6	45.47	44.0	0.0281	0.0	0.0	0.11	3.00E-4
0.76525	130.6	45.7	46.0	0.0331	0.0	0.0	0.11	3.00E-4
0.76535	130.6	45.92	48.0	0.0382	0.0	0.0	0.11	3.00E-4
0.76544	130.6	46.14	50.0	0.0432	0.0	0.0	0.11	3.00E-4
0.76552	130.6	46.36	52.0	0.0483	0.0	0.0	0.11	3.00E-4
0.76558	130.6	46.58	54.0	0.0533	0.0	0.0	0.11	3.00E-4
0.76564	130.6	46.8	56.0	0.0584	0.0	0.0	0.11	3.00E-4
0.76569	130.5	47.02	58.0	0.0634	0.0	0.0	0.11	3.00E-4
0.76573	130.5	47.24	60.0	0.0685	0.0	0.0	0.11	3.00E-4
0.76577	130.5	47.45	62.0	0.0735	0.0	0.0	0.11	3.00E-4
0.7658	130.5	47.67	64.0	0.0786	0.0	0.0	0.11	3.00E-4
0.76583	130.5	47.88	66.0	0.0836	0.0	0.0	0.11	3.00E-4
0.76585	130.5	48.09	68.0	0.0887	0.0	0.0	0.11	3.00E-4
0.76585	130.5	48.31	70.0	0.0937	0.0	0.0	0.11	3.00E-4
0.76585	130.5	48.52	72.0	0.0988	0.0	0.0	0.11	3.00E-4
0.76583	130.5	48.73	74.0	0.104	0.0	0.0	0.11	3.00E-4

count: 21

/ UM3. 12/1/2022 9:12:57 AM

Case 8; ambient file C:\Plumes\SCTP-08.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-sp	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.33	90.0	0.0	10.7	0.0	0.0	0.33	90.0	0.0003	-0.3
15.0	0.33	90.0	0.0	10.7	0.0	0.0	0.33	90.0	0.0003	-0.3

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.6941	4.3	45.0	135.0	10.0	16.0	24.0	242.0	43.6	9.98	1.00E-3	19.3	100.0

Simulation:

Froude number: 24.02; effleunt density (sigma-T) -1.59; effleunt velocity 1.244(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	43.6	0.33	0.694	100.0	1.0	0.0	0.0	0.0;
10	43.46	0.33	0.826	82.03	1.219	-0.102	0.108	0.0558;
20	43.31	0.33	0.989	67.3	1.485	-0.206	0.232	0.125;
30	43.16	0.33	1.177	55.21	1.81	-0.312	0.376	0.212;
40	43.01	0.33	1.392	45.29	2.206	-0.42	0.542	0.318;
50	42.85	0.33	1.637	37.15	2.689	-0.528	0.734	0.449;
60	42.7	0.33	1.909	30.48	3.278	-0.636	0.957	0.608;
70	42.54	0.33	2.211	25.0	3.995	-0.744	1.219	0.803;
80	42.39	0.33	2.54	20.51	4.87	-0.855	1.532	1.045;
90	42.22	0.33	2.898	16.83	5.936	-0.968	1.914	1.348;
100	42.05	0.33	3.286	13.8	7.236	-1.087	2.387	1.734;
110	41.87	0.33	3.705	11.32	8.821	-1.212	2.986	2.232;
120	41.68	0.33	4.159	9.289	10.75	-1.347	3.754	2.883;
130	41.46	0.33	4.652	7.62	13.11	-1.492	4.748	3.739;
140	41.23	0.33	5.188	6.251	15.98	-1.649	6.047	4.87;
150	40.97	0.33	5.773	5.128	19.48	-1.82	7.751	6.37;
160	40.69	0.33	6.412	4.207	23.74	-2.006	9.992	8.359;
170	40.38	0.33	7.114	3.451	28.94	-2.209	12.94	10.99;
180	40.03	0.33	7.883	2.831	35.28	-2.428	16.82	14.48;
190	39.64	0.33	8.73	2.323	43.0	-2.665	21.9	19.07;
194	39.47	0.33	9.091	2.146	46.55	-2.765	24.34	21.28; acute zone;
200	39.2	0.33	9.661	1.905	52.42	-2.92	28.53	25.09;
210	38.71	0.33	10.69	1.563	63.9	-3.193	37.14	32.92;
219	38.21	0.33	11.7	1.308	76.36	-3.452	47.01	41.92; merging;
220	38.13	0.33	11.82	1.282	77.89	-3.489	48.55	43.33;
230	37.15	0.33	13.43	1.052	94.95	-3.948	70.03	62.97;
240	35.94	0.33	15.62	0.863	115.7	-4.444	98.22	88.79;
250	34.45	0.33	18.44	0.708	141.1	-4.967	134.4	122.0;
260	32.63	0.33	22.01	0.581	172.0	-5.511	180.3	164.1;
270	30.4	0.33	26.45	0.476	209.6	-6.072	237.8	217.0;
271	30.16	0.33	26.95	0.467	213.8	-6.129	244.3	222.9; chronic zone;
280	27.67	0.33	31.96	0.391	255.6	-6.644	309.3	282.8;
290	24.33	0.33	38.73	0.321	311.5	-7.226	397.7	364.2;
297	21.56	0.33	44.37	0.279	357.8	-7.636	471.5	432.2; surface;

Outside chronic zone

/ UM3. 12/1/2022 9:15:55 AM

Case 9; ambient file C:\Plumes\SCTP-09.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.16	90.0	0.0	10.7	0.0	0.0	0.16	90.0	0.0003	-0.3
15.0	0.16	90.0	0.0	10.7	0.0	0.0	0.16	90.0	0.0003	-0.3

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.6941	4.3	45.0	135.0	10.0	16.0	24.0	242.0	43.6	9.98	1.00E-3	19.3	100.0

Simulation:

Froude number: 24.02; effleunt density (sigma-T) -1.59; effleunt velocity 1.244(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	43.6	0.16	0.694	100.0	1.0	0.0	0.0	0.0;
10	43.4	0.16	0.832	82.03	1.219	-0.141	0.145	0.0772;
20	43.18	0.16	1.005	67.3	1.485	-0.3	0.319	0.183;
30	42.92	0.16	1.211	55.21	1.81	-0.477	0.526	0.328;
40	42.65	0.16	1.456	45.29	2.206	-0.669	0.769	0.518;
50	42.36	0.16	1.744	37.15	2.689	-0.873	1.05	0.765;
60	42.06	0.16	2.08	30.48	3.278	-1.085	1.372	1.078;
70	41.74	0.16	2.469	25.0	3.995	-1.304	1.74	1.471;
80	41.42	0.16	2.914	20.51	4.87	-1.526	2.161	1.957;
90	41.1	0.16	3.418	16.83	5.936	-1.751	2.643	2.557;
100	40.77	0.16	3.983	13.8	7.236	-1.977	3.198	3.295;
110	40.43	0.16	4.609	11.32	8.821	-2.207	3.846	4.205;
120	40.08	0.16	5.297	9.289	10.75	-2.44	4.613	5.334;
130	39.72	0.16	6.05	7.62	13.11	-2.68	5.534	6.75;
140	39.34	0.16	6.869	6.251	15.98	-2.93	6.661	8.543;
150	38.93	0.16	7.76	5.128	19.48	-3.192	8.059	10.84;
160	38.49	0.16	8.728	4.207	23.74	-3.468	9.816	13.79;
170	38.01	0.16	9.781	3.451	28.94	-3.762	12.04	17.62;
180	37.48	0.16	10.93	2.831	35.28	-4.074	14.88	22.58;
190	36.89	0.16	12.18	2.323	43.0	-4.407	18.5	29.01;
191	36.83	0.16	12.31	2.277	43.86	-4.441	18.91	29.75; merging;
198	36.14	0.16	13.48	1.982	50.38	-4.807	23.67	38.3; acute zone;
200	35.92	0.16	13.88	1.905	52.42	-4.92	25.28	41.2;
210	34.65	0.16	16.3	1.563	63.9	-5.522	34.82	58.52;
220	33.1	0.16	19.46	1.282	77.89	-6.178	47.37	81.51;
230	31.18	0.16	23.49	1.052	94.95	-6.881	63.68	111.6;
240	28.81	0.16	28.53	0.863	115.7	-7.624	84.54	150.3;
250	25.89	0.16	34.76	0.708	141.1	-8.398	110.9	199.4;
260	22.29	0.16	42.44	0.581	172.0	-9.196	143.9	261.1;
262	21.47	0.16	44.18	0.558	178.9	-9.357	151.4	275.1; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 44.50 m

conc	dilutn	width	distnce	time				
(%)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
0.55588	179.7	44.64	48.0	0.00308	0.0	0.0	0.16	3.00E-4
0.55636	179.5	44.8	50.0	0.00655	0.0	0.0	0.16	3.00E-4
0.55667	179.4	44.96	52.0	0.01	0.0	0.0	0.16	3.00E-4
0.55688	179.3	45.12	54.0	0.0135	0.0	0.0	0.16	3.00E-4
0.55703	179.3	45.27	56.0	0.017	0.0	0.0	0.16	3.00E-4
0.55715	179.3	45.43	58.0	0.0204	0.0	0.0	0.16	3.00E-4
0.55725	179.2	45.59	60.0	0.0239	0.0	0.0	0.16	3.00E-4
0.55733	179.2	45.74	62.0	0.0274	0.0	0.0	0.16	3.00E-4
0.5574	179.2	45.9	64.0	0.0309	0.0	0.0	0.16	3.00E-4
0.55746	179.2	46.05	66.0	0.0343	0.0	0.0	0.16	3.00E-4
0.55751	179.1	46.21	68.0	0.0378	0.0	0.0	0.16	3.00E-4
0.55756	179.1	46.36	70.0	0.0413	0.0	0.0	0.16	3.00E-4
0.5576	179.1	46.51	72.0	0.0447	0.0	0.0	0.16	3.00E-4
0.55763	179.1	46.66	74.0	0.0482	0.0	0.0	0.16	3.00E-4

count: 14

/ UM3. 12/1/2022 9:21:03 AM

Case 10; ambient file C:\Plumes\SCTP-10.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.59	90.0	0.0	12.4	0.0	0.0	0.59	90.0	0.0003	-0.485
16.0	0.59	90.0	0.0	12.4	0.0	0.0	0.59	90.0	0.0003	-0.485

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.6588	4.3	45.0	135.0	10.0	16.0	24.0	242.0	46.5	7.88	1.00E-3	19.1	100.0

Simulation:

Froude number: 23.78; effleunt density (sigma-T) -1.55; effleunt velocity 1.09(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	46.5	0.59	0.659	100.0	1.0	0.0	0.0	0.0;
10	46.43	0.59	0.773	82.04	1.219	-0.0529	0.0593	0.0329;
20	46.36	0.59	0.902	67.71	1.476	-0.1	0.125	0.0689;
30	46.29	0.59	1.039	56.1	1.782	-0.146	0.202	0.111;
40	46.23	0.59	1.188	46.35	2.156	-0.192	0.297	0.162;
50	46.16	0.59	1.352	38.04	2.627	-0.24	0.419	0.227;
60	46.09	0.59	1.527	31.21	3.202	-0.29	0.575	0.309;
70	46.01	0.59	1.714	25.6	3.903	-0.344	0.779	0.417;
80	45.93	0.59	1.913	21.0	4.757	-0.402	1.049	0.559;
90	45.84	0.59	2.129	17.23	5.799	-0.466	1.41	0.749;
100	45.74	0.59	2.362	14.13	7.069	-0.536	1.896	1.002;
110	45.63	0.59	2.617	11.59	8.617	-0.613	2.549	1.343;
120	45.51	0.59	2.895	9.511	10.5	-0.698	3.428	1.801;
130	45.37	0.59	3.201	7.803	12.8	-0.791	4.61	2.415;
140	45.22	0.59	3.536	6.401	15.61	-0.894	6.199	3.241;
150	45.05	0.59	3.906	5.251	19.02	-1.007	8.331	4.347;
160	44.87	0.59	4.314	4.308	23.19	-1.131	11.18	5.826;
170	44.66	0.59	4.764	3.534	28.27	-1.267	14.99	7.8;
180	44.43	0.59	5.259	2.899	34.46	-1.416	20.06	10.43;
187	44.26	0.59	5.637	2.524	39.58	-1.527	24.57	12.76; acute zone;
190	44.18	0.59	5.807	2.378	42.01	-1.577	26.78	13.9;
200	43.89	0.59	6.411	1.951	51.21	-1.751	35.64	18.49;
210	43.56	0.59	7.078	1.6	62.42	-1.938	47.23	24.48;
220	43.2	0.59	7.814	1.313	76.09	-2.138	62.31	32.28;
230	42.78	0.59	8.627	1.077	92.75	-2.349	81.74	42.33;
240	42.31	0.59	9.524	0.884	113.1	-2.57	106.5	55.15;
250	41.78	0.59	10.52	0.725	137.8	-2.799	137.9	71.36;
258	41.3	0.59	11.38	0.619	161.5	-2.987	168.5	87.2; merging;
260	41.14	0.59	11.62	0.595	168.0	-3.045	179.0	92.59;
270	40.12	0.59	13.16	0.488	204.8	-3.379	247.0	127.8; chronic zone;
280	38.89	0.59	15.25	0.4	249.6	-3.721	331.8	171.6;
290	37.4	0.59	17.94	0.328	304.3	-4.069	436.8	225.9;
300	35.57	0.59	21.33	0.269	371.0	-4.421	566.5	292.9;
310	33.34	0.59	25.56	0.221	452.2	-4.776	726.0	375.3;
320	30.63	0.59	30.8	0.181	551.2	-5.134	921.6	476.3;
330	27.31	0.59	37.25	0.149	671.9	-5.493	1161.0	600.0;
340	23.28	0.59	45.17	0.122	819.1	-5.852	1453.6	751.2;
341	22.83	0.59	46.06	0.12	835.5	-5.888	1486.2	768.1; surface;

Outside chronic zone

/ UM3. 12/1/2022 9:25:29 AM

Case 11; ambient file C:\Plumes\SCTP-11.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.32	90.0	0.0	12.4	0.0	0.0	0.32	90.0	0.0003	-0.485
16.0	0.32	90.0	0.0	12.4	0.0	0.0	0.32	90.0	0.0003	-0.485

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.6876	4.3	45.0	135.0	10.0	16.0	24.0	242.0	43.4	9.58	1.00E-3	19.1	100.0

Simulation:

Froude number: 25.97; effleunt density (sigma-T) -1.55; effleunt velocity 1.217(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	43.4	0.32	0.688	100.0	1.0	0.0	0.0	0.0;
10	43.26	0.32	0.819	82.03	1.219	-0.102	0.108	0.0568;
20	43.11	0.32	0.98	67.3	1.485	-0.205	0.231	0.128;
30	42.96	0.32	1.166	55.21	1.81	-0.312	0.374	0.216;
40	42.81	0.32	1.381	45.29	2.207	-0.419	0.54	0.325;
50	42.65	0.32	1.623	37.15	2.69	-0.527	0.731	0.458;
60	42.5	0.32	1.895	30.48	3.278	-0.635	0.953	0.621;
70	42.34	0.32	2.194	25.0	3.996	-0.744	1.214	0.82;
80	42.19	0.32	2.522	20.51	4.871	-0.854	1.525	1.067;
90	42.02	0.32	2.879	16.83	5.938	-0.967	1.904	1.377;
100	41.85	0.32	3.265	13.8	7.238	-1.085	2.373	1.771;
110	41.67	0.32	3.682	11.32	8.823	-1.211	2.966	2.279;
120	41.48	0.32	4.134	9.289	10.75	-1.345	3.726	2.942;
130	41.27	0.32	4.625	7.62	13.11	-1.489	4.71	3.814;
140	41.04	0.32	5.159	6.251	15.98	-1.646	5.995	4.967;
150	40.78	0.32	5.741	5.128	19.48	-1.817	7.679	6.495;
160	40.5	0.32	6.378	4.207	23.75	-2.002	9.895	8.521;
170	40.19	0.32	7.076	3.451	28.95	-2.204	12.81	11.21;
180	39.84	0.32	7.842	2.831	35.28	-2.422	16.64	14.76;
190	39.45	0.32	8.685	2.323	43.01	-2.659	21.66	19.43;
194	39.29	0.32	9.045	2.146	46.56	-2.758	24.08	21.69; acute zone;
200	39.02	0.32	9.611	1.905	52.43	-2.913	28.22	25.57;
210	38.53	0.32	10.63	1.563	63.91	-3.185	36.74	33.56;
219	38.03	0.32	11.64	1.308	76.38	-3.443	46.5	42.74; merging;
220	37.96	0.32	11.76	1.282	77.91	-3.479	47.99	44.14;
230	36.99	0.32	13.34	1.052	94.97	-3.937	69.21	64.14;
240	35.79	0.32	15.49	0.863	115.8	-4.43	97.03	90.42;
250	34.32	0.32	18.28	0.708	141.1	-4.951	132.7	124.2;
260	32.52	0.32	21.81	0.581	172.0	-5.493	178.1	167.1;
270	30.31	0.32	26.21	0.476	209.7	-6.052	234.9	221.0;
272	29.81	0.32	27.21	0.458	218.2	-6.165	247.8	233.3; chronic zone;
280	27.6	0.32	31.65	0.391	255.6	-6.623	305.6	288.1;
290	24.3	0.32	38.36	0.321	311.6	-7.202	393.0	371.0;
297	21.55	0.32	43.94	0.279	357.9	-7.611	465.9	440.3; surface;

Outside chronic zone

Case 12; ambient file C:\Plumes\SCTP12-23-34-45.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.13	90.0	0.0	21.1	0.0	0.0	0.13	90.0	0.0003	-1.966
15.0	0.13	90.0	0.0	21.1	0.0	0.0	0.13	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.7972	4.3	45.0	135.0	10.0	16.0	24.0	242.0	42.6	17.33	1.00E-3	23.2	100.0

Simulation:

Froude number: 48.38; effleunt density (sigma-T) -2.446; effleunt velocity 1.637 (m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	42.6	0.13	0.797	100.0	1.0	0.0	0.0	0.0;
10	42.35	0.13	0.958	82.03	1.219	-0.179	0.183	0.0748;
20	42.05	0.13	1.162	67.3	1.486	-0.387	0.403	0.18;
30	41.71	0.13	1.407	55.21	1.811	-0.627	0.668	0.329;
40	41.32	0.13	1.7	45.29	2.207	-0.902	0.987	0.536;
50	40.88	0.13	2.051	37.15	2.691	-1.212	1.37	0.822;
60	40.4	0.13	2.468	30.48	3.28	-1.553	1.82	1.204;
70	39.88	0.13	2.96	25.0	3.998	-1.92	2.342	1.705;
80	39.33	0.13	3.538	20.51	4.874	-2.307	2.942	2.349;
90	38.75	0.13	4.209	16.83	5.941	-2.708	3.627	3.163;
100	38.16	0.13	4.981	13.8	7.242	-3.12	4.407	4.18;
110	37.56	0.13	5.861	11.32	8.827	-3.538	5.297	5.441;
120	36.94	0.13	6.854	9.289	10.76	-3.962	6.317	6.997;
130	36.32	0.13	7.96	7.62	13.12	-4.39	7.496	8.917;
140	35.68	0.13	9.185	6.251	15.99	-4.826	8.878	11.3;
150	35.02	0.13	10.53	5.128	19.49	-5.273	10.52	14.27;
160	34.32	0.13	12.0	4.207	23.76	-5.734	12.51	18.01;
168	33.74	0.13	13.26	3.591	27.84	-6.118	14.41	21.73; merging;
170	33.53	0.13	13.61	3.451	28.96	-6.253	15.14	23.17;
180	32.18	0.13	16.06	2.831	35.3	-7.11	20.28	33.52;
184	31.57	0.13	17.32	2.616	38.21	-7.488	22.83	38.75; acute zone;
190	30.56	0.13	19.51	2.323	43.04	-8.097	27.3	48.05;
200	28.59	0.13	24.04	1.905	52.46	-9.228	36.91	68.35;
210	26.19	0.13	29.81	1.563	63.95	-10.51	49.97	96.42;
220	23.24	0.13	37.03	1.282	77.95	-11.95	67.48	134.7;
227	20.78	0.13	43.09	1.116	89.54	-13.04	83.01	168.9; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 44.17 m

conc (%)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.11102	89.96	44.21	26.0	8.29E-4	0.0	0.0	0.13	3.00E-4
1.11232	89.86	44.4	28.0	0.0051	0.0	0.0	0.13	3.00E-4
1.11318	89.79	44.6	30.0	0.00938	0.0	0.0	0.13	3.00E-4
1.11371	89.75	44.79	32.0	0.0136	0.0	0.0	0.13	3.00E-4
1.11408	89.72	44.98	34.0	0.0179	0.0	0.0	0.13	3.00E-4
1.11435	89.7	45.18	36.0	0.0222	0.0	0.0	0.13	3.00E-4
1.11456	89.68	45.37	38.0	0.0265	0.0	0.0	0.13	3.00E-4
1.11474	89.66	45.56	40.0	0.0307	0.0	0.0	0.13	3.00E-4
1.11488	89.65	45.75	42.0	0.035	0.0	0.0	0.13	3.00E-4
1.115	89.64	45.94	44.0	0.0393	0.0	0.0	0.13	3.00E-4
1.11511	89.63	46.12	46.0	0.0436	0.0	0.0	0.13	3.00E-4
1.1152	89.63	46.31	48.0	0.0478	0.0	0.0	0.13	3.00E-4
1.11529	89.62	46.5	50.0	0.0521	0.0	0.0	0.13	3.00E-4
1.11536	89.61	46.68	52.0	0.0564	0.0	0.0	0.13	3.00E-4
1.11543	89.61	46.87	54.0	0.0607	0.0	0.0	0.13	3.00E-4
1.11549	89.6	47.05	56.0	0.0649	0.0	0.0	0.13	3.00E-4
1.11554	89.6	47.23	58.0	0.0692	0.0	0.0	0.13	3.00E-4
1.11558	89.6	47.42	60.0	0.0735	0.0	0.0	0.13	3.00E-4
1.11562	89.59	47.6	62.0	0.0778	0.0	0.0	0.13	3.00E-4
1.11566	89.59	47.78	64.0	0.082	0.0	0.0	0.13	3.00E-4
1.11568	89.59	47.96	66.0	0.0863	0.0	0.0	0.13	3.00E-4
1.1157	89.59	48.14	68.0	0.0906	0.0	0.0	0.13	3.00E-4
1.1157	89.59	48.32	70.0	0.0948	0.0	0.0	0.13	3.00E-4
1.11569	89.59	48.5	72.0	0.0991	0.0	0.0	0.13	3.00E-4
1.11567	89.59	48.68	74.0	0.103	0.0	0.0	0.13	3.00E-4

count: 25

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Case 23; ambient file C:\Plumes\SCTP12-23-34-45.001.db; Diffuser table record 2: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.13	90.0	0.0	21.1	0.0	0.0	0.13	90.0	0.0003	-1.966
15.0	0.13	90.0	0.0	21.1	0.0	0.0	0.13	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.8211	4.3	45.0	135.0	10.0	24.0	242.0	42.6	19.41	1.00E-3	23.2	100.0

Simulation:

Froude number: 50.33; effleunt density (sigma-T) -2.446; effleunt velocity 1.729(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	42.6	0.13	0.821	100.0	1.0	0.0	0.0	0.0;
10	42.34	0.13	0.987	82.03	1.219	-0.187	0.19	0.0736;
20	42.03	0.13	1.197	67.3	1.486	-0.403	0.418	0.178;
30	41.68	0.13	1.45	55.21	1.811	-0.653	0.694	0.325;
40	41.27	0.13	1.754	45.29	2.207	-0.941	1.025	0.53;
50	40.81	0.13	2.117	37.15	2.691	-1.267	1.424	0.815;
60	40.29	0.13	2.549	30.48	3.28	-1.63	1.896	1.199;
70	39.73	0.13	3.06	25.0	3.998	-2.021	2.444	1.706;
80	39.14	0.13	3.661	20.51	4.874	-2.436	3.076	2.359;
90	38.53	0.13	4.361	16.83	5.941	-2.868	3.797	3.19;
100	37.89	0.13	5.169	13.8	7.242	-3.313	4.619	4.232;
110	37.24	0.13	6.092	11.32	8.827	-3.766	5.556	5.525;
120	36.57	0.13	7.136	9.289	10.76	-4.225	6.628	7.123;
130	35.89	0.13	8.304	7.62	13.12	-4.69	7.864	9.094;
140	35.2	0.13	9.599	6.251	15.99	-5.162	9.305	11.53;
150	34.49	0.13	11.02	5.128	19.49	-5.644	11.01	14.57;
160	33.74	0.13	12.58	4.207	23.76	-6.141	13.06	18.39;
165	33.35	0.13	13.41	3.81	26.23	-6.397	14.25	20.67; merging;
170	32.74	0.13	14.42	3.451	28.96	-6.797	16.27	24.61;
180	31.24	0.13	17.28	2.831	35.3	-7.747	21.71	35.48;
182	30.91	0.13	17.98	2.721	36.73	-7.954	23.02	38.13; acute zone;
190	29.45	0.13	21.21	2.323	43.04	-8.839	29.14	50.71;
200	27.27	0.13	26.33	1.905	52.46	-10.09	39.27	71.98;
210	24.62	0.13	32.83	1.563	63.95	-11.51	53.01	101.4;
220	21.37	0.13	40.93	1.282	77.95	-13.09	71.4	141.3;
222	20.64	0.13	42.78	1.232	81.1	-13.43	75.75	150.8; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 44.07 m

conc	dilutn	width	distnce	time				
(%)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.22672	81.48	44.13	24.0	0.00118	0.0	0.0	0.13	3.00E-4
1.2282	81.38	44.32	26.0	0.00545	0.0	0.0	0.13	3.00E-4
1.2291	81.32	44.52	28.0	0.00973	0.0	0.0	0.13	3.00E-4
1.22967	81.28	44.71	30.0	0.014	0.0	0.0	0.13	3.00E-4
1.23006	81.26	44.9	32.0	0.0183	0.0	0.0	0.13	3.00E-4
1.23036	81.24	45.09	34.0	0.0225	0.0	0.0	0.13	3.00E-4
1.23059	81.22	45.29	36.0	0.0268	0.0	0.0	0.13	3.00E-4
1.23078	81.21	45.48	38.0	0.0311	0.0	0.0	0.13	3.00E-4
1.23093	81.2	45.66	40.0	0.0354	0.0	0.0	0.13	3.00E-4
1.23107	81.19	45.85	42.0	0.0396	0.0	0.0	0.13	3.00E-4
1.23118	81.18	46.04	44.0	0.0439	0.0	0.0	0.13	3.00E-4
1.23128	81.18	46.23	46.0	0.0482	0.0	0.0	0.13	3.00E-4
1.23137	81.17	46.41	48.0	0.0525	0.0	0.0	0.13	3.00E-4
1.23146	81.17	46.6	50.0	0.0567	0.0	0.0	0.13	3.00E-4
1.23153	81.16	46.78	52.0	0.061	0.0	0.0	0.13	3.00E-4
1.23159	81.16	46.97	54.0	0.0653	0.0	0.0	0.13	3.00E-4
1.23165	81.15	47.15	56.0	0.0696	0.0	0.0	0.13	3.00E-4
1.2317	81.15	47.33	58.0	0.0738	0.0	0.0	0.13	3.00E-4
1.23174	81.15	47.52	60.0	0.0781	0.0	0.0	0.13	3.00E-4
1.23178	81.14	47.7	62.0	0.0824	0.0	0.0	0.13	3.00E-4
1.23181	81.14	47.88	64.0	0.0867	0.0	0.0	0.13	3.00E-4
1.23182	81.14	48.06	66.0	0.0909	0.0	0.0	0.13	3.00E-4
1.23183	81.14	48.24	68.0	0.0952	0.0	0.0	0.13	3.00E-4
1.23182	81.14	48.41	70.0	0.0995	0.0	0.0	0.13	3.00E-4
1.23179	81.14	48.59	72.0	0.104	0.0	0.0	0.13	3.00E-4
1.23175	81.15	48.77	74.0	0.108	0.0	0.0	0.13	3.00E-4

count: 26

/ UM3.

Case 34; ambient file C:\Plumes\SCTP12-23-34-45.001.db; Diffuser table record 3: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.13	90.0	0.0	21.1	0.0	0.0	0.13	90.0	0.0003	-1.966
15.0	0.13	90.0	0.0	21.1	0.0	0.0	0.13	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.8623	4.3	45.0	135.0	10.0	24.0	242.0	42.6	23.56	1.00E-3	23.2	100.0

Simulation:

Froude number: 54.06; effleunt density (sigma-T) -2.446; effleunt velocity 1.903(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	42.6	0.13	0.862	100.0	1.0	0.0	0.0	0.0;
10	42.32	0.13	1.037	82.03	1.219	-0.199	0.202	0.0713;
20	41.99	0.13	1.258	67.3	1.486	-0.431	0.445	0.173;
30	41.61	0.13	1.525	55.21	1.811	-0.7	0.739	0.316;
40	41.17	0.13	1.846	45.29	2.207	-1.01	1.092	0.518;
50	40.67	0.13	2.23	37.15	2.691	-1.364	1.518	0.798;
60	40.1	0.13	2.688	30.48	3.28	-1.763	2.026	1.183;
70	39.48	0.13	3.232	25.0	3.998	-2.199	2.621	1.696;
80	38.82	0.13	3.873	20.51	4.874	-2.665	3.309	2.364;
90	38.12	0.13	4.624	16.83	5.941	-3.155	4.097	3.219;
100	37.39	0.13	5.494	13.8	7.242	-3.663	4.996	4.299;
110	36.64	0.13	6.494	11.32	8.827	-4.182	6.019	5.647;
120	35.88	0.13	7.631	9.289	10.76	-4.71	7.187	7.315;
130	35.1	0.13	8.909	7.62	13.12	-5.245	8.526	9.374;
140	34.31	0.13	10.33	6.251	15.99	-5.786	10.08	11.92;
150	33.5	0.13	11.91	5.128	19.49	-6.337	11.9	15.07;
160	32.65	0.13	13.63	4.207	23.76	-6.902	14.07	19.02;
161	32.56	0.13	13.81	4.125	24.23	-6.96	14.31	19.47; merging;
170	31.24	0.13	16.06	3.451	28.96	-7.826	18.25	26.94;
178	29.84	0.13	18.87	2.946	33.93	-8.72	22.9	36.04; acute zone;
180	29.46	0.13	19.69	2.831	35.3	-8.96	24.25	38.72;
190	27.32	0.13	24.55	2.323	43.04	-10.26	32.42	55.23;
200	24.74	0.13	30.82	1.905	52.46	-11.75	43.51	78.22;
210	21.6	0.13	38.73	1.563	63.95	-13.44	58.47	109.9;
214	20.16	0.13	42.42	1.444	69.22	-14.16	65.79	125.6; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 43.96 m

conc	dilutn	width	distnce	time				
(%)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.43816	69.5	44.11	22.0	0.00318	0.0	0.0	0.13	3.00E-4
1.4396	69.43	44.3	24.0	0.00745	0.0	0.0	0.13	3.00E-4
1.44044	69.39	44.5	26.0	0.0117	0.0	0.0	0.13	3.00E-4
1.44099	69.36	44.69	28.0	0.016	0.0	0.0	0.13	3.00E-4
1.44139	69.34	44.88	30.0	0.0203	0.0	0.0	0.13	3.00E-4
1.44169	69.33	45.07	32.0	0.0245	0.0	0.0	0.13	3.00E-4
1.44194	69.32	45.26	34.0	0.0288	0.0	0.0	0.13	3.00E-4
1.44214	69.31	45.45	36.0	0.0331	0.0	0.0	0.13	3.00E-4
1.44231	69.3	45.64	38.0	0.0374	0.0	0.0	0.13	3.00E-4
1.44246	69.29	45.83	40.0	0.0416	0.0	0.0	0.13	3.00E-4
1.44259	69.29	46.02	42.0	0.0459	0.0	0.0	0.13	3.00E-4
1.4427	69.28	46.2	44.0	0.0502	0.0	0.0	0.13	3.00E-4
1.4428	69.28	46.39	46.0	0.0545	0.0	0.0	0.13	3.00E-4
1.44289	69.27	46.57	48.0	0.0587	0.0	0.0	0.13	3.00E-4
1.44297	69.27	46.76	50.0	0.063	0.0	0.0	0.13	3.00E-4
1.44304	69.27	46.94	52.0	0.0673	0.0	0.0	0.13	3.00E-4
1.44311	69.26	47.12	54.0	0.0716	0.0	0.0	0.13	3.00E-4
1.44316	69.26	47.31	56.0	0.0758	0.0	0.0	0.13	3.00E-4
1.44321	69.26	47.49	58.0	0.0801	0.0	0.0	0.13	3.00E-4
1.44324	69.26	47.67	60.0	0.0844	0.0	0.0	0.13	3.00E-4
1.44327	69.25	47.85	62.0	0.0886	0.0	0.0	0.13	3.00E-4
1.44328	69.25	48.03	64.0	0.0929	0.0	0.0	0.13	3.00E-4
1.44328	69.25	48.21	66.0	0.0972	0.0	0.0	0.13	3.00E-4
1.44325	69.26	48.38	68.0	0.101	0.0	0.0	0.13	3.00E-4
1.44321	69.26	48.56	70.0	0.106	0.0	0.0	0.13	3.00E-4
1.44315	69.26	48.74	72.0	0.11	0.0	0.0	0.13	3.00E-4
1.44306	69.26	48.91	74.0	0.114	0.0	0.0	0.13	3.00E-4

count: 27



/ UM3.

Case 45; ambient file C:\Plumes\SCTP12-23-34-45.001.db; Diffuser table record 4: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.13	90.0	0.0	21.1	0.0	0.0	0.13	90.0	0.0003	-1.966
15.0	0.13	90.0	0.0	21.1	0.0	0.0	0.13	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.9454	4.3	45.0	135.0	10.0	24.0	242.0	42.6	37.31	1.00E-3	23.2	100.0

Simulation:

Froude number: 68.01; effleunt density (sigma-T) -2.446; effleunt velocity 2.506(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	42.6	0.13	0.945	100.0	1.0	0.0	0.0	0.0;
10	42.28	0.13	1.138	82.03	1.219	-0.226	0.229	0.0616;
20	41.9	0.13	1.382	67.3	1.486	-0.492	0.505	0.15;
30	41.46	0.13	1.678	55.21	1.811	-0.805	0.839	0.276;
40	40.95	0.13	2.034	45.29	2.207	-1.168	1.242	0.456;
50	40.35	0.13	2.463	37.15	2.691	-1.589	1.727	0.709;
60	39.67	0.13	2.978	30.48	3.28	-2.072	2.31	1.062;
70	38.89	0.13	3.593	25.0	3.998	-2.62	3.01	1.552;
80	38.03	0.13	4.324	20.51	4.874	-3.226	3.835	2.212;
90	37.09	0.13	5.189	16.83	5.941	-3.881	4.792	3.08;
100	36.1	0.13	6.203	13.8	7.242	-4.575	5.892	4.2;
110	35.07	0.13	7.385	11.32	8.827	-5.298	7.147	5.624;
120	34.0	0.13	8.747	9.289	10.76	-6.042	8.575	7.409;
130	32.9	0.13	10.3	7.62	13.12	-6.8	10.2	9.627;
140	31.78	0.13	12.06	6.251	15.99	-7.569	12.06	12.37;
150	30.64	0.13	14.03	5.128	19.49	-8.348	14.2	15.75;
152	30.41	0.13	14.45	4.929	20.28	-8.505	14.67	16.52; merging;
160	28.85	0.13	16.73	4.207	23.76	-9.558	18.05	22.23;
167	27.25	0.13	19.51	3.662	27.29	-10.62	21.83	28.88; acute zone;
170	26.51	0.13	20.94	3.451	28.96	-11.11	23.71	32.24;
180	23.75	0.13	26.75	2.831	35.3	-12.88	31.26	46.22;
190	20.49	0.13	34.41	2.323	43.04	-14.89	41.33	65.61;
195	18.63	0.13	39.03	2.104	47.51	-16.0	47.56	77.9; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 42.93 m

conc	dilutn	width	distnce	time	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
(%)		(m)	(m)	(hrs)				
2.09405	47.73	43.0	16.0	0.0015	0.0	0.0	0.13	3.00E-4
2.09659	47.67	43.19	18.0	0.00578	0.0	0.0	0.13	3.00E-4
2.09807	47.64	43.39	20.0	0.0101	0.0	0.0	0.13	3.00E-4
2.09901	47.62	43.58	22.0	0.0143	0.0	0.0	0.13	3.00E-4
2.09966	47.6	43.77	24.0	0.0186	0.0	0.0	0.13	3.00E-4
2.10015	47.59	43.96	26.0	0.0229	0.0	0.0	0.13	3.00E-4
2.10054	47.58	44.15	28.0	0.0271	0.0	0.0	0.13	3.00E-4
2.10085	47.58	44.33	30.0	0.0314	0.0	0.0	0.13	3.00E-4
2.10112	47.57	44.52	32.0	0.0357	0.0	0.0	0.13	3.00E-4
2.10134	47.57	44.71	34.0	0.04	0.0	0.0	0.13	3.00E-4
2.10154	47.56	44.89	36.0	0.0442	0.0	0.0	0.13	3.00E-4
2.10171	47.56	45.08	38.0	0.0485	0.0	0.0	0.13	3.00E-4
2.10186	47.55	45.26	40.0	0.0528	0.0	0.0	0.13	3.00E-4
2.10199	47.55	45.45	42.0	0.0571	0.0	0.0	0.13	3.00E-4
2.10212	47.55	45.63	44.0	0.0613	0.0	0.0	0.13	3.00E-4
2.10222	47.55	45.81	46.0	0.0656	0.0	0.0	0.13	3.00E-4
2.10232	47.54	45.99	48.0	0.0699	0.0	0.0	0.13	3.00E-4
2.1024	47.54	46.17	50.0	0.0742	0.0	0.0	0.13	3.00E-4
2.10247	47.54	46.35	52.0	0.0784	0.0	0.0	0.13	3.00E-4
2.10253	47.54	46.53	54.0	0.0827	0.0	0.0	0.13	3.00E-4
2.10257	47.54	46.71	56.0	0.087	0.0	0.0	0.13	3.00E-4
2.10259	47.54	46.89	58.0	0.0912	0.0	0.0	0.13	3.00E-4
2.10258	47.54	47.07	60.0	0.0955	0.0	0.0	0.13	3.00E-4
2.10255	47.54	47.24	62.0	0.0998	0.0	0.0	0.13	3.00E-4
2.10249	47.54	47.42	64.0	0.104	0.0	0.0	0.13	3.00E-4
2.1024	47.54	47.59	66.0	0.108	0.0	0.0	0.13	3.00E-4
2.10227	47.55	47.77	68.0	0.113	0.0	0.0	0.13	3.00E-4
2.1021	47.55	47.94	70.0	0.117	0.0	0.0	0.13	3.00E-4
2.10188	47.55	48.12	72.0	0.121	0.0	0.0	0.13	3.00E-4
2.10162	47.56	48.29	74.0	0.125	0.0	0.0	0.13	3.00E-4

count: 30

; 2:40:17 PM. amb fills: 2

/ UM3. 12/15/2022 2:47:32 PM

Case 13; ambient file C:\Plumes\SCTP13-24-35-46.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.57	90.0	0.0	21.1	0.0	0.0	0.57	90.0	0.0003	-1.966
15.0	0.57	90.0	0.0	21.1	0.0	0.0	0.57	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChronicMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.7972	4.3	45.0	135.0	10.0	16.0	24.0	242.0	42.6	17.33	1.00E-3	23.2	100.0

Simulation:

Froude number: 48.38; effleunt density (sigma-T) -2.446; effleunt velocity 1.637(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	42.6	0.57	0.797	100.0	1.0	0.0	0.0	0.0;
10	42.46	0.57	0.945	82.03	1.219	-0.0958	0.103	0.0398;
20	42.33	0.57	1.124	67.3	1.486	-0.19	0.221	0.0875;
30	42.2	0.57	1.328	55.21	1.811	-0.284	0.359	0.146;
40	42.07	0.57	1.557	45.29	2.207	-0.378	0.519	0.216;
50	41.93	0.57	1.81	37.15	2.691	-0.471	0.708	0.302;
60	41.8	0.57	2.087	30.48	3.28	-0.565	0.933	0.407;
70	41.66	0.57	2.388	25.0	3.998	-0.661	1.207	0.538;
80	41.52	0.57	2.712	20.51	4.874	-0.76	1.546	0.703;
90	41.37	0.57	3.062	16.83	5.941	-0.865	1.976	0.916;
100	41.22	0.57	3.439	13.8	7.242	-0.977	2.529	1.193;
110	41.04	0.57	3.846	11.32	8.827	-1.099	3.25	1.559;
120	40.85	0.57	4.289	9.289	10.76	-1.231	4.198	2.045;
130	40.65	0.57	4.771	7.62	13.12	-1.375	5.454	2.693;
140	40.42	0.57	5.297	6.251	15.99	-1.534	7.123	3.56;
150	40.17	0.57	5.874	5.128	19.49	-1.708	9.346	4.72;
160	39.89	0.57	6.507	4.207	23.76	-1.899	12.31	6.274;
170	39.59	0.57	7.202	3.451	28.96	-2.11	16.27	8.356;
180	39.25	0.57	7.967	2.831	35.3	-2.341	21.55	11.14;
184	39.1	0.57	8.295	2.616	38.21	-2.439	24.12	12.5; acute zone;
190	38.87	0.57	8.81	2.323	43.04	-2.593	28.58	14.86;
200	38.46	0.57	9.739	1.905	52.46	-2.87	37.94	19.82;
210	37.99	0.57	10.76	1.563	63.95	-3.172	50.37	26.42;
217	37.63	0.57	11.54	1.361	73.46	-3.399	61.4	32.28; merging;
220	37.4	0.57	11.91	1.282	77.95	-3.541	69.02	36.33;
230	36.42	0.57	13.57	1.052	95.02	-4.13	105.0	55.46;
240	35.23	0.57	15.79	0.863	115.8	-4.794	154.4	81.78;
250	33.77	0.57	18.64	0.708	141.2	-5.534	221.4	117.5;
253	33.28	0.57	19.64	0.667	149.8	-5.769	245.5	130.4; chronic zone;
260	32.0	0.57	22.24	0.581	172.1	-6.342	310.5	165.0;
270	29.83	0.57	26.73	0.476	209.8	-7.209	427.0	227.2;
280	27.17	0.57	32.27	0.391	255.8	-8.125	576.9	307.2;
290	23.93	0.57	39.09	0.321	311.8	-9.078	767.0	408.7;
296	21.66	0.57	43.91	0.285	351.1	-9.665	903.8	481.7; surface;

Outside chronic zone

/ UM3.

Case 24; ambient file C:\Plumes\SCTF13-24-35-46.001.db; Diffuser table record 2: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.57	90.0	0.0	21.1	0.0	0.0	0.57	90.0	0.0003	-1.966
15.0	0.57	90.0	0.0	21.1	0.0	0.0	0.57	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.8211	4.3	45.0	135.0	10.0	24.0	242.0	42.6	19.41	1.00E-3	23.2	100.0

Simulation:

Froude number: 50.33; effleunt density (sigma-T) -2.446; effleunt velocity 1.729(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	42.6	0.57	0.821	100.0	1.0	0.0	0.0	0.0;
10	42.45	0.57	0.975	82.03	1.219	-0.103	0.111	0.0405;
20	42.31	0.57	1.161	67.3	1.486	-0.205	0.237	0.0895;
30	42.16	0.57	1.373	55.21	1.811	-0.308	0.384	0.15;
40	42.02	0.57	1.613	45.29	2.207	-0.41	0.556	0.223;
50	41.88	0.57	1.88	37.15	2.691	-0.512	0.756	0.311;
60	41.73	0.57	2.174	30.48	3.28	-0.614	0.994	0.42;
70	41.58	0.57	2.493	25.0	3.998	-0.718	1.28	0.554;
80	41.43	0.57	2.838	20.51	4.874	-0.825	1.633	0.723;
90	41.27	0.57	3.21	16.83	5.941	-0.938	2.076	0.939;
100	41.1	0.57	3.612	13.8	7.242	-1.058	2.642	1.22;
110	40.92	0.57	4.046	11.32	8.827	-1.187	3.377	1.59;
120	40.72	0.57	4.517	9.289	10.76	-1.327	4.34	2.079;
130	40.5	0.57	5.029	7.62	13.12	-1.481	5.61	2.73;
140	40.26	0.57	5.589	6.251	15.99	-1.649	7.294	3.6;
150	39.99	0.57	6.201	5.128	19.49	-1.833	9.534	4.764;
160	39.7	0.57	6.872	4.207	23.76	-2.036	12.52	6.323;
170	39.38	0.57	7.61	3.451	28.96	-2.259	16.5	8.41;
180	39.02	0.57	8.421	2.831	35.3	-2.503	21.8	11.2;
184	38.87	0.57	8.768	2.616	38.21	-2.607	24.39	12.57; acute zone;
190	38.62	0.57	9.314	2.323	43.04	-2.771	28.87	14.93;
200	38.18	0.57	10.3	1.905	52.46	-3.064	38.27	19.91;
210	37.69	0.57	11.38	1.563	63.95	-3.383	50.76	26.53;
212	37.59	0.57	11.61	1.502	66.53	-3.451	53.71	28.09; merging;
220	36.88	0.57	12.77	1.282	77.95	-3.89	75.06	39.43;
230	35.8	0.57	14.73	1.052	95.02	-4.539	112.6	59.4;
240	34.48	0.57	17.3	0.863	115.8	-5.273	164.4	86.95;
250	32.87	0.57	20.56	0.708	141.2	-6.091	234.6	124.3;
251	32.69	0.57	20.93	0.694	144.0	-6.177	242.8	128.7; chronic zone;
260	30.9	0.57	24.64	0.581	172.1	-6.986	328.1	174.2;
270	28.49	0.57	29.71	0.476	209.8	-7.947	450.5	239.4;
280	25.56	0.57	35.95	0.391	255.8	-8.962	607.9	323.4;
290	21.97	0.57	43.63	0.321	311.8	-10.02	807.7	430.1;
291	21.57	0.57	44.48	0.314	318.0	-10.13	830.3	442.1; surface;

Outside chronic zone

/ UM3.

Case 35; ambient file C:\Plumes\SCTP13-24-35-46.001.db; Diffuser table record 3: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.57	90.0	0.0	21.1	0.0	0.0	0.57	90.0	0.0003	-1.966
15.0	0.57	90.0	0.0	21.1	0.0	0.0	0.57	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChronicMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.8623	4.3	45.0	135.0	10.0	24.0	242.0	42.6	23.56	1.00E-3	23.2	100.0

Simulation:

Froude number: 54.06; effleunt density (sigma-T) -2.446; effleunt velocity 1.903(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	42.6	0.57	0.862	100.0	1.0	0.0	0.0	0.0;
10	42.44	0.57	1.025	82.03	1.219	-0.116	0.124	0.0416;
20	42.27	0.57	1.223	67.3	1.486	-0.233	0.267	0.0926;
30	42.1	0.57	1.452	55.21	1.811	-0.351	0.432	0.155;
40	41.94	0.57	1.711	45.29	2.207	-0.47	0.623	0.232;
50	41.77	0.57	2.003	37.15	2.691	-0.588	0.845	0.326;
60	41.6	0.57	2.325	30.48	3.28	-0.707	1.106	0.44;
70	41.43	0.57	2.678	25.0	3.998	-0.827	1.417	0.581;
80	41.26	0.57	3.061	20.51	4.874	-0.949	1.795	0.757;
90	41.07	0.57	3.475	16.83	5.941	-1.077	2.264	0.98;
100	40.88	0.57	3.923	13.8	7.242	-1.212	2.855	1.267;
110	40.68	0.57	4.407	11.32	8.827	-1.357	3.615	1.642;
120	40.46	0.57	4.931	9.289	10.76	-1.513	4.602	2.137;
130	40.21	0.57	5.5	7.62	13.12	-1.683	5.897	2.793;
140	39.95	0.57	6.121	6.251	15.99	-1.869	7.606	3.667;
150	39.65	0.57	6.8	5.128	19.49	-2.073	9.872	4.835;
160	39.33	0.57	7.543	4.207	23.76	-2.296	12.88	6.397;
170	38.98	0.57	8.359	3.451	28.96	-2.541	16.89	8.487;
180	38.58	0.57	9.255	2.831	35.3	-2.811	22.23	11.28;
183	38.46	0.57	9.541	2.668	37.47	-2.896	24.15	12.29; acute zone;
190	38.15	0.57	10.24	2.323	43.04	-3.106	29.33	15.02;
200	37.66	0.57	11.33	1.905	52.46	-3.429	38.79	20.01;
203	37.51	0.57	11.67	1.795	55.67	-3.532	42.19	21.8; merging;
210	36.91	0.57	12.67	1.563	63.95	-3.922	56.52	29.38;
220	35.84	0.57	14.6	1.282	77.95	-4.59	85.44	44.7;
230	34.55	0.57	17.15	1.052	95.02	-5.358	125.9	66.18;
240	32.98	0.57	20.38	0.863	115.8	-6.23	181.9	95.91;
249	31.28	0.57	23.99	0.722	138.4	-7.101	249.2	131.7; chronic zone;
250	31.07	0.57	24.44	0.708	141.2	-7.203	257.8	136.3;
260	28.73	0.57	29.48	0.581	172.1	-8.268	359.1	190.3;
270	25.88	0.57	35.69	0.476	209.8	-9.414	491.7	260.9;
280	22.39	0.57	43.33	0.391	255.8	-10.62	662.5	352.0;
281	22.0	0.57	44.18	0.383	260.9	-10.75	682.0	362.4; surface;

Outside chronic zone

/ UM3.

Case 46; ambient file C:\Plumes\SCTF13-24-35-46.001.db; Diffuser table record 4: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.57	90.0	0.0	21.1	0.0	0.0	0.57	90.0	0.0003	-1.966
15.0	0.57	90.0	0.0	21.1	0.0	0.0	0.57	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.9454	4.3	45.0	135.0	10.0	24.0	242.0	42.6	37.31	1.00E-3	23.2	100.0

Simulation:

Froude number: 68.01; effleunt density (sigma-T) -2.446; effleunt velocity 2.506(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	42.6	0.57	0.945	100.0	1.0	0.0	0.0	0.0;
10	42.38	0.57	1.128	82.03	1.219	-0.153	0.161	0.0416;
20	42.16	0.57	1.354	67.3	1.486	-0.313	0.347	0.0944;
30	41.92	0.57	1.617	55.21	1.811	-0.478	0.562	0.161;
40	41.68	0.57	1.922	45.29	2.207	-0.648	0.811	0.245;
50	41.44	0.57	2.272	37.15	2.691	-0.819	1.096	0.348;
60	41.2	0.57	2.666	30.48	3.28	-0.991	1.426	0.474;
70	40.95	0.57	3.107	25.0	3.998	-1.165	1.809	0.628;
80	40.7	0.57	3.593	20.51	4.874	-1.34	2.26	0.818;
90	40.45	0.57	4.125	16.83	5.941	-1.518	2.799	1.054;
100	40.19	0.57	4.704	13.8	7.242	-1.702	3.456	1.352;
110	39.92	0.57	5.331	11.32	8.827	-1.895	4.273	1.733;
120	39.62	0.57	6.01	9.289	10.76	-2.101	5.307	2.225;
130	39.31	0.57	6.746	7.62	13.12	-2.321	6.634	2.871;
140	38.97	0.57	7.545	6.251	15.99	-2.559	8.356	3.722;
150	38.6	0.57	8.416	5.128	19.49	-2.819	10.61	4.852;
160	38.19	0.57	9.367	4.207	23.76	-3.103	13.58	6.357;
170	37.74	0.57	10.41	3.451	28.96	-3.413	17.5	8.365;
180	37.25	0.57	11.55	2.831	35.3	-3.754	22.71	11.05;
182	37.15	0.57	11.79	2.721	36.73	-3.826	23.94	11.68; acute zone;
184	37.04	0.57	12.03	2.616	38.21	-3.899	25.24	12.36; merging;
190	36.52	0.57	12.94	2.323	43.04	-4.256	32.11	15.93;
200	35.44	0.57	14.99	1.905	52.46	-4.978	48.35	24.4;
210	34.14	0.57	17.69	1.563	63.95	-5.832	71.64	36.61;
220	32.56	0.57	21.14	1.282	77.95	-6.834	104.8	54.06;
230	30.63	0.57	25.47	1.052	95.02	-7.995	151.6	78.72;
240	28.3	0.57	30.84	0.863	115.8	-9.321	216.4	113.0;
244	27.23	0.57	33.33	0.797	125.4	-9.896	248.6	130.1; chronic zone;
250	25.46	0.57	37.48	0.708	141.2	-10.81	304.9	159.9;
260	22.01	0.57	45.62	0.581	172.1	-12.44	423.3	222.7; surface;

Outside chronic zone

; 2:47:32 PM. amb fills: 2

Case 14; ambient file C:\Plumes\SCTP14-25-36-47.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.04	90.0	0.0	21.1	0.0	0.0	0.04	90.0	0.0003	-1.966
15.0	0.04	90.0	0.0	21.1	0.0	0.0	0.04	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.7972	4.3	45.0	135.0	10.0	16.0	24.0	242.0	42.6	17.33	1.00E-3	23.2	100.0

Simulation:

Froude number: 48.38; effleunt density (sigma-T) -2.446; effleunt velocity 1.637 (m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	42.6	0.04	0.797	100.0	1.0	0.0	0.0	0.0;
10	42.31	0.04	0.961	82.03	1.219	-0.203	0.205	0.0848;
20	41.97	0.04	1.169	67.3	1.486	-0.447	0.452	0.209;
30	41.56	0.04	1.422	55.21	1.811	-0.738	0.753	0.389;
40	41.07	0.04	1.729	45.29	2.207	-1.084	1.116	0.65;
50	40.48	0.04	2.101	37.15	2.691	-1.494	1.556	1.028;
60	39.8	0.04	2.55	30.48	3.28	-1.977	2.087	1.57;
70	38.99	0.04	3.092	25.0	3.998	-2.543	2.726	2.344;
80	38.05	0.04	3.745	20.51	4.874	-3.2	3.495	3.44;
90	36.96	0.04	4.528	16.83	5.941	-3.958	4.418	4.98;
100	35.7	0.04	5.464	13.8	7.242	-4.825	5.525	7.127;
110	34.27	0.04	6.577	11.32	8.827	-5.804	6.844	10.08;
120	32.68	0.04	7.892	9.289	10.76	-6.881	8.387	14.04;
130	30.94	0.04	9.438	7.62	13.12	-8.035	10.16	19.21;
140	29.07	0.04	11.24	6.251	15.99	-9.25	12.19	25.84;
150	27.08	0.04	13.33	5.128	19.49	-10.51	14.48	34.21;
158	25.41	0.04	15.22	4.377	22.84	-11.53	16.53	42.37; merging;
160	24.78	0.04	15.76	4.207	23.76	-11.91	17.33	45.69;
166	22.52	0.04	17.85	3.736	26.76	-13.24	20.24	58.29; acute zone;
170	20.82	0.04	19.6	3.451	28.96	-14.2	22.48	68.36;
180	15.87	0.04	25.32	2.831	35.3	-16.83	29.14	100.1;
187	11.75	0.04	30.58	2.465	40.55	-18.83	34.79	128.6; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 40.36 m

conc	dilutn	width	distnce	time				
(%)	(m)	(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.45926	40.64	40.95	14.0	0.0135	0.0	0.0	0.04	3.00E-4
2.46124	40.61	41.56	16.0	0.0274	0.0	0.0	0.04	3.00E-4
2.46222	40.59	42.15	18.0	0.0413	0.0	0.0	0.04	3.00E-4
2.46284	40.58	42.74	20.0	0.0552	0.0	0.0	0.04	3.00E-4
2.46325	40.58	43.32	22.0	0.069	0.0	0.0	0.04	3.00E-4
2.46349	40.57	43.89	24.0	0.0829	0.0	0.0	0.04	3.00E-4
2.46346	40.57	44.45	26.0	0.0968	0.0	0.0	0.04	3.00E-4
2.46302	40.58	45.01	28.0	0.111	0.0	0.0	0.04	3.00E-4
2.46201	40.6	45.56	30.0	0.125	0.0	0.0	0.04	3.00E-4
2.46028	40.63	46.1	32.0	0.138	0.0	0.0	0.04	3.00E-4
2.45773	40.67	46.64	34.0	0.152	0.0	0.0	0.04	3.00E-4
2.45429	40.73	47.17	36.0	0.166	0.0	0.0	0.04	3.00E-4
2.44977	40.8	47.7	38.0	0.18	0.0	0.0	0.04	3.00E-4
2.44461	40.89	48.22	40.0	0.194	0.0	0.0	0.04	3.00E-4
2.43865	40.99	48.73	42.0	0.208	0.0	0.0	0.04	3.00E-4
2.4319	41.1	49.24	44.0	0.222	0.0	0.0	0.04	3.00E-4
2.4245	41.23	49.74	46.0	0.236	0.0	0.0	0.04	3.00E-4
2.41642	41.36	50.24	48.0	0.25	0.0	0.0	0.04	3.00E-4
2.40793	41.51	50.74	50.0	0.263	0.0	0.0	0.04	3.00E-4
2.39878	41.67	51.22	52.0	0.277	0.0	0.0	0.04	3.00E-4
2.38931	41.83	51.71	54.0	0.291	0.0	0.0	0.04	3.00E-4
2.37935	42.01	52.19	56.0	0.305	0.0	0.0	0.04	3.00E-4
2.36901	42.19	52.66	58.0	0.319	0.0	0.0	0.04	3.00E-4
2.35823	42.39	53.13	60.0	0.333	0.0	0.0	0.04	3.00E-4
2.34741	42.58	53.6	62.0	0.347	0.0	0.0	0.04	3.00E-4
2.33634	42.78	54.06	64.0	0.361	0.0	0.0	0.04	3.00E-4
2.32526	42.99	54.52	66.0	0.375	0.0	0.0	0.04	3.00E-4
2.31397	43.2	54.98	68.0	0.388	0.0	0.0	0.04	3.00E-4
2.30254	43.41	55.43	70.0	0.402	0.0	0.0	0.04	3.00E-4
2.291	43.63	55.88	72.0	0.416	0.0	0.0	0.04	3.00E-4
2.27938	43.85	56.32	74.0	0.43	0.0	0.0	0.04	3.00E-4

count: 31

/ UM3.

Case 25; ambient file C:\Plumes\SCTP14-25-36-47.001.db; Diffuser table record 2: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.04	90.0	0.0	21.1	0.0	0.0	0.04	90.0	0.0003	-1.966
15.0	0.04	90.0	0.0	21.1	0.0	0.0	0.04	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	()	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.8211	4.3	45.0	135.0	10.0	24.0	242.0	42.6	19.41	1.00E-3	23.2	100.0

Simulation:

Froude number: 50.33; effleunt density (sigma-T) -2.446; effleunt velocity 1.729(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	()	(ft)	(ft)	(s)
0	42.6	0.04	0.821	100.0	1.0	0.0	0.0	0.0;
10	42.3	0.04	0.99	82.03	1.219	-0.21	0.211	0.083;
20	41.95	0.04	1.205	67.3	1.486	-0.462	0.467	0.204;
30	41.52	0.04	1.465	55.21	1.811	-0.763	0.778	0.381;
40	41.01	0.04	1.782	45.29	2.207	-1.122	1.154	0.638;
50	40.41	0.04	2.165	37.15	2.691	-1.547	1.608	1.009;
60	39.69	0.04	2.629	30.48	3.28	-2.05	2.157	1.543;
70	38.86	0.04	3.189	25.0	3.998	-2.638	2.819	2.305;
80	37.88	0.04	3.863	20.51	4.874	-3.324	3.615	3.389;
90	36.74	0.04	4.673	16.83	5.941	-4.117	4.571	4.914;
100	35.42	0.04	5.642	13.8	7.242	-5.026	5.718	7.046;
110	33.92	0.04	6.795	11.32	8.827	-6.057	7.088	9.994;
120	32.23	0.04	8.161	9.289	10.76	-7.199	8.7	13.97;
130	30.38	0.04	9.769	7.62	13.12	-8.432	10.56	19.21;
140	28.38	0.04	11.65	6.251	15.99	-9.735	12.69	25.95;
150	26.25	0.04	13.83	5.128	19.49	-11.09	15.1	34.49;
156	24.91	0.04	15.29	4.554	21.95	-11.92	16.7	40.61; merging;
160	23.48	0.04	16.47	4.207	23.76	-12.79	18.45	47.67;
163	22.26	0.04	17.56	3.964	25.21	-13.51	19.97	54.0; acute zone;
170	19.03	0.04	20.76	3.451	28.96	-15.36	24.07	71.79;
180	13.49	0.04	27.03	2.831	35.3	-18.3	31.29	105.5;
183	11.6	0.04	29.34	2.668	37.47	-19.25	33.8	117.7; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 39.98 m

conc (%)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.65549	37.64	40.02	12.0	1.00E-3	0.0	0.0	0.04	3.00E-4
2.66232	37.54	40.63	14.0	0.0149	0.0	0.0	0.04	3.00E-4
2.66428	37.52	41.24	16.0	0.0288	0.0	0.0	0.04	3.00E-4
2.66528	37.5	41.83	18.0	0.0427	0.0	0.0	0.04	3.00E-4
2.66592	37.49	42.41	20.0	0.0566	0.0	0.0	0.04	3.00E-4
2.66635	37.49	42.99	22.0	0.0704	0.0	0.0	0.04	3.00E-4
2.66657	37.48	43.56	24.0	0.0843	0.0	0.0	0.04	3.00E-4
2.66649	37.48	44.12	26.0	0.0982	0.0	0.0	0.04	3.00E-4
2.66593	37.49	44.67	28.0	0.112	0.0	0.0	0.04	3.00E-4
2.66472	37.51	45.22	30.0	0.126	0.0	0.0	0.04	3.00E-4
2.6627	37.54	45.76	32.0	0.14	0.0	0.0	0.04	3.00E-4
2.65976	37.58	46.3	34.0	0.154	0.0	0.0	0.04	3.00E-4
2.65584	37.64	46.82	36.0	0.168	0.0	0.0	0.04	3.00E-4
2.65076	37.71	47.35	38.0	0.182	0.0	0.0	0.04	3.00E-4
2.64496	37.79	47.86	40.0	0.195	0.0	0.0	0.04	3.00E-4
2.63831	37.89	48.38	42.0	0.209	0.0	0.0	0.04	3.00E-4
2.63081	37.99	48.88	44.0	0.223	0.0	0.0	0.04	3.00E-4
2.6226	38.11	49.38	46.0	0.237	0.0	0.0	0.04	3.00E-4
2.61377	38.24	49.88	48.0	0.251	0.0	0.0	0.04	3.00E-4
2.60429	38.38	50.37	50.0	0.265	0.0	0.0	0.04	3.00E-4
2.59419	38.53	50.86	52.0	0.279	0.0	0.0	0.04	3.00E-4
2.58379	38.69	51.34	54.0	0.293	0.0	0.0	0.04	3.00E-4
2.57284	38.85	51.81	56.0	0.307	0.0	0.0	0.04	3.00E-4
2.56148	39.02	52.29	58.0	0.32	0.0	0.0	0.04	3.00E-4
2.5497	39.2	52.76	60.0	0.334	0.0	0.0	0.04	3.00E-4
2.53784	39.39	53.22	62.0	0.348	0.0	0.0	0.04	3.00E-4
2.52572	39.58	53.68	64.0	0.362	0.0	0.0	0.04	3.00E-4
2.51365	39.77	54.14	66.0	0.376	0.0	0.0	0.04	3.00E-4
2.50131	39.96	54.59	68.0	0.39	0.0	0.0	0.04	3.00E-4
2.48882	40.16	55.04	70.0	0.404	0.0	0.0	0.04	3.00E-4
2.47622	40.37	55.48	72.0	0.418	0.0	0.0	0.04	3.00E-4
2.46354	40.57	55.93	74.0	0.432	0.0	0.0	0.04	3.00E-4

count: 32

/ UM3.

Case 36; ambient file C:\Plumes\SCTP14-25-36-47.001.db; Diffuser table record 3: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.04	90.0	0.0	21.1	0.0	0.0	0.04	90.0	0.0003	-1.966
15.0	0.04	90.0	0.0	21.1	0.0	0.0	0.04	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.8623	4.3	45.0	135.0	10.0	24.0	242.0	42.6	23.56	1.00E-3	23.2	100.0

Simulation:

Froude number: 54.06; effleunt density (sigma-T) -2.446; effleunt velocity 1.903(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	42.6	0.04	0.862	100.0	1.0	0.0	0.0	0.0;
10	42.29	0.04	1.04	82.03	1.219	-0.222	0.223	0.0796;
20	41.91	0.04	1.265	67.3	1.486	-0.488	0.493	0.196;
30	41.46	0.04	1.54	55.21	1.811	-0.807	0.821	0.366;
40	40.92	0.04	1.872	45.29	2.207	-1.188	1.218	0.614;
50	40.28	0.04	2.276	37.15	2.691	-1.64	1.699	0.972;
60	39.52	0.04	2.765	30.48	3.28	-2.175	2.279	1.489;
70	38.62	0.04	3.355	25.0	3.998	-2.805	2.98	2.23;
80	37.57	0.04	4.067	20.51	4.874	-3.541	3.823	3.286;
90	36.35	0.04	4.923	16.83	5.941	-4.395	4.837	4.78;
100	34.93	0.04	5.949	13.8	7.242	-5.377	6.053	6.874;
110	33.3	0.04	7.174	11.32	8.827	-6.498	7.509	9.786;
120	31.45	0.04	8.627	9.289	10.76	-7.758	9.239	13.77;
130	29.39	0.04	10.34	7.62	13.12	-9.133	11.25	19.08;
140	27.16	0.04	12.35	6.251	15.99	-10.6	13.56	25.97;
150	24.76	0.04	14.7	5.128	19.49	-12.14	16.19	34.78;
153	24.01	0.04	15.47	4.833	20.68	-12.61	17.04	37.84; merging;
159	21.52	0.04	17.44	4.291	23.29	-14.15	19.96	48.8; acute zone;
160	21.05	0.04	17.84	4.207	23.76	-14.43	20.51	50.96;
170	15.66	0.04	22.92	3.451	28.96	-17.55	27.0	77.61;
177	11.12	0.04	27.76	3.004	33.27	-20.01	32.61	102.4; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 39.50 m

conc (%)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
2.99172	33.41	39.6	12.0	0.00234	0.0	0.0	0.04	3.00E-4
2.99855	33.33	40.21	14.0	0.0162	0.0	0.0	0.04	3.00E-4
3.00058	33.31	40.81	16.0	0.0301	0.0	0.0	0.04	3.00E-4
3.00165	33.3	41.39	18.0	0.044	0.0	0.0	0.04	3.00E-4
3.00233	33.29	41.98	20.0	0.0579	0.0	0.0	0.04	3.00E-4
3.00279	33.29	42.55	22.0	0.0718	0.0	0.0	0.04	3.00E-4
3.00301	33.28	43.11	24.0	0.0857	0.0	0.0	0.04	3.00E-4
3.00284	33.29	43.67	26.0	0.0996	0.0	0.0	0.04	3.00E-4
3.0021	33.29	44.22	28.0	0.113	0.0	0.0	0.04	3.00E-4
3.00058	33.31	44.77	30.0	0.127	0.0	0.0	0.04	3.00E-4
2.99811	33.34	45.3	32.0	0.141	0.0	0.0	0.04	3.00E-4
2.99458	33.38	45.84	34.0	0.155	0.0	0.0	0.04	3.00E-4
2.98991	33.43	46.36	36.0	0.169	0.0	0.0	0.04	3.00E-4
2.98395	33.5	46.88	38.0	0.183	0.0	0.0	0.04	3.00E-4
2.97713	33.57	47.39	40.0	0.197	0.0	0.0	0.04	3.00E-4
2.96938	33.66	47.9	42.0	0.211	0.0	0.0	0.04	3.00E-4
2.96068	33.76	48.4	44.0	0.225	0.0	0.0	0.04	3.00E-4
2.95116	33.87	48.9	46.0	0.238	0.0	0.0	0.04	3.00E-4
2.94099	33.99	49.4	48.0	0.252	0.0	0.0	0.04	3.00E-4
2.93004	34.11	49.88	50.0	0.266	0.0	0.0	0.04	3.00E-4
2.91854	34.25	50.37	52.0	0.28	0.0	0.0	0.04	3.00E-4
2.9065	34.39	50.84	54.0	0.294	0.0	0.0	0.04	3.00E-4
2.89394	34.54	51.32	56.0	0.308	0.0	0.0	0.04	3.00E-4
2.88071	34.7	51.79	58.0	0.322	0.0	0.0	0.04	3.00E-4
2.86749	34.86	52.25	60.0	0.336	0.0	0.0	0.04	3.00E-4
2.85394	35.02	52.71	62.0	0.35	0.0	0.0	0.04	3.00E-4
2.8401	35.19	53.17	64.0	0.363	0.0	0.0	0.04	3.00E-4
2.82638	35.37	53.63	66.0	0.377	0.0	0.0	0.04	3.00E-4
2.81231	35.54	54.08	68.0	0.391	0.0	0.0	0.04	3.00E-4
2.79809	35.72	54.52	70.0	0.405	0.0	0.0	0.04	3.00E-4
2.78375	35.91	54.96	72.0	0.419	0.0	0.0	0.04	3.00E-4
2.76934	36.09	55.4	74.0	0.433	0.0	0.0	0.04	3.00E-4

count: 32



/ UM3.

Case 47; ambient file C:\Plumes\SCTP14-25-36-47.001.db; Diffuser table record 4: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.04	90.0	0.0	21.1	0.0	0.0	0.04	90.0	0.0003	-1.966
15.0	0.04	90.0	0.0	21.1	0.0	0.0	0.04	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	()	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.9454	4.3	45.0	135.0	10.0	24.0	242.0	42.6	37.31	1.00E-3	23.2	100.0

Simulation:

Froude number: 68.01; effleunt density (sigma-T) -2.446; effleunt velocity 2.506(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	()	(ft)	(ft)	(s)
0	42.6	0.04	0.945	100.0	1.0	0.0	0.0	0.0;
10	42.25	0.04	1.14	82.03	1.219	-0.246	0.247	0.0671;
20	41.83	0.04	1.388	67.3	1.486	-0.543	0.547	0.166;
30	41.33	0.04	1.69	55.21	1.811	-0.899	0.911	0.31;
40	40.72	0.04	2.056	45.29	2.207	-1.327	1.353	0.521;
50	40.0	0.04	2.501	37.15	2.691	-1.839	1.889	0.829;
60	39.13	0.04	3.041	30.48	3.28	-2.448	2.537	1.275;
70	38.11	0.04	3.695	25.0	3.998	-3.169	3.32	1.92;
80	36.9	0.04	4.485	20.51	4.874	-4.02	4.266	2.847;
90	35.47	0.04	5.439	16.83	5.941	-5.018	5.405	4.171;
100	33.81	0.04	6.588	13.8	7.242	-6.178	6.775	6.05;
110	31.88	0.04	7.966	11.32	8.827	-7.518	8.419	8.693;
120	29.65	0.04	9.613	9.289	10.76	-9.052	10.39	12.38;
130	27.1	0.04	11.57	7.62	13.12	-10.79	12.74	17.47;
140	24.24	0.04	13.89	6.251	15.99	-12.71	15.49	24.32;
147	22.08	0.04	15.74	5.442	18.37	-14.14	17.67	30.35; merging;
150	20.61	0.04	16.7	5.128	19.49	-15.09	19.17	34.79; acute zone;
160	14.32	0.04	21.35	4.207	23.76	-19.08	25.81	55.98;
166	9.619	0.04	25.24	3.736	26.76	-21.92	30.88	73.63; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 38.73 m

conc (%)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
3.72092	26.86	38.87	12.0	0.00317	0.0	0.0	0.04	3.00E-4
3.72859	26.81	39.47	14.0	0.0171	0.0	0.0	0.04	3.00E-4
3.73099	26.79	40.07	16.0	0.031	0.0	0.0	0.04	3.00E-4
3.73227	26.78	40.65	18.0	0.0448	0.0	0.0	0.04	3.00E-4
3.7331	26.77	41.23	20.0	0.0587	0.0	0.0	0.04	3.00E-4
3.73365	26.77	41.79	22.0	0.0726	0.0	0.0	0.04	3.00E-4
3.73387	26.77	42.35	24.0	0.0865	0.0	0.0	0.04	3.00E-4
3.73357	26.77	42.91	26.0	0.1	0.0	0.0	0.04	3.00E-4
3.73249	26.78	43.45	28.0	0.114	0.0	0.0	0.04	3.00E-4
3.73038	26.79	43.99	30.0	0.128	0.0	0.0	0.04	3.00E-4
3.72703	26.82	44.53	32.0	0.142	0.0	0.0	0.04	3.00E-4
3.72229	26.85	45.05	34.0	0.156	0.0	0.0	0.04	3.00E-4
3.71611	26.9	45.57	36.0	0.17	0.0	0.0	0.04	3.00E-4
3.70831	26.95	46.09	38.0	0.184	0.0	0.0	0.04	3.00E-4
3.69943	27.02	46.6	40.0	0.198	0.0	0.0	0.04	3.00E-4
3.68934	27.09	47.1	42.0	0.212	0.0	0.0	0.04	3.00E-4
3.67811	27.18	47.6	44.0	0.225	0.0	0.0	0.04	3.00E-4
3.66581	27.27	48.09	46.0	0.239	0.0	0.0	0.04	3.00E-4
3.65277	27.36	48.58	48.0	0.253	0.0	0.0	0.04	3.00E-4
3.6387	27.47	49.06	50.0	0.267	0.0	0.0	0.04	3.00E-4
3.62404	27.58	49.54	52.0	0.281	0.0	0.0	0.04	3.00E-4
3.60865	27.7	50.02	54.0	0.295	0.0	0.0	0.04	3.00E-4
3.59261	27.82	50.48	56.0	0.309	0.0	0.0	0.04	3.00E-4
3.57585	27.95	50.95	58.0	0.323	0.0	0.0	0.04	3.00E-4
3.55903	28.09	51.41	60.0	0.337	0.0	0.0	0.04	3.00E-4
3.54181	28.22	51.87	62.0	0.35	0.0	0.0	0.04	3.00E-4
3.52455	28.36	52.32	64.0	0.364	0.0	0.0	0.04	3.00E-4
3.50697	28.5	52.77	66.0	0.378	0.0	0.0	0.04	3.00E-4
3.48915	28.65	53.21	68.0	0.392	0.0	0.0	0.04	3.00E-4
3.47117	28.8	53.66	70.0	0.406	0.0	0.0	0.04	3.00E-4
3.45305	28.95	54.09	72.0	0.42	0.0	0.0	0.04	3.00E-4
3.43496	29.1	54.53	74.0	0.434	0.0	0.0	0.04	3.00E-4

count: 32

2:52:42 PM. amb fills: 2

Case 15; ambient file C:\Plumes\SCTP15-26-37-48.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.21	90.0	0.0	21.1	0.0	0.0	0.21	90.0	0.0003	-1.966
15.0	0.21	90.0	0.0	21.1	0.0	0.0	0.21	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.7972	4.3	45.0	135.0	10.0	16.0	24.0	242.0	42.6	17.33	1.00E-3	23.2	100.0

Simulation:

Froude number: 48.38; effleunt density (sigma-T) -2.446; effleunt velocity 1.637 (m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	42.6	0.21	0.797	100.0	1.0	0.0	0.0	0.0;
10	42.37	0.21	0.956	82.03	1.219	-0.162	0.167	0.0675;
20	42.11	0.21	1.155	67.3	1.486	-0.345	0.367	0.16;
30	41.82	0.21	1.393	55.21	1.811	-0.549	0.606	0.287;
40	41.51	0.21	1.674	45.29	2.207	-0.771	0.885	0.454;
50	41.18	0.21	2.006	37.15	2.691	-1.006	1.209	0.67;
60	40.83	0.21	2.394	30.48	3.28	-1.251	1.581	0.944;
70	40.47	0.21	2.843	25.0	3.998	-1.503	2.006	1.289;
80	40.1	0.21	3.357	20.51	4.874	-1.761	2.492	1.717;
90	39.73	0.21	3.939	16.83	5.941	-2.021	3.049	2.244;
100	39.36	0.21	4.59	13.8	7.242	-2.284	3.692	2.894;
110	38.98	0.21	5.313	11.32	8.827	-2.55	4.443	3.697;
120	38.58	0.21	6.107	9.289	10.76	-2.822	5.334	4.696;
130	38.18	0.21	6.975	7.62	13.12	-3.103	6.409	5.954;
140	37.75	0.21	7.919	6.251	15.99	-3.396	7.73	7.555;
150	37.3	0.21	8.945	5.128	19.49	-3.706	9.381	9.617;
160	36.81	0.21	10.06	4.207	23.76	-4.036	11.47	12.3;
170	36.29	0.21	11.27	3.451	28.96	-4.39	14.15	15.8;
179	35.77	0.21	12.46	2.888	34.61	-4.732	17.22	19.89; merging;
180	35.69	0.21	12.59	2.831	35.3	-4.781	17.7	20.53;
189	34.75	0.21	14.27	2.369	42.19	-5.386	24.22	29.35; acute zone;
190	34.64	0.21	14.5	2.323	43.04	-5.459	25.09	30.52;
200	33.35	0.21	17.16	1.905	52.46	-6.253	35.5	44.78;
210	31.77	0.21	20.64	1.563	63.95	-7.17	49.99	64.82;
220	29.84	0.21	25.05	1.282	77.95	-8.213	69.93	92.64;
230	27.47	0.21	30.56	1.052	95.02	-9.38	96.91	130.5;
240	24.55	0.21	37.37	0.863	115.8	-10.66	132.8	181.2;
248	21.74	0.21	43.94	0.736	135.7	-11.75	169.2	232.9; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 44.43 m

conc	dilutn	width	distnce	time				
(%)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
0.73301	136.4	44.45	52.0	4.02E-4	0.0	0.0	0.21	3.00E-4
0.73347	136.3	44.57	54.0	0.00305	0.0	0.0	0.21	3.00E-4
0.73398	136.2	44.69	56.0	0.00569	0.0	0.0	0.21	3.00E-4
0.73434	136.1	44.81	58.0	0.00834	0.0	0.0	0.21	3.00E-4
0.7346	136.1	44.93	60.0	0.011	0.0	0.0	0.21	3.00E-4
0.73479	136.0	45.05	62.0	0.0136	0.0	0.0	0.21	3.00E-4
0.73495	136.0	45.17	64.0	0.0163	0.0	0.0	0.21	3.00E-4
0.73508	136.0	45.29	66.0	0.0189	0.0	0.0	0.21	3.00E-4
0.73519	136.0	45.41	68.0	0.0216	0.0	0.0	0.21	3.00E-4
0.73529	135.9	45.53	70.0	0.0242	0.0	0.0	0.21	3.00E-4
0.73537	135.9	45.65	72.0	0.0269	0.0	0.0	0.21	3.00E-4
0.73544	135.9	45.76	74.0	0.0295	0.0	0.0	0.21	3.00E-4

count: 12

/ UM3.

Case 26; ambient file C:\Plumes\SCTP15-26-37-48.001.db; Diffuser table record 2: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.21	90.0	0.0	21.1	0.0	0.0	0.21	90.0	0.0003	-1.966
15.0	0.21	90.0	0.0	21.1	0.0	0.0	0.21	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.8211	4.3	45.0	135.0	10.0	24.0	242.0	42.6	19.41	1.00E-3	23.2	100.0

Simulation:

Froude number: 50.33; effleunt density (sigma-T) -2.446; effleunt velocity 1.729(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	42.6	0.21	0.821	100.0	1.0	0.0	0.0	0.0;
10	42.36	0.21	0.985	82.03	1.219	-0.169	0.174	0.0668;
20	42.09	0.21	1.191	67.3	1.486	-0.361	0.383	0.159;
30	41.78	0.21	1.436	55.21	1.811	-0.577	0.633	0.285;
40	41.45	0.21	1.728	45.29	2.207	-0.812	0.927	0.454;
50	41.09	0.21	2.073	37.15	2.691	-1.064	1.269	0.673;
60	40.72	0.21	2.476	30.48	3.28	-1.327	1.661	0.953;
70	40.33	0.21	2.945	25.0	3.998	-1.6	2.11	1.305;
80	39.94	0.21	3.483	20.51	4.874	-1.879	2.624	1.744;
90	39.53	0.21	4.094	16.83	5.941	-2.161	3.211	2.286;
100	39.13	0.21	4.781	13.8	7.242	-2.446	3.887	2.954;
110	38.71	0.21	5.544	11.32	8.827	-2.735	4.673	3.778;
120	38.29	0.21	6.386	9.289	10.76	-3.029	5.601	4.802;
130	37.85	0.21	7.307	7.62	13.12	-3.332	6.715	6.086;
140	37.4	0.21	8.31	6.251	15.99	-3.647	8.076	7.715;
150	36.91	0.21	9.401	5.128	19.49	-3.978	9.768	9.806;
160	36.39	0.21	10.59	4.207	23.76	-4.331	11.9	12.52;
170	35.83	0.21	11.87	3.451	28.96	-4.708	14.62	16.05;
176	35.46	0.21	12.7	3.065	32.62	-4.957	16.7	18.79; merging;
180	35.06	0.21	13.38	2.831	35.3	-5.219	19.08	21.96;
186	34.38	0.21	14.65	2.514	39.76	-5.658	23.45	27.82; acute zone;
190	33.88	0.21	15.66	2.323	43.04	-5.973	26.89	32.47;
200	32.46	0.21	18.73	1.905	52.46	-6.848	37.81	47.35;
210	30.72	0.21	22.69	1.563	63.95	-7.86	53.01	68.31;
220	28.59	0.21	27.68	1.282	77.95	-9.012	73.93	97.4;
230	25.97	0.21	33.88	1.052	95.02	-10.3	102.2	137.0;
240	22.76	0.21	41.55	0.863	115.8	-11.71	139.8	190.0;
243	21.66	0.21	44.17	0.813	122.9	-12.16	153.2	209.0; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 44.50 m

conc	dilutn	width	distnce	time				
(%)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
0.80943	123.5	44.57	48.0	0.00153	0.0	0.0	0.21	3.00E-4
0.81007	123.4	44.69	50.0	0.00418	0.0	0.0	0.21	3.00E-4
0.81056	123.3	44.81	52.0	0.00683	0.0	0.0	0.21	3.00E-4
0.8109	123.3	44.93	54.0	0.00947	0.0	0.0	0.21	3.00E-4
0.81115	123.2	45.05	56.0	0.0121	0.0	0.0	0.21	3.00E-4
0.81135	123.2	45.17	58.0	0.0148	0.0	0.0	0.21	3.00E-4
0.81151	123.2	45.29	60.0	0.0174	0.0	0.0	0.21	3.00E-4
0.81165	123.1	45.41	62.0	0.0201	0.0	0.0	0.21	3.00E-4
0.81176	123.1	45.53	64.0	0.0227	0.0	0.0	0.21	3.00E-4
0.81186	123.1	45.65	66.0	0.0253	0.0	0.0	0.21	3.00E-4
0.81194	123.1	45.77	68.0	0.028	0.0	0.0	0.21	3.00E-4
0.81202	123.1	45.88	70.0	0.0306	0.0	0.0	0.21	3.00E-4
0.81209	123.1	46.0	72.0	0.0333	0.0	0.0	0.21	3.00E-4
0.81215	123.1	46.12	74.0	0.0359	0.0	0.0	0.21	3.00E-4

count: 14

/ UM3.

Case 37; ambient file C:\Plumes\SCTP15-26-37-48.001.db; Diffuser table record 3: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.21	90.0	0.0	21.1	0.0	0.0	0.21	90.0	0.0003	-1.966
15.0	0.21	90.0	0.0	21.1	0.0	0.0	0.21	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	()	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.8623	4.3	45.0	135.0	10.0	24.0	242.0	42.6	23.56	1.00E-3	23.2	100.0

Simulation:

Froude number: 54.06; effleunt density (sigma-T) -2.446; effleunt velocity 1.903(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	()	(ft)	(ft)	(s)
0	42.6	0.21	0.862	100.0	1.0	0.0	0.0	0.0;
10	42.34	0.21	1.035	82.03	1.219	-0.182	0.187	0.0652;
20	42.05	0.21	1.252	67.3	1.486	-0.389	0.41	0.156;
30	41.72	0.21	1.512	55.21	1.811	-0.624	0.68	0.281;
40	41.35	0.21	1.822	45.29	2.207	-0.885	1.0	0.45;
50	40.95	0.21	2.188	37.15	2.691	-1.167	1.373	0.673;
60	40.53	0.21	2.619	30.48	3.28	-1.465	1.803	0.96;
70	40.09	0.21	3.122	25.0	3.998	-1.775	2.296	1.325;
80	39.63	0.21	3.702	20.51	4.874	-2.094	2.859	1.782;
90	39.17	0.21	4.365	16.83	5.941	-2.418	3.502	2.348;
100	38.7	0.21	5.115	13.8	7.242	-2.747	4.239	3.046;
110	38.23	0.21	5.952	11.32	8.827	-3.079	5.091	3.908;
120	37.74	0.21	6.88	9.289	10.76	-3.416	6.089	4.974;
130	37.24	0.21	7.898	7.62	13.12	-3.761	7.275	6.305;
140	36.73	0.21	9.011	6.251	15.99	-4.119	8.709	7.983;
150	36.18	0.21	10.22	5.128	19.49	-4.492	10.48	10.12;
160	35.6	0.21	11.54	4.207	23.76	-4.888	12.69	12.89;
169	35.04	0.21	12.82	3.52	28.39	-5.266	15.18	16.07; merging;
170	34.96	0.21	12.97	3.451	28.96	-5.32	15.56	16.57;
180	33.82	0.21	15.05	2.831	35.3	-6.072	21.55	24.41;
183	33.43	0.21	15.84	2.668	37.47	-6.324	23.79	27.37; acute zone;
190	32.44	0.21	17.99	2.323	43.04	-6.96	29.99	35.66;
200	30.76	0.21	21.85	1.905	52.46	-7.996	41.82	51.66;
210	28.7	0.21	26.76	1.563	63.95	-9.194	58.29	74.21;
220	26.18	0.21	32.89	1.282	77.95	-10.56	80.92	105.5;
230	23.1	0.21	40.48	1.052	95.02	-12.08	111.5	148.2;
234	21.68	0.21	43.99	0.972	102.9	-12.74	126.4	169.1; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 44.44 m

conc	dilutn	width	distnce	time				
(%)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
0.96738	103.3	44.52	40.0	0.00169	0.0	0.0	0.21	3.00E-4
0.96815	103.2	44.64	42.0	0.00433	0.0	0.0	0.21	3.00E-4
0.96872	103.2	44.76	44.0	0.00698	0.0	0.0	0.21	3.00E-4
0.96912	103.1	44.88	46.0	0.00962	0.0	0.0	0.21	3.00E-4
0.96942	103.1	45.0	48.0	0.0123	0.0	0.0	0.21	3.00E-4
0.96965	103.1	45.12	50.0	0.0149	0.0	0.0	0.21	3.00E-4
0.96984	103.1	45.24	52.0	0.0176	0.0	0.0	0.21	3.00E-4
0.97	103.0	45.36	54.0	0.0202	0.0	0.0	0.21	3.00E-4
0.97013	103.0	45.48	56.0	0.0229	0.0	0.0	0.21	3.00E-4
0.97025	103.0	45.6	58.0	0.0255	0.0	0.0	0.21	3.00E-4
0.97035	103.0	45.72	60.0	0.0281	0.0	0.0	0.21	3.00E-4
0.97044	103.0	45.83	62.0	0.0308	0.0	0.0	0.21	3.00E-4
0.97052	103.0	45.95	64.0	0.0334	0.0	0.0	0.21	3.00E-4
0.9706	103.0	46.07	66.0	0.0361	0.0	0.0	0.21	3.00E-4
0.97066	103.0	46.19	68.0	0.0387	0.0	0.0	0.21	3.00E-4
0.97072	103.0	46.3	70.0	0.0414	0.0	0.0	0.21	3.00E-4
0.97078	103.0	46.42	72.0	0.044	0.0	0.0	0.21	3.00E-4
0.97083	103.0	46.54	74.0	0.0467	0.0	0.0	0.21	3.00E-4

count: 18

/ UM3.

Case 48; ambient file C:\Plumes\SCTP15-26-37-48.001.db; Diffuser table record 4: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.21	90.0	0.0	21.1	0.0	0.0	0.21	90.0	0.0003	-1.966
15.0	0.21	90.0	0.0	21.1	0.0	0.0	0.21	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.9454	4.3	45.0	135.0	10.0	24.0	242.0	42.6	37.31	1.00E-3	23.2	100.0

Simulation:

Froude number: 68.01; effleunt density (sigma-T) -2.446; effleunt velocity 2.506(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	42.6	0.21	0.945	100.0	1.0	0.0	0.0	0.0;
10	42.3	0.21	1.136	82.03	1.219	-0.211	0.215	0.0574;
20	41.96	0.21	1.377	67.3	1.486	-0.454	0.473	0.138;
30	41.56	0.21	1.667	55.21	1.811	-0.735	0.785	0.252;
40	41.11	0.21	2.014	45.29	2.207	-1.055	1.16	0.41;
50	40.6	0.21	2.429	37.15	2.691	-1.415	1.609	0.626;
60	40.04	0.21	2.92	30.48	3.28	-1.808	2.134	0.913;
70	39.45	0.21	3.5	25.0	3.998	-2.228	2.742	1.288;
80	38.82	0.21	4.179	20.51	4.874	-2.668	3.438	1.767;
90	38.17	0.21	4.966	16.83	5.941	-3.124	4.233	2.37;
100	37.51	0.21	5.87	13.8	7.242	-3.59	5.14	3.123;
110	36.83	0.21	6.896	11.32	8.827	-4.063	6.175	4.054;
120	36.15	0.21	8.049	9.289	10.76	-4.542	7.366	5.204;
130	35.45	0.21	9.332	7.62	13.12	-5.028	8.75	6.625;
140	34.73	0.21	10.75	6.251	15.99	-5.524	10.38	8.394;
150	34.0	0.21	12.3	5.128	19.49	-6.034	12.34	10.61;
158	33.36	0.21	13.64	4.377	22.84	-6.47	14.26	12.88; merging;
160	33.12	0.21	14.03	4.207	23.76	-6.637	15.06	13.84;
170	31.67	0.21	16.72	3.451	28.96	-7.613	20.22	20.16;
174	31.03	0.21	18.09	3.188	31.35	-8.047	22.8	23.37; acute zone;
180	29.96	0.21	20.49	2.831	35.3	-8.752	27.36	29.14;
190	27.9	0.21	25.44	2.323	43.04	-10.08	37.3	41.96;
200	25.42	0.21	31.76	1.905	52.46	-11.64	51.15	60.18;
210	22.41	0.21	39.67	1.563	63.95	-13.43	70.3	85.81;
214	21.03	0.21	43.35	1.444	69.22	-14.22	79.83	98.69; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 44.25 m

conc	dilutn	width	distnce	time				
(%)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.43748	69.53	44.33	26.0	0.0017	0.0	0.0	0.21	3.00E-4
1.43863	69.48	44.45	28.0	0.00435	0.0	0.0	0.21	3.00E-4
1.43947	69.44	44.57	30.0	0.00699	0.0	0.0	0.21	3.00E-4
1.44007	69.41	44.69	32.0	0.00964	0.0	0.0	0.21	3.00E-4
1.44051	69.39	44.81	34.0	0.0123	0.0	0.0	0.21	3.00E-4
1.44086	69.37	44.93	36.0	0.0149	0.0	0.0	0.21	3.00E-4
1.44114	69.36	45.05	38.0	0.0176	0.0	0.0	0.21	3.00E-4
1.44138	69.35	45.17	40.0	0.0202	0.0	0.0	0.21	3.00E-4
1.44158	69.34	45.29	42.0	0.0229	0.0	0.0	0.21	3.00E-4
1.44175	69.33	45.4	44.0	0.0255	0.0	0.0	0.21	3.00E-4
1.4419	69.32	45.52	46.0	0.0282	0.0	0.0	0.21	3.00E-4
1.44203	69.31	45.64	48.0	0.0308	0.0	0.0	0.21	3.00E-4
1.44215	69.31	45.76	50.0	0.0334	0.0	0.0	0.21	3.00E-4
1.44226	69.3	45.87	52.0	0.0361	0.0	0.0	0.21	3.00E-4
1.44236	69.3	45.99	54.0	0.0387	0.0	0.0	0.21	3.00E-4
1.44245	69.29	46.11	56.0	0.0414	0.0	0.0	0.21	3.00E-4
1.44253	69.29	46.22	58.0	0.044	0.0	0.0	0.21	3.00E-4
1.4426	69.29	46.34	60.0	0.0467	0.0	0.0	0.21	3.00E-4
1.44267	69.28	46.46	62.0	0.0493	0.0	0.0	0.21	3.00E-4
1.44274	69.28	46.57	64.0	0.052	0.0	0.0	0.21	3.00E-4
1.4428	69.28	46.69	66.0	0.0546	0.0	0.0	0.21	3.00E-4
1.44285	69.27	46.8	68.0	0.0573	0.0	0.0	0.21	3.00E-4
1.44291	69.27	46.92	70.0	0.0599	0.0	0.0	0.21	3.00E-4
1.44296	69.27	47.03	72.0	0.0625	0.0	0.0	0.21	3.00E-4
1.443	69.27	47.14	74.0	0.0652	0.0	0.0	0.21	3.00E-4

count: 25

; 3:01:05 PM. amb fills: 2

/ UM3. 12/15/2022 3:14:07 PM

Case 16; ambient file C:\Plumes\SCTF16-27-38-49.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.33	90.0	0.0	10.7	0.0	0.0	0.33	90.0	0.0003	-0.3
15.0	0.33	90.0	0.0	10.7	0.0	0.0	0.33	90.0	0.0003	-0.3

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.8608	4.3	45.0	135.0	10.0	16.0	24.0	242.0	43.6	23.4	1.00E-3	20.2	100.0

Simulation:

Froude number: 30.77; effleunt density (sigma-T) -1.774; effleunt velocity 1.896(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	43.6	0.33	0.861	100.0	1.0	0.0	0.0	0.0;
10	43.37	0.33	1.03	82.03	1.219	-0.159	0.166	0.0572;
20	43.13	0.33	1.24	67.3	1.485	-0.331	0.36	0.133;
30	42.87	0.33	1.489	55.21	1.81	-0.516	0.586	0.231;
40	42.6	0.33	1.78	45.29	2.206	-0.708	0.848	0.357;
50	42.31	0.33	2.119	37.15	2.689	-0.908	1.149	0.514;
60	42.03	0.33	2.509	30.48	3.277	-1.111	1.493	0.711;
70	41.73	0.33	2.952	25.0	3.995	-1.316	1.889	0.952;
80	41.44	0.33	3.449	20.51	4.869	-1.522	2.345	1.249;
90	41.14	0.33	4.003	16.83	5.935	-1.731	2.877	1.615;
100	40.83	0.33	4.611	13.8	7.235	-1.943	3.505	2.067;
110	40.52	0.33	5.277	11.32	8.819	-2.161	4.26	2.634;
120	40.19	0.33	6.0	9.289	10.75	-2.387	5.185	3.352;
130	39.85	0.33	6.785	7.62	13.1	-2.625	6.339	4.274;
140	39.48	0.33	7.638	6.251	15.97	-2.879	7.798	5.469;
150	39.07	0.33	8.564	5.128	19.47	-3.151	9.668	7.032;
160	38.63	0.33	9.571	4.207	23.74	-3.444	12.08	9.087;
170	38.15	0.33	10.67	3.451	28.93	-3.761	15.22	11.8;
180	37.62	0.33	11.87	2.831	35.27	-4.104	19.32	15.37;
183	37.43	0.33	12.26	2.668	37.43	-4.22	20.88	16.75; merging;
187	37.07	0.33	12.87	2.465	40.51	-4.45	24.19	19.66; acute zone;
190	36.76	0.33	13.41	2.323	42.99	-4.639	27.08	22.22;
200	35.6	0.33	15.64	1.905	52.41	-5.323	39.01	32.83;
210	34.19	0.33	18.58	1.563	63.89	-6.102	55.44	47.53;
220	32.45	0.33	22.33	1.282	77.88	-6.976	77.78	67.64;
230	30.32	0.33	27.02	1.052	94.93	-7.939	107.6	94.65;
240	27.7	0.33	32.85	0.863	115.7	-8.979	146.8	130.2;
250	24.48	0.33	40.03	0.708	141.1	-10.08	197.4	176.2;
256	22.2	0.33	45.1	0.629	158.9	-10.77	234.1	209.8; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 44.78 m

conc	dilutn	width	distnce	time				
(%)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
0.62562	159.6	44.8	72.0	4.70E-4	0.0	0.0	0.33	3.00E-4
0.62583	159.6	44.88	74.0	0.00215	0.0	0.0	0.33	3.00E-4

count: 2

/ UM3.

Case 27; ambient file C:\Plumes\SCTF16-27-38-49.001.db; Diffuser table record 2: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.33	90.0	0.0	10.7	0.0	0.0	0.33	90.0	0.0003	-0.3
15.0	0.33	90.0	0.0	10.7	0.0	0.0	0.33	90.0	0.0003	-0.3

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.8845	4.3	45.0	135.0	10.0	24.0	242.0	43.6	26.24	1.00E-3	20.2	100.0

Simulation:

Froude number: 32.24; effleunt density (sigma-T) -1.774; effleunt velocity 2.014(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	43.6	0.33	0.884	100.0	1.0	0.0	0.0	0.0;
10	43.36	0.33	1.059	82.03	1.219	-0.167	0.174	0.0566;
20	43.1	0.33	1.276	67.3	1.485	-0.35	0.378	0.132;
30	42.83	0.33	1.533	55.21	1.81	-0.547	0.618	0.231;
40	42.53	0.33	1.835	45.29	2.206	-0.755	0.895	0.358;
50	42.23	0.33	2.188	37.15	2.689	-0.97	1.214	0.519;
60	41.91	0.33	2.595	30.48	3.277	-1.19	1.579	0.72;
70	41.59	0.33	3.059	25.0	3.995	-1.414	1.998	0.968;
80	41.27	0.33	3.582	20.51	4.869	-1.639	2.479	1.272;
90	40.95	0.33	4.167	16.83	5.935	-1.866	3.038	1.647;
100	40.62	0.33	4.811	13.8	7.235	-2.097	3.694	2.11;
110	40.28	0.33	5.518	11.32	8.819	-2.333	4.479	2.688;
120	39.92	0.33	6.288	9.289	10.75	-2.577	5.433	3.418;
130	39.55	0.33	7.124	7.62	13.1	-2.833	6.614	4.35;
140	39.15	0.33	8.031	6.251	15.97	-3.104	8.102	5.556;
150	38.73	0.33	9.017	5.128	19.47	-3.395	9.999	7.127;
160	38.26	0.33	10.09	4.207	23.74	-3.707	12.44	9.19;
170	37.75	0.33	11.26	3.451	28.93	-4.045	15.61	11.91;
178	37.3	0.33	12.27	2.946	33.9	-4.334	18.82	14.69; merging;
180	37.14	0.33	12.55	2.831	35.27	-4.436	20.06	15.77;
185	36.64	0.33	13.4	2.564	38.94	-4.751	24.13	19.34; acute zone;
190	36.09	0.33	14.44	2.323	42.99	-5.091	28.98	23.6;
200	34.82	0.33	17.04	1.905	52.41	-5.846	41.41	34.62;
210	33.25	0.33	20.41	1.563	63.89	-6.708	58.59	49.95;
220	31.34	0.33	24.67	1.282	77.88	-7.677	81.98	70.96;
230	28.98	0.33	29.98	1.052	94.93	-8.747	113.3	99.18;
240	26.08	0.33	36.55	0.863	115.7	-9.903	154.3	136.4;
250	22.53	0.33	44.63	0.708	141.1	-11.13	207.4	184.6;
251	22.13	0.33	45.53	0.694	143.9	-11.26	213.4	190.1; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 44.91 m

conc	dilutn	width	distnce	time				
(%)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
0.69074	144.6	44.95	66.0	7.23E-4	0.0	0.0	0.33	3.00E-4
0.69102	144.5	45.02	68.0	0.00241	0.0	0.0	0.33	3.00E-4
0.69137	144.4	45.1	70.0	0.00409	0.0	0.0	0.33	3.00E-4
0.69165	144.4	45.18	72.0	0.00577	0.0	0.0	0.33	3.00E-4
0.69188	144.3	45.26	74.0	0.00746	0.0	0.0	0.33	3.00E-4

count: 5

/ UM3.

Case 38; ambient file C:\Plumes\SCTF16-27-38-49.001.db; Diffuser table record 3: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.33	90.0	0.0	10.7	0.0	0.0	0.33	90.0	0.0003	-0.3
15.0	0.33	90.0	0.0	10.7	0.0	0.0	0.33	90.0	0.0003	-0.3

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.9213	4.3	45.0	135.0	10.0	24.0	242.0	43.6	31.86	1.00E-3	20.2	100.0

Simulation:

Froude number: 35.35; effleunt density (sigma-T) -1.774; effleunt velocity 2.254(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	43.6	0.33	0.921	100.0	1.0	0.0	0.0	0.0;
10	43.34	0.33	1.104	82.03	1.219	-0.18	0.187	0.0546;
20	43.06	0.33	1.332	67.3	1.485	-0.381	0.409	0.129;
30	42.75	0.33	1.603	55.21	1.81	-0.601	0.671	0.227;
40	42.42	0.33	1.923	45.29	2.206	-0.835	0.976	0.356;
50	42.07	0.33	2.298	37.15	2.689	-1.081	1.327	0.52;
60	41.71	0.33	2.733	30.48	3.277	-1.335	1.73	0.726;
70	41.34	0.33	3.233	25.0	3.995	-1.593	2.191	0.983;
80	40.97	0.33	3.801	20.51	4.869	-1.855	2.718	1.299;
90	40.59	0.33	4.44	16.83	5.935	-2.12	3.327	1.688;
100	40.21	0.33	5.149	13.8	7.235	-2.387	4.035	2.168;
110	39.82	0.33	5.93	11.32	8.819	-2.659	4.872	2.763;
120	39.41	0.33	6.784	9.289	10.75	-2.938	5.878	3.51;
130	38.99	0.33	7.714	7.62	13.1	-3.229	7.108	4.456;
140	38.54	0.33	8.724	6.251	15.97	-3.535	8.641	5.672;
150	38.06	0.33	9.82	5.128	19.47	-3.861	10.58	7.248;
160	37.54	0.33	11.01	4.207	23.74	-4.211	13.05	9.308;
170	36.98	0.33	12.31	3.451	28.93	-4.587	16.25	12.01;
172	36.86	0.33	12.58	3.317	30.1	-4.666	16.99	12.65; merging;
180	36.05	0.33	14.03	2.831	35.27	-5.185	22.4	17.3;
182	35.83	0.33	14.47	2.721	36.69	-5.331	24.05	18.74; acute zone;
190	34.82	0.33	16.53	2.323	42.99	-5.959	31.91	25.58;
200	33.31	0.33	19.83	1.905	52.41	-6.856	45.2	37.27;
210	31.47	0.33	24.02	1.563	63.89	-7.883	63.6	53.6;
220	29.2	0.33	29.28	1.282	77.88	-9.042	88.7	76.03;
230	26.43	0.33	35.8	1.052	94.93	-10.32	122.3	106.2;
240	23.01	0.33	43.83	0.863	115.7	-11.71	166.6	146.2;
242	22.24	0.33	45.64	0.829	120.4	-12.0	176.9	155.5; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 44.95 m

conc	dilutn	width	distnce	time				
(%)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
0.82564	120.9	45.02	56.0	0.00165	0.0	0.0	0.33	3.00E-4
0.82607	120.9	45.1	58.0	0.00334	0.0	0.0	0.33	3.00E-4
0.82645	120.8	45.18	60.0	0.00502	0.0	0.0	0.33	3.00E-4
0.82674	120.8	45.26	62.0	0.0067	0.0	0.0	0.33	3.00E-4
0.82698	120.7	45.33	64.0	0.00839	0.0	0.0	0.33	3.00E-4
0.82718	120.7	45.41	66.0	0.0101	0.0	0.0	0.33	3.00E-4
0.82734	120.7	45.49	68.0	0.0118	0.0	0.0	0.33	3.00E-4
0.82748	120.7	45.56	70.0	0.0134	0.0	0.0	0.33	3.00E-4
0.8276	120.7	45.64	72.0	0.0151	0.0	0.0	0.33	3.00E-4
0.8277	120.6	45.71	74.0	0.0168	0.0	0.0	0.33	3.00E-4

count: 10



/ UM3.

Case 49; ambient file C:\Plumes\SCTP16-27-38-49.001.db; Diffuser table record 4: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.33	90.0	0.0	10.7	0.0	0.0	0.33	90.0	0.0003	-0.3
15.0	0.33	90.0	0.0	10.7	0.0	0.0	0.33	90.0	0.0003	-0.3

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.9668	4.3	45.0	135.0	10.0	24.0	242.0	43.6	50.9	1.00E-3	20.2	100.0

Simulation:

Froude number: 50.06; effleunt density (sigma-T) -1.774; effleunt velocity 3.27 (m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	43.6	0.33	0.967	100.0	1.0	0.0	0.0	0.0;
10	43.31	0.33	1.161	82.03	1.219	-0.208	0.213	0.0433;
20	42.97	0.33	1.405	67.3	1.485	-0.445	0.468	0.104;
30	42.59	0.33	1.698	55.21	1.81	-0.717	0.776	0.188;
40	42.15	0.33	2.048	45.29	2.206	-1.022	1.144	0.303;
50	41.68	0.33	2.463	37.15	2.689	-1.355	1.576	0.457;
60	41.18	0.33	2.953	30.48	3.277	-1.711	2.077	0.656;
70	40.65	0.33	3.526	25.0	3.995	-2.085	2.651	0.912;
80	40.1	0.33	4.192	20.51	4.869	-2.471	3.308	1.234;
90	39.53	0.33	4.956	16.83	5.935	-2.866	4.057	1.635;
100	38.96	0.33	5.824	13.8	7.235	-3.267	4.914	2.131;
110	38.38	0.33	6.8	11.32	8.819	-3.672	5.9	2.742;
120	37.79	0.33	7.885	9.289	10.75	-4.083	7.046	3.498;
130	37.19	0.33	9.081	7.62	13.1	-4.502	8.397	4.437;
140	36.57	0.33	10.39	6.251	15.97	-4.933	10.02	5.616;
150	35.92	0.33	11.82	5.128	19.47	-5.382	12.0	7.112;
159	35.3	0.33	13.21	4.291	23.27	-5.806	14.18	8.817; merging;
160	35.21	0.33	13.38	4.207	23.74	-5.867	14.52	9.09;
170	33.95	0.33	15.67	3.451	28.93	-6.714	19.75	13.29;
175	33.23	0.33	17.19	3.126	31.94	-7.194	23.12	16.05; acute zone;
180	32.44	0.33	18.95	2.831	35.27	-7.714	27.1	19.35;
190	30.62	0.33	23.26	2.323	42.99	-8.889	37.42	28.01;
200	28.4	0.33	28.76	1.905	52.41	-10.26	51.88	40.36;
210	25.7	0.33	35.65	1.563	63.89	-11.85	71.99	57.75;
220	22.42	0.33	44.18	1.282	77.88	-13.66	99.58	81.91;
221	22.06	0.33	45.14	1.257	79.43	-13.85	102.8	84.77; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 44.79 m

conc (%)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.25118	79.81	44.81	32.0	3.14E-4	0.0	0.0	0.33	3.00E-4
1.25153	79.79	44.89	34.0	0.002	0.0	0.0	0.33	3.00E-4
1.25218	79.74	44.96	36.0	0.00368	0.0	0.0	0.33	3.00E-4
1.25272	79.71	45.04	38.0	0.00536	0.0	0.0	0.33	3.00E-4
1.25315	79.68	45.12	40.0	0.00705	0.0	0.0	0.33	3.00E-4
1.2535	79.66	45.19	42.0	0.00873	0.0	0.0	0.33	3.00E-4
1.25378	79.64	45.27	44.0	0.0104	0.0	0.0	0.33	3.00E-4
1.25402	79.63	45.35	46.0	0.0121	0.0	0.0	0.33	3.00E-4
1.25422	79.61	45.42	48.0	0.0138	0.0	0.0	0.33	3.00E-4
1.2544	79.6	45.5	50.0	0.0155	0.0	0.0	0.33	3.00E-4
1.25455	79.59	45.58	52.0	0.0171	0.0	0.0	0.33	3.00E-4
1.25469	79.58	45.65	54.0	0.0188	0.0	0.0	0.33	3.00E-4
1.25482	79.58	45.73	56.0	0.0205	0.0	0.0	0.33	3.00E-4
1.25493	79.57	45.8	58.0	0.0222	0.0	0.0	0.33	3.00E-4
1.25503	79.56	45.88	60.0	0.0239	0.0	0.0	0.33	3.00E-4
1.25512	79.56	45.96	62.0	0.0256	0.0	0.0	0.33	3.00E-4
1.25521	79.55	46.03	64.0	0.0272	0.0	0.0	0.33	3.00E-4
1.25529	79.55	46.11	66.0	0.0289	0.0	0.0	0.33	3.00E-4
1.25536	79.54	46.18	68.0	0.0306	0.0	0.0	0.33	3.00E-4
1.25543	79.54	46.26	70.0	0.0323	0.0	0.0	0.33	3.00E-4
1.25549	79.53	46.33	72.0	0.034	0.0	0.0	0.33	3.00E-4
1.25555	79.53	46.41	74.0	0.0357	0.0	0.0	0.33	3.00E-4

count: 22

3:14:07 PM. amb fills: 2

/ UM3. 12/15/2022 3:25:19 PM

Case 17; ambient file C:\Plumes\SCTF17-28-39-50.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.44	90.0	0.0	21.1	0.0	0.0	0.44	90.0	0.0003	-1.966
15.0	0.44	90.0	0.0	21.1	0.0	0.0	0.44	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChronicMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.7423	4.3	45.0	135.0	10.0	16.0	24.0	242.0	42.6	13.15	1.00E-3	23.0	100.0

Simulation:

Froude number: 46.24; effleunt density (sigma-T) -2.398; effleunt velocity 1.433(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	42.6	0.44	0.742	100.0	1.0	0.0	0.0	0.0;
10	42.46	0.44	0.882	82.03	1.219	-0.0984	0.105	0.0467;
20	42.32	0.44	1.052	67.3	1.486	-0.197	0.226	0.104;
30	42.18	0.44	1.248	55.21	1.811	-0.296	0.365	0.174;
40	42.04	0.44	1.47	45.29	2.208	-0.396	0.527	0.26;
50	41.9	0.44	1.718	37.15	2.691	-0.495	0.716	0.364;
60	41.76	0.44	1.992	30.48	3.28	-0.595	0.938	0.491;
70	41.62	0.44	2.292	25.0	3.998	-0.695	1.204	0.648;
80	41.47	0.44	2.617	20.51	4.874	-0.799	1.527	0.844;
90	41.32	0.44	2.969	16.83	5.941	-0.906	1.929	1.094;
100	41.15	0.44	3.348	13.8	7.242	-1.02	2.439	1.417;
110	40.98	0.44	3.758	11.32	8.828	-1.143	3.094	1.838;
120	40.79	0.44	4.203	9.289	10.76	-1.275	3.948	2.394;
130	40.59	0.44	4.686	7.62	13.12	-1.419	5.07	3.133;
140	40.36	0.44	5.213	6.251	15.99	-1.577	6.551	4.117;
150	40.11	0.44	5.789	5.128	19.49	-1.749	8.515	5.431;
160	39.84	0.44	6.42	4.207	23.76	-1.939	11.12	7.188;
170	39.53	0.44	7.113	3.451	28.96	-2.146	14.6	9.538;
180	39.2	0.44	7.875	2.831	35.31	-2.374	19.21	12.68;
188	38.9	0.44	8.539	2.416	41.37	-2.572	23.98	15.93; acute zone;
190	38.82	0.44	8.713	2.323	43.04	-2.623	25.35	16.86;
200	38.41	0.44	9.636	1.905	52.46	-2.895	33.5	22.43;
210	37.94	0.44	10.65	1.563	63.95	-3.191	44.29	29.83;
219	37.48	0.44	11.66	1.308	76.43	-3.479	56.92	38.5; merging;
220	37.41	0.44	11.78	1.282	77.96	-3.521	58.96	39.9;
230	36.46	0.44	13.37	1.052	95.03	-4.08	89.12	60.65;
240	35.29	0.44	15.54	0.863	115.8	-4.714	130.8	89.37;
250	33.86	0.44	18.33	0.708	141.2	-5.416	186.9	128.1;
258	32.49	0.44	21.09	0.604	165.4	-6.021	244.7	167.9; chronic zone;
260	32.11	0.44	21.86	0.581	172.1	-6.177	261.1	179.2;
270	29.97	0.44	26.26	0.476	209.8	-6.99	357.5	245.8;
280	27.35	0.44	31.7	0.391	255.8	-7.843	480.8	330.9;
290	24.15	0.44	38.4	0.321	311.8	-8.728	636.4	438.6;
297	21.5	0.44	43.98	0.279	358.1	-9.361	768.1	529.6; surface;

Outside chronic zone

/ UM3.

Case 28; ambient file C:\Plumes\SCTF17-28-39-50.001.db; Diffuser table record 2: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.44	90.0	0.0	21.1	0.0	0.0	0.44	90.0	0.0003	-1.966
15.0	0.44	90.0	0.0	21.1	0.0	0.0	0.44	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.7642	4.3	45.0	135.0	10.0	24.0	242.0	42.6	14.73	1.00E-3	23.0	100.0

Simulation:

Froude number: 48.16; effleunt density (sigma-T) -2.398; effleunt velocity 1.514(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	42.6	0.44	0.764	100.0	1.0	0.0	0.0	0.0;
10	42.45	0.44	0.909	82.03	1.219	-0.106	0.113	0.0474;
20	42.3	0.44	1.086	67.3	1.486	-0.212	0.241	0.106;
30	42.15	0.44	1.289	55.21	1.811	-0.32	0.39	0.178;
40	41.99	0.44	1.521	45.29	2.208	-0.428	0.563	0.266;
50	41.84	0.44	1.782	37.15	2.691	-0.536	0.764	0.374;
60	41.69	0.44	2.072	30.48	3.28	-0.645	0.999	0.505;
70	41.53	0.44	2.389	25.0	3.998	-0.754	1.278	0.666;
80	41.37	0.44	2.735	20.51	4.874	-0.866	1.615	0.867;
90	41.21	0.44	3.109	16.83	5.941	-0.982	2.031	1.122;
100	41.03	0.44	3.513	13.8	7.242	-1.105	2.555	1.449;
110	40.85	0.44	3.95	11.32	8.828	-1.235	3.225	1.875;
120	40.65	0.44	4.423	9.289	10.76	-1.376	4.093	2.436;
130	40.43	0.44	4.938	7.62	13.12	-1.529	5.229	3.179;
140	40.19	0.44	5.498	6.251	15.99	-1.697	6.726	4.167;
150	39.93	0.44	6.109	5.128	19.49	-1.88	8.706	5.485;
160	39.63	0.44	6.78	4.207	23.76	-2.08	11.33	7.247;
170	39.31	0.44	7.515	3.451	28.96	-2.3	14.82	9.601;
180	38.96	0.44	8.322	2.831	35.31	-2.542	19.46	12.75;
188	38.65	0.44	9.026	2.416	41.37	-2.751	24.25	16.0; acute zone;
190	38.56	0.44	9.211	2.323	43.04	-2.805	25.63	16.94;
200	38.12	0.44	10.19	1.905	52.46	-3.094	33.82	22.53;
210	37.64	0.44	11.27	1.563	63.95	-3.407	44.66	29.95;
213	37.48	0.44	11.61	1.473	67.87	-3.507	48.54	32.61; merging;
220	36.88	0.44	12.59	1.282	77.96	-3.877	64.57	43.61;
230	35.81	0.44	14.5	1.052	95.03	-4.5	96.41	65.48;
240	34.52	0.44	17.01	0.863	115.8	-5.2	140.0	95.48;
250	32.93	0.44	20.2	0.708	141.2	-5.976	198.8	136.0;
256	31.81	0.44	22.5	0.629	159.0	-6.474	242.9	166.4; chronic zone;
260	30.99	0.44	24.21	0.581	172.1	-6.819	276.5	189.6;
270	28.62	0.44	29.18	0.476	209.8	-7.72	377.6	259.4;
280	25.72	0.44	35.31	0.391	255.8	-8.666	507.1	348.8;
290	22.18	0.44	42.85	0.321	311.8	-9.649	670.7	461.8;
291	21.78	0.44	43.69	0.314	318.0	-9.748	689.2	474.6; surface;

Outside chronic zone

/ UM3.

Case 39; ambient file C:\Plumes\SCTP17-28-39-50.001.db; Diffuser table record 3: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.44	90.0	0.0	21.1	0.0	0.0	0.44	90.0	0.0003	-1.966
15.0	0.44	90.0	0.0	21.1	0.0	0.0	0.44	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChronicMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.8038	4.3	45.0	135.0	10.0	24.0	242.0	42.6	17.88	1.00E-3	23.0	100.0

Simulation:

Froude number: 51.53; effleunt density (sigma-T) -2.398; effleunt velocity 1.662(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	42.6	0.44	0.804	100.0	1.0	0.0	0.0	0.0;
10	42.43	0.44	0.957	82.03	1.219	-0.118	0.126	0.0485;
20	42.26	0.44	1.145	67.3	1.486	-0.239	0.269	0.109;
30	42.09	0.44	1.364	55.21	1.811	-0.363	0.436	0.184;
40	41.91	0.44	1.614	45.29	2.208	-0.488	0.629	0.277;
50	41.73	0.44	1.897	37.15	2.691	-0.613	0.851	0.39;
60	41.55	0.44	2.214	30.48	3.28	-0.738	1.11	0.529;
70	41.38	0.44	2.564	25.0	3.998	-0.865	1.415	0.698;
80	41.19	0.44	2.946	20.51	4.874	-0.993	1.779	0.909;
90	41.01	0.44	3.362	16.83	5.941	-1.125	2.223	1.173;
100	40.81	0.44	3.812	13.8	7.242	-1.264	2.774	1.51;
110	40.6	0.44	4.298	11.32	8.828	-1.41	3.472	1.946;
120	40.38	0.44	4.824	9.289	10.76	-1.567	4.369	2.516;
130	40.13	0.44	5.396	7.62	13.12	-1.738	5.535	3.268;
140	39.87	0.44	6.018	6.251	15.99	-1.923	7.062	4.266;
150	39.58	0.44	6.696	5.128	19.49	-2.125	9.075	5.594;
160	39.26	0.44	7.438	4.207	23.76	-2.347	11.74	7.367;
170	38.9	0.44	8.251	3.451	28.96	-2.59	15.27	9.735;
180	38.51	0.44	9.144	2.831	35.31	-2.856	19.96	12.9;
187	38.21	0.44	9.821	2.465	40.56	-3.057	24.13	15.72; acute zone;
190	38.08	0.44	10.13	2.323	43.04	-3.147	26.19	17.12;
200	37.6	0.44	11.21	1.905	52.46	-3.465	34.45	22.74;
205	37.34	0.44	11.79	1.726	57.92	-3.635	39.54	26.21; merging;
210	36.92	0.44	12.49	1.563	63.95	-3.903	48.44	32.29;
220	35.88	0.44	14.37	1.282	77.96	-4.547	73.17	49.21;
230	34.61	0.44	16.85	1.052	95.03	-5.284	107.6	72.8;
240	33.07	0.44	20.02	0.863	115.8	-6.116	154.9	105.3;
250	31.18	0.44	23.99	0.708	141.2	-7.039	218.6	149.2;
254	30.31	0.44	25.85	0.654	152.8	-7.432	249.7	170.5; chronic zone;
260	28.88	0.44	28.94	0.581	172.1	-8.043	303.1	207.4;
270	26.06	0.44	35.04	0.476	209.8	-9.116	413.0	283.2;
280	22.61	0.44	42.55	0.391	255.8	-10.25	553.8	380.3;
282	21.83	0.44	44.24	0.376	266.1	-10.48	586.3	402.7; surface;

Outside chronic zone

/ UM3.

Case 50; ambient file C:\Plumes\SCTP17-28-39-50.001.db; Diffuser table record 4: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.44	90.0	0.0	21.1	0.0	0.0	0.44	90.0	0.0003	-1.966
15.0	0.44	90.0	0.0	21.1	0.0	0.0	0.44	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.9056	4.3	45.0	135.0	10.0	24.0	242.0	42.6	29.21	1.00E-3	23.0	100.0

Simulation:

Froude number: 62.48; effleunt density (sigma-T) -2.398; effleunt velocity 2.139(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	42.6	0.44	0.906	100.0	1.0	0.0	0.0	0.0;
10	42.38	0.44	1.082	82.03	1.219	-0.155	0.163	0.0494;
20	42.15	0.44	1.3	67.3	1.486	-0.319	0.351	0.113;
30	41.91	0.44	1.556	55.21	1.811	-0.491	0.569	0.194;
40	41.66	0.44	1.855	45.29	2.208	-0.668	0.821	0.297;
50	41.4	0.44	2.198	37.15	2.691	-0.848	1.111	0.424;
60	41.14	0.44	2.589	30.48	3.28	-1.031	1.444	0.58;
70	40.88	0.44	3.029	25.0	3.998	-1.214	1.828	0.771;
80	40.62	0.44	3.517	20.51	4.874	-1.399	2.277	1.007;
90	40.35	0.44	4.054	16.83	5.941	-1.587	2.807	1.298;
100	40.08	0.44	4.641	13.8	7.242	-1.779	3.446	1.662;
110	39.8	0.44	5.278	11.32	8.828	-1.979	4.231	2.124;
120	39.5	0.44	5.968	9.289	10.76	-2.19	5.213	2.718;
130	39.17	0.44	6.717	7.62	13.12	-2.415	6.461	3.491;
140	38.83	0.44	7.53	6.251	15.99	-2.658	8.068	4.505;
150	38.45	0.44	8.414	5.128	19.49	-2.921	10.16	5.846;
160	38.04	0.44	9.377	4.207	23.76	-3.207	12.9	7.627;
170	37.58	0.44	10.43	3.451	28.96	-3.52	16.5	9.997;
180	37.09	0.44	11.58	2.831	35.31	-3.862	21.27	13.16;
184	36.87	0.44	12.08	2.616	38.22	-4.008	23.58	14.7; merging;
185	36.8	0.44	12.21	2.564	38.98	-4.055	24.37	15.23; acute zone;
190	36.34	0.44	12.99	2.323	43.04	-4.364	29.82	18.88;
200	35.26	0.44	15.06	1.905	52.46	-5.084	44.52	28.77;
210	33.95	0.44	17.8	1.563	63.95	-5.93	65.48	42.94;
220	32.35	0.44	21.3	1.282	77.96	-6.918	95.17	63.11;
230	30.4	0.44	25.69	1.052	95.03	-8.055	136.7	91.42;
240	28.03	0.44	31.14	0.863	115.8	-9.344	193.9	130.5;
247	26.07	0.44	35.7	0.751	133.1	-10.33	245.5	165.9; chronic zone;
250	25.14	0.44	37.87	0.708	141.2	-10.78	271.1	183.4;
259	22.0	0.44	45.22	0.592	168.8	-12.18	362.0	245.8; surface;

Outside chronic zone

; 3:25:19 PM. amb fills: 2

Case 18; ambient file C:\Plumes\SCTF18-29-40-51.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.11	90.0	0.0	21.1	0.0	0.0	0.11	90.0	0.0003	-1.966
15.0	0.11	90.0	0.0	21.1	0.0	0.0	0.11	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.7423	4.3	45.0	135.0	10.0	16.0	24.0	242.0	42.6	13.15	1.00E-3	23.0	100.0

Simulation:

Froude number: 46.24; effleunt density (sigma-T) -2.398; effleunt velocity 1.433(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	42.6	0.11	0.742	100.0	1.0	0.0	0.0	0.0;
10	42.36	0.11	0.892	82.03	1.219	-0.168	0.171	0.08;
20	42.09	0.11	1.082	67.3	1.486	-0.363	0.377	0.193;
30	41.77	0.11	1.311	55.21	1.811	-0.588	0.625	0.353;
40	41.4	0.11	1.585	45.29	2.208	-0.846	0.924	0.575;
50	40.99	0.11	1.912	37.15	2.691	-1.139	1.283	0.883;
60	40.53	0.11	2.302	30.48	3.28	-1.463	1.707	1.298;
70	40.03	0.11	2.762	25.0	3.998	-1.812	2.199	1.843;
80	39.5	0.11	3.303	20.51	4.874	-2.181	2.765	2.544;
90	38.95	0.11	3.932	16.83	5.941	-2.565	3.411	3.435;
100	38.39	0.11	4.658	13.8	7.242	-2.96	4.147	4.55;
110	37.81	0.11	5.487	11.32	8.828	-3.362	4.987	5.933;
120	37.21	0.11	6.422	9.289	10.76	-3.769	5.947	7.64;
130	36.61	0.11	7.468	7.62	13.12	-4.18	7.056	9.746;
140	35.99	0.11	8.627	6.251	15.99	-4.598	8.35	12.35;
150	35.36	0.11	9.9	5.128	19.49	-5.025	9.883	15.6;
160	34.69	0.11	11.29	4.207	23.76	-5.465	11.73	19.68;
170	33.98	0.11	12.81	3.451	28.96	-5.924	13.99	24.86;
173	33.76	0.11	13.29	3.252	30.74	-6.065	14.76	26.68; merging;
180	32.91	0.11	14.76	2.831	35.31	-6.599	17.95	34.26;
189	31.6	0.11	17.37	2.369	42.19	-7.396	23.41	47.52; acute zone;
190	31.44	0.11	17.71	2.323	43.04	-7.49	24.12	49.26;
200	29.65	0.11	21.67	1.905	52.46	-8.507	32.5	70.11;
210	27.46	0.11	26.76	1.563	63.95	-9.658	43.85	98.86;
220	24.78	0.11	33.17	1.282	77.96	-10.94	59.03	137.9;
230	21.47	0.11	41.14	1.052	95.03	-12.35	79.04	190.0;
232	20.72	0.11	42.95	1.011	98.87	-12.64	83.71	202.3; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 44.13 m

conc	dilutn	width	distnce	time				
(%)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.00627	99.33	44.15	26.0	4.92E-4	0.0	0.0	0.11	3.00E-4
1.00757	99.21	44.38	28.0	0.00554	0.0	0.0	0.11	3.00E-4
1.0084	99.12	44.61	30.0	0.0106	0.0	0.0	0.11	3.00E-4
1.00889	99.08	44.84	32.0	0.0156	0.0	0.0	0.11	3.00E-4
1.00922	99.04	45.06	34.0	0.0207	0.0	0.0	0.11	3.00E-4
1.00946	99.02	45.29	36.0	0.0257	0.0	0.0	0.11	3.00E-4
1.00965	99.0	45.52	38.0	0.0308	0.0	0.0	0.11	3.00E-4
1.00981	98.99	45.74	40.0	0.0358	0.0	0.0	0.11	3.00E-4
1.00993	98.97	45.96	42.0	0.0409	0.0	0.0	0.11	3.00E-4
1.01004	98.96	46.18	44.0	0.0459	0.0	0.0	0.11	3.00E-4
1.01013	98.95	46.4	46.0	0.051	0.0	0.0	0.11	3.00E-4
1.01021	98.95	46.62	48.0	0.056	0.0	0.0	0.11	3.00E-4
1.01028	98.94	46.84	50.0	0.0611	0.0	0.0	0.11	3.00E-4
1.01034	98.93	47.06	52.0	0.0661	0.0	0.0	0.11	3.00E-4
1.0104	98.93	47.28	54.0	0.0712	0.0	0.0	0.11	3.00E-4
1.01044	98.92	47.49	56.0	0.0762	0.0	0.0	0.11	3.00E-4
1.01048	98.92	47.71	58.0	0.0813	0.0	0.0	0.11	3.00E-4
1.01051	98.92	47.92	60.0	0.0864	0.0	0.0	0.11	3.00E-4
1.01052	98.92	48.13	62.0	0.0914	0.0	0.0	0.11	3.00E-4
1.01052	98.92	48.34	64.0	0.0965	0.0	0.0	0.11	3.00E-4
1.01051	98.92	48.55	66.0	0.102	0.0	0.0	0.11	3.00E-4
1.01048	98.92	48.76	68.0	0.107	0.0	0.0	0.11	3.00E-4
1.01042	98.93	48.97	70.0	0.112	0.0	0.0	0.11	3.00E-4
1.01034	98.93	49.18	72.0	0.117	0.0	0.0	0.11	3.00E-4
1.01023	98.94	49.39	74.0	0.122	0.0	0.0	0.11	3.00E-4

count: 25

/ UM3.

Case 29; ambient file C:\Plumes\SCTP18-29-40-51.001.db; Diffuser table record 2: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.11	90.0	0.0	21.1	0.0	0.0	0.11	90.0	0.0003	-1.966
15.0	0.11	90.0	0.0	21.1	0.0	0.0	0.11	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.7642	4.3	45.0	135.0	10.0	24.0	242.0	42.6	14.73	1.00E-3	23.0	100.0

Simulation:

Froude number: 48.16; effleunt density (sigma-T) -2.398; effleunt velocity 1.514(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	42.6	0.11	0.764	100.0	1.0	0.0	0.0	0.0;
10	42.35	0.11	0.919	82.03	1.219	-0.175	0.178	0.0787;
20	42.07	0.11	1.115	67.3	1.486	-0.378	0.391	0.19;
30	41.73	0.11	1.35	55.21	1.811	-0.613	0.649	0.348;
40	41.35	0.11	1.634	45.29	2.208	-0.883	0.959	0.568;
50	40.91	0.11	1.972	37.15	2.691	-1.19	1.333	0.874;
60	40.43	0.11	2.376	30.48	3.28	-1.534	1.776	1.29;
70	39.9	0.11	2.854	25.0	3.998	-1.906	2.293	1.84;
80	39.33	0.11	3.416	20.51	4.874	-2.302	2.888	2.552;
90	38.74	0.11	4.072	16.83	5.941	-2.715	3.569	3.459;
100	38.13	0.11	4.831	13.8	7.242	-3.142	4.345	4.599;
110	37.5	0.11	5.699	11.32	8.828	-3.577	5.229	6.017;
120	36.86	0.11	6.683	9.289	10.76	-4.018	6.239	7.77;
130	36.21	0.11	7.787	7.62	13.12	-4.465	7.4	9.931;
140	35.54	0.11	9.012	6.251	15.99	-4.917	8.751	12.6;
150	34.85	0.11	10.36	5.128	19.49	-5.379	10.34	15.92;
160	34.13	0.11	11.84	4.207	23.76	-5.853	12.25	20.08;
170	33.38	0.11	13.45	3.451	28.96	-6.346	14.57	25.35; merging;
180	32.05	0.11	15.8	2.831	35.31	-7.184	19.24	36.31;
186	31.11	0.11	17.71	2.514	39.76	-7.759	22.91	45.1; acute zone;
190	30.42	0.11	19.19	2.323	43.04	-8.17	25.75	52.01;
200	28.44	0.11	23.67	1.905	52.46	-9.296	34.6	73.85;
210	26.02	0.11	29.42	1.563	63.95	-10.57	46.55	103.9;
220	23.06	0.11	36.62	1.282	77.96	-11.99	62.51	144.8;
227	20.59	0.11	42.68	1.116	89.55	-13.06	76.62	181.4; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 44.04 m

conc	dilutn	width	distnce	time				
(%)	( )	(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.11102	89.97	44.08	24.0	7.84E-4	0.0	0.0	0.11	3.00E-4
1.11251	89.85	44.31	26.0	0.00583	0.0	0.0	0.11	3.00E-4
1.1134	89.78	44.54	28.0	0.0109	0.0	0.0	0.11	3.00E-4
1.11392	89.73	44.77	30.0	0.0159	0.0	0.0	0.11	3.00E-4
1.11428	89.71	45.0	32.0	0.021	0.0	0.0	0.11	3.00E-4
1.11455	89.68	45.22	34.0	0.026	0.0	0.0	0.11	3.00E-4
1.11475	89.67	45.45	36.0	0.0311	0.0	0.0	0.11	3.00E-4
1.11492	89.65	45.67	38.0	0.0361	0.0	0.0	0.11	3.00E-4
1.11506	89.64	45.89	40.0	0.0412	0.0	0.0	0.11	3.00E-4
1.11517	89.63	46.11	42.0	0.0462	0.0	0.0	0.11	3.00E-4
1.11527	89.63	46.33	44.0	0.0513	0.0	0.0	0.11	3.00E-4
1.11536	89.62	46.55	46.0	0.0563	0.0	0.0	0.11	3.00E-4
1.11544	89.61	46.77	48.0	0.0614	0.0	0.0	0.11	3.00E-4
1.11551	89.61	46.99	50.0	0.0664	0.0	0.0	0.11	3.00E-4
1.11557	89.6	47.2	52.0	0.0715	0.0	0.0	0.11	3.00E-4
1.11562	89.6	47.42	54.0	0.0765	0.0	0.0	0.11	3.00E-4
1.11566	89.6	47.63	56.0	0.0816	0.0	0.0	0.11	3.00E-4
1.11568	89.59	47.85	58.0	0.0866	0.0	0.0	0.11	3.00E-4
1.1157	89.59	48.06	60.0	0.0917	0.0	0.0	0.11	3.00E-4
1.1157	89.59	48.27	62.0	0.0967	0.0	0.0	0.11	3.00E-4
1.11568	89.59	48.48	64.0	0.102	0.0	0.0	0.11	3.00E-4
1.11564	89.6	48.69	66.0	0.107	0.0	0.0	0.11	3.00E-4
1.11558	89.6	48.9	68.0	0.112	0.0	0.0	0.11	3.00E-4
1.11549	89.61	49.11	70.0	0.117	0.0	0.0	0.11	3.00E-4
1.11536	89.62	49.31	72.0	0.122	0.0	0.0	0.11	3.00E-4
1.11521	89.63	49.52	74.0	0.127	0.0	0.0	0.11	3.00E-4

count: 26

/ UM3.

Case 40; ambient file C:\Plumes\SCTP18-29-40-51.001.db; Diffuser table record 3: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.11	90.0	0.0	21.1	0.0	0.0	0.11	90.0	0.0003	-1.966
15.0	0.11	90.0	0.0	21.1	0.0	0.0	0.11	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.8038	4.3	45.0	135.0	10.0	24.0	242.0	42.6	17.88	1.00E-3	23.0	100.0

Simulation:

Froude number: 51.53; effleunt density (sigma-T) -2.398; effleunt velocity 1.662(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	42.6	0.11	0.804	100.0	1.0	0.0	0.0	0.0;
10	42.34	0.11	0.967	82.03	1.219	-0.186	0.189	0.0765;
20	42.03	0.11	1.173	67.3	1.486	-0.404	0.417	0.185;
30	41.67	0.11	1.422	55.21	1.811	-0.656	0.692	0.339;
40	41.26	0.11	1.722	45.29	2.208	-0.948	1.023	0.556;
50	40.79	0.11	2.081	37.15	2.691	-1.281	1.421	0.859;
60	40.25	0.11	2.509	30.48	3.28	-1.658	1.899	1.275;
70	39.66	0.11	3.018	25.0	3.998	-2.072	2.459	1.832;
80	39.03	0.11	3.618	20.51	4.874	-2.516	3.107	2.561;
90	38.36	0.11	4.322	16.83	5.941	-2.984	3.851	3.496;
100	37.66	0.11	5.139	13.8	7.242	-3.47	4.699	4.679;
110	36.95	0.11	6.079	11.32	8.828	-3.968	5.665	6.158;
120	36.21	0.11	7.15	9.289	10.76	-4.474	6.765	7.991;
130	35.46	0.11	8.357	7.62	13.12	-4.986	8.026	10.25;
140	34.7	0.11	9.703	6.251	15.99	-5.505	9.484	13.04;
150	33.92	0.11	11.19	5.128	19.49	-6.033	11.19	16.5;
160	33.1	0.11	12.83	4.207	23.76	-6.573	13.22	20.82;
165	32.68	0.11	13.7	3.81	26.23	-6.849	14.38	23.37; merging;
170	32.01	0.11	14.79	3.451	28.96	-7.286	16.37	27.85;
180	30.38	0.11	17.87	2.831	35.31	-8.313	21.67	40.07;
182	30.02	0.11	18.62	2.721	36.73	-8.535	22.94	43.04; acute zone;
190	28.44	0.11	22.1	2.323	43.04	-9.488	28.85	57.12;
200	26.08	0.11	27.62	1.905	52.46	-10.83	38.56	80.81;
210	23.22	0.11	34.63	1.563	63.95	-12.34	51.63	113.4;
219	20.1	0.11	42.44	1.308	76.43	-13.85	67.05	152.5; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 43.97 m

conc	dilutn	width	distnce	time				
(%)	(m)	(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.30245	76.75	44.1	22.0	0.00286	0.0	0.0	0.11	3.00E-4
1.30399	76.66	44.33	24.0	0.00791	0.0	0.0	0.11	3.00E-4
1.30481	76.61	44.56	26.0	0.013	0.0	0.0	0.11	3.00E-4
1.30533	76.58	44.79	28.0	0.018	0.0	0.0	0.11	3.00E-4
1.3057	76.55	45.01	30.0	0.0231	0.0	0.0	0.11	3.00E-4
1.30598	76.54	45.24	32.0	0.0281	0.0	0.0	0.11	3.00E-4
1.30619	76.53	45.46	34.0	0.0332	0.0	0.0	0.11	3.00E-4
1.30637	76.52	45.69	36.0	0.0382	0.0	0.0	0.11	3.00E-4
1.30653	76.51	45.91	38.0	0.0433	0.0	0.0	0.11	3.00E-4
1.30665	76.5	46.13	40.0	0.0483	0.0	0.0	0.11	3.00E-4
1.30677	76.49	46.35	42.0	0.0534	0.0	0.0	0.11	3.00E-4
1.30686	76.49	46.57	44.0	0.0584	0.0	0.0	0.11	3.00E-4
1.30695	76.48	46.78	46.0	0.0635	0.0	0.0	0.11	3.00E-4
1.30702	76.48	47.0	48.0	0.0685	0.0	0.0	0.11	3.00E-4
1.30709	76.47	47.22	50.0	0.0736	0.0	0.0	0.11	3.00E-4
1.30714	76.47	47.43	52.0	0.0786	0.0	0.0	0.11	3.00E-4
1.30718	76.47	47.64	54.0	0.0837	0.0	0.0	0.11	3.00E-4
1.30721	76.47	47.86	56.0	0.0887	0.0	0.0	0.11	3.00E-4
1.30722	76.47	48.07	58.0	0.0938	0.0	0.0	0.11	3.00E-4
1.30721	76.47	48.28	60.0	0.0988	0.0	0.0	0.11	3.00E-4
1.30718	76.47	48.49	62.0	0.104	0.0	0.0	0.11	3.00E-4
1.30712	76.47	48.7	64.0	0.109	0.0	0.0	0.11	3.00E-4
1.30704	76.48	48.91	66.0	0.114	0.0	0.0	0.11	3.00E-4
1.30691	76.48	49.11	68.0	0.119	0.0	0.0	0.11	3.00E-4
1.30675	76.49	49.32	70.0	0.124	0.0	0.0	0.11	3.00E-4
1.30655	76.5	49.53	72.0	0.129	0.0	0.0	0.11	3.00E-4
1.30631	76.52	49.73	74.0	0.134	0.0	0.0	0.11	3.00E-4

count: 27



/ UM3.

Case 51; ambient file C:\Plumes\SCTP18-29-40-51.001.db; Diffuser table record 4: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.11	90.0	0.0	21.1	0.0	0.0	0.11	90.0	0.0003	-1.966
15.0	0.11	90.0	0.0	21.1	0.0	0.0	0.11	90.0	0.0003	-1.966

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	()	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.9056	4.3	45.0	135.0	10.0	24.0	242.0	42.6	29.21	1.00E-3	23.0	100.0

Simulation:

Froude number: 62.48; effleunt density (sigma-T) -2.398; effleunt velocity 2.139(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	()	(ft)	(ft)	(s)
0	42.6	0.11	0.906	100.0	1.0	0.0	0.0	0.0;
10	42.29	0.11	1.09	82.03	1.219	-0.217	0.22	0.0692;
20	41.93	0.11	1.324	67.3	1.486	-0.472	0.485	0.169;
30	41.51	0.11	1.607	55.21	1.811	-0.772	0.804	0.311;
40	41.01	0.11	1.949	45.29	2.208	-1.121	1.19	0.512;
50	40.44	0.11	2.36	37.15	2.691	-1.525	1.655	0.797;
60	39.78	0.11	2.853	30.48	3.28	-1.988	2.215	1.195;
70	39.04	0.11	3.442	25.0	3.998	-2.514	2.886	1.746;
80	38.21	0.11	4.143	20.51	4.874	-3.098	3.678	2.49;
90	37.31	0.11	4.972	16.83	5.941	-3.728	4.597	3.469;
100	36.35	0.11	5.945	13.8	7.242	-4.396	5.653	4.734;
110	35.35	0.11	7.077	11.32	8.828	-5.093	6.858	6.342;
120	34.32	0.11	8.385	9.289	10.76	-5.81	8.229	8.359;
130	33.26	0.11	9.878	7.62	13.12	-6.541	9.79	10.87;
140	32.17	0.11	11.57	6.251	15.99	-7.282	11.57	13.96;
150	31.07	0.11	13.46	5.128	19.49	-8.033	13.62	17.78;
155	30.47	0.11	14.48	4.645	21.52	-8.433	14.84	20.15; merging;
160	29.52	0.11	15.8	4.207	23.76	-9.065	16.89	24.27;
170	27.33	0.11	19.56	3.451	28.96	-10.5	22.1	35.15; acute zone;
180	24.74	0.11	24.84	2.831	35.31	-12.14	29.05	50.31;
190	21.67	0.11	31.84	2.323	43.04	-14.0	38.29	71.3;
199	18.41	0.11	39.84	1.943	51.43	-15.88	49.19	96.82; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 43.18 m

conc	dilutn	width	distnce	time				
(%)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.93429	51.68	43.21	16.0	6.20E-4	0.0	0.0	0.11	3.00E-4
1.93687	51.61	43.44	18.0	0.00567	0.0	0.0	0.11	3.00E-4
1.93845	51.57	43.67	20.0	0.0107	0.0	0.0	0.11	3.00E-4
1.93937	51.54	43.89	22.0	0.0158	0.0	0.0	0.11	3.00E-4
1.94	51.52	44.12	24.0	0.0208	0.0	0.0	0.11	3.00E-4
1.94047	51.51	44.34	26.0	0.0259	0.0	0.0	0.11	3.00E-4
1.94082	51.5	44.56	28.0	0.0309	0.0	0.0	0.11	3.00E-4
1.94111	51.49	44.79	30.0	0.036	0.0	0.0	0.11	3.00E-4
1.94135	51.49	45.01	32.0	0.041	0.0	0.0	0.11	3.00E-4
1.94156	51.48	45.23	34.0	0.0461	0.0	0.0	0.11	3.00E-4
1.94173	51.48	45.45	36.0	0.0511	0.0	0.0	0.11	3.00E-4
1.94189	51.47	45.66	38.0	0.0562	0.0	0.0	0.11	3.00E-4
1.94202	51.47	45.88	40.0	0.0612	0.0	0.0	0.11	3.00E-4
1.94214	51.47	46.1	42.0	0.0663	0.0	0.0	0.11	3.00E-4
1.94224	51.47	46.31	44.0	0.0713	0.0	0.0	0.11	3.00E-4
1.94233	51.46	46.52	46.0	0.0764	0.0	0.0	0.11	3.00E-4
1.94239	51.46	46.74	48.0	0.0814	0.0	0.0	0.11	3.00E-4
1.94244	51.46	46.95	50.0	0.0865	0.0	0.0	0.11	3.00E-4
1.94246	51.46	47.16	52.0	0.0915	0.0	0.0	0.11	3.00E-4
1.94246	51.46	47.37	54.0	0.0966	0.0	0.0	0.11	3.00E-4
1.94242	51.46	47.58	56.0	0.102	0.0	0.0	0.11	3.00E-4
1.94234	51.46	47.79	58.0	0.107	0.0	0.0	0.11	3.00E-4
1.94221	51.47	47.99	60.0	0.112	0.0	0.0	0.11	3.00E-4
1.94204	51.47	48.2	62.0	0.117	0.0	0.0	0.11	3.00E-4
1.94181	51.48	48.4	64.0	0.122	0.0	0.0	0.11	3.00E-4
1.94151	51.48	48.61	66.0	0.127	0.0	0.0	0.11	3.00E-4
1.94116	51.49	48.81	68.0	0.132	0.0	0.0	0.11	3.00E-4
1.94073	51.51	49.02	70.0	0.137	0.0	0.0	0.11	3.00E-4
1.94023	51.52	49.22	72.0	0.142	0.0	0.0	0.11	3.00E-4
1.93965	51.53	49.42	74.0	0.147	0.0	0.0	0.11	3.00E-4

count: 30

; 3:29:56 PM. amb fills: 2

/ UM3. 12/15/2022 3:41:05 PM

Case 19; ambient file C:\Plumes\SCTP19-30-41-52.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.33	90.0	0.0	10.7	0.0	0.0	0.33	90.0	0.0003	-0.3
15.0	0.33	90.0	0.0	10.7	0.0	0.0	0.33	90.0	0.0003	-0.3

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.7993	4.3	45.0	135.0	10.0	16.0	24.0	242.0	43.6	17.5	1.00E-3	19.3	100.0

Simulation:

Froude number: 29.6; effleunt density (sigma-T) -1.59; effleunt velocity 1.645(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	43.6	0.33	0.799	100.0	1.0	0.0	0.0	0.0;
10	43.4	0.33	0.955	82.03	1.219	-0.139	0.145	0.0574;
20	43.2	0.33	1.148	67.3	1.485	-0.285	0.313	0.132;
30	42.98	0.33	1.374	55.21	1.81	-0.44	0.508	0.227;
40	42.75	0.33	1.639	45.29	2.206	-0.599	0.734	0.346;
50	42.52	0.33	1.943	37.15	2.689	-0.762	0.992	0.495;
60	42.29	0.33	2.29	30.48	3.278	-0.927	1.29	0.679;
70	42.05	0.33	2.682	25.0	3.995	-1.093	1.633	0.904;
80	41.81	0.33	3.117	20.51	4.87	-1.259	2.032	1.18;
90	41.57	0.33	3.596	16.83	5.936	-1.428	2.502	1.521;
100	41.32	0.33	4.121	13.8	7.236	-1.601	3.067	1.947;
110	41.06	0.33	4.691	11.32	8.821	-1.781	3.757	2.485;
120	40.79	0.33	5.309	9.289	10.75	-1.969	4.616	3.175;
130	40.5	0.33	5.979	7.62	13.11	-2.169	5.703	4.068;
140	40.18	0.33	6.707	6.251	15.98	-2.384	7.096	5.236;
150	39.84	0.33	7.498	5.128	19.48	-2.616	8.898	6.772;
160	39.47	0.33	8.361	4.207	23.74	-2.867	11.25	8.801;
170	39.05	0.33	9.303	3.451	28.94	-3.139	14.31	11.48;
180	38.59	0.33	10.33	2.831	35.28	-3.435	18.33	15.03;
190	38.08	0.33	11.47	2.323	43.0	-3.755	23.59	19.72;
191	38.03	0.33	11.59	2.277	43.86	-3.788	24.2	20.26; acute zone;
194	37.86	0.33	11.95	2.146	46.55	-3.89	26.13	21.98; merging;
200	37.33	0.33	12.84	1.905	52.42	-4.207	32.7	27.87;
210	36.23	0.33	14.85	1.563	63.9	-4.824	47.6	41.3;
220	34.9	0.33	17.51	1.282	77.89	-5.514	67.85	59.62;
230	33.26	0.33	20.91	1.052	94.95	-6.276	94.97	84.25;
240	31.24	0.33	25.17	0.863	115.7	-7.1	130.6	116.7;
250	28.77	0.33	30.47	0.708	141.1	-7.978	176.8	158.9;
260	25.72	0.33	37.0	0.581	172.0	-8.898	235.6	212.7;
261	25.38	0.33	37.73	0.569	175.4	-8.991	242.3	218.8; chronic zone;
270	21.99	0.33	45.03	0.476	209.6	-9.849	309.6	280.6; surface;

Outside chronic zone

/ UM3.

Case 30; ambient file C:\Plumes\SCTP19-30-41-52.001.db; Diffuser table record 2: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.33	90.0	0.0	10.7	0.0	0.0	0.33	90.0	0.0003	-0.3
15.0	0.33	90.0	0.0	10.7	0.0	0.0	0.33	90.0	0.0003	-0.3

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChronicMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.8232	4.3	45.0	135.0	10.0	24.0	242.0	43.6	19.6	1.00E-3	19.3	100.0

Simulation:

Froude number: 30.8; effleunt density (sigma-T) -1.59; effleunt velocity 1.737(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	43.6	0.33	0.823	100.0	1.0	0.0	0.0	0.0;
10	43.39	0.33	0.984	82.03	1.219	-0.147	0.153	0.0575;
20	43.17	0.33	1.184	67.3	1.485	-0.303	0.331	0.132;
30	42.94	0.33	1.419	55.21	1.81	-0.469	0.538	0.229;
40	42.69	0.33	1.694	45.29	2.206	-0.641	0.777	0.351;
50	42.44	0.33	2.011	37.15	2.689	-0.817	1.052	0.504;
60	42.19	0.33	2.375	30.48	3.278	-0.996	1.367	0.692;
70	41.93	0.33	2.786	25.0	3.995	-1.176	1.729	0.924;
80	41.67	0.33	3.245	20.51	4.87	-1.357	2.15	1.208;
90	41.41	0.33	3.753	16.83	5.936	-1.54	2.643	1.559;
100	41.14	0.33	4.309	13.8	7.236	-1.728	3.231	1.995;
110	40.86	0.33	4.914	11.32	8.821	-1.921	3.946	2.544;
120	40.57	0.33	5.572	9.289	10.75	-2.123	4.83	3.245;
130	40.26	0.33	6.285	7.62	13.11	-2.337	5.942	4.15;
140	39.93	0.33	7.059	6.251	15.98	-2.566	7.361	5.33;
150	39.56	0.33	7.9	5.128	19.48	-2.813	9.191	6.879;
160	39.16	0.33	8.816	4.207	23.74	-3.08	11.57	8.921;
170	38.72	0.33	9.817	3.451	28.94	-3.369	14.67	11.62;
180	38.24	0.33	10.91	2.831	35.28	-3.683	18.73	15.19;
189	37.75	0.33	11.99	2.369	42.16	-3.987	23.44	19.37; merging;
190	37.68	0.33	12.11	2.323	43.0	-4.03	24.17	20.02; acute zone;
200	36.7	0.33	13.81	1.905	52.42	-4.621	35.36	30.02;
210	35.5	0.33	16.16	1.563	63.9	-5.299	50.93	44.01;
220	34.02	0.33	19.21	1.282	77.89	-6.062	72.15	63.17;
230	32.2	0.33	23.08	1.052	94.95	-6.904	100.6	88.97;
240	29.97	0.33	27.9	0.863	115.7	-7.818	138.1	123.1;
250	27.23	0.33	33.87	0.708	141.1	-8.79	186.6	167.3;
260	23.86	0.33	41.22	0.581	172.0	-9.81	248.4	223.8; chronic zone;
265	21.91	0.33	45.5	0.526	189.9	-10.33	285.1	257.4; surface;

Outside chronic zone

/ UM3.

Case 41; ambient file C:\Plumes\SCTF19-30-41-52.001.db; Diffuser table record 3: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.33	90.0	0.0	10.7	0.0	0.0	0.33	90.0	0.0003	-0.3
15.0	0.33	90.0	0.0	10.7	0.0	0.0	0.33	90.0	0.0003	-0.3

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.8644	4.3	45.0	135.0	10.0	24.0	242.0	43.6	23.8	1.00E-3	19.3	100.0

Simulation:

Froude number: 33.1; effleunt density (sigma-T) -1.59; effleunt velocity 1.913(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	43.6	0.33	0.864	100.0	1.0	0.0	0.0	0.0;
10	43.37	0.33	1.034	82.03	1.219	-0.16	0.167	0.0572;
20	43.13	0.33	1.245	67.3	1.485	-0.334	0.363	0.133;
30	42.86	0.33	1.495	55.21	1.81	-0.52	0.591	0.231;
40	42.59	0.33	1.789	45.29	2.206	-0.715	0.855	0.357;
50	42.3	0.33	2.13	37.15	2.689	-0.917	1.158	0.515;
60	42.01	0.33	2.522	30.48	3.278	-1.122	1.506	0.712;
70	41.71	0.33	2.968	25.0	3.995	-1.33	1.905	0.955;
80	41.41	0.33	3.47	20.51	4.87	-1.54	2.365	1.253;
90	41.11	0.33	4.028	16.83	5.936	-1.751	2.901	1.62;
100	40.8	0.33	4.642	13.8	7.236	-1.966	3.534	2.075;
110	40.49	0.33	5.313	11.32	8.821	-2.186	4.294	2.644;
120	40.16	0.33	6.044	9.289	10.75	-2.415	5.224	3.364;
130	39.81	0.33	6.836	7.62	13.11	-2.656	6.383	4.289;
140	39.43	0.33	7.697	6.251	15.98	-2.913	7.85	5.488;
150	39.03	0.33	8.631	5.128	19.48	-3.188	9.728	7.057;
160	38.59	0.33	9.648	4.207	23.74	-3.484	12.15	9.119;
170	38.1	0.33	10.76	3.451	28.94	-3.806	15.31	11.84;
180	37.56	0.33	11.97	2.831	35.28	-4.154	19.43	15.43;
182	37.45	0.33	12.23	2.721	36.7	-4.227	20.4	16.28; merging;
187	37.0	0.33	13.0	2.465	40.52	-4.51	24.41	19.81; acute zone;
190	36.69	0.33	13.55	2.323	43.0	-4.703	27.34	22.41;
200	35.52	0.33	15.84	1.905	52.42	-5.407	39.51	33.22;
210	34.09	0.33	18.84	1.563	63.9	-6.211	56.34	48.28;
220	32.34	0.33	22.66	1.282	77.89	-7.118	79.33	68.97;
230	30.18	0.33	27.45	1.052	94.95	-8.121	110.2	96.88;
240	27.54	0.33	33.38	0.863	115.7	-9.211	150.9	133.8;
250	24.28	0.33	40.69	0.708	141.1	-10.37	203.6	181.8;
255	22.39	0.33	44.95	0.641	155.8	-10.98	235.2	210.6; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 44.74 m

conc	dilutn	width	distnce	time				
(%)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
0.63814	156.5	44.74	72.0	1.90E-4	0.0	0.0	0.33	3.00E-4
0.63829	156.5	44.82	74.0	0.00187	0.0	0.0	0.33	3.00E-4

count: 2

/ UM3.

Case 52; ambient file C:\Plumes\SCTP19-30-41-52.001.db; Diffuser table record 4: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.33	90.0	0.0	10.7	0.0	0.0	0.33	90.0	0.0003	-0.3
15.0	0.33	90.0	0.0	10.7	0.0	0.0	0.33	90.0	0.0003	-0.3

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.9483	4.3	45.0	135.0	10.0	24.0	242.0	43.6	38.18	1.00E-3	19.3	100.0

Simulation:

Froude number: 42.12; effleunt density (sigma-T) -1.59; effleunt velocity 2.549(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	43.6	0.33	0.948	100.0	1.0	0.0	0.0	0.0;
10	43.33	0.33	1.137	82.03	1.219	-0.192	0.198	0.0514;
20	43.02	0.33	1.374	67.3	1.485	-0.409	0.435	0.122;
30	42.68	0.33	1.656	55.21	1.81	-0.651	0.718	0.218;
40	42.31	0.33	1.99	45.29	2.206	-0.912	1.049	0.345;
50	41.92	0.33	2.384	37.15	2.689	-1.19	1.432	0.509;
60	41.5	0.33	2.844	30.48	3.278	-1.479	1.872	0.717;
70	41.08	0.33	3.377	25.0	3.995	-1.777	2.376	0.978;
80	40.65	0.33	3.986	20.51	4.87	-2.08	2.951	1.302;
90	40.21	0.33	4.676	16.83	5.936	-2.387	3.61	1.701;
100	39.77	0.33	5.448	13.8	7.236	-2.696	4.372	2.193;
110	39.32	0.33	6.303	11.32	8.821	-3.01	5.263	2.8;
120	38.86	0.33	7.243	9.289	10.75	-3.331	6.32	3.557;
130	38.38	0.33	8.269	7.62	13.11	-3.662	7.598	4.511;
140	37.88	0.33	9.386	6.251	15.98	-4.009	9.169	5.725;
150	37.34	0.33	10.6	5.128	19.48	-4.375	11.13	7.29;
160	36.77	0.33	11.92	4.207	23.74	-4.765	13.63	9.325;
166	36.4	0.33	12.76	3.736	26.74	-5.013	15.45	10.84; merging;
170	36.02	0.33	13.44	3.451	28.94	-5.27	17.51	12.57;
179	34.96	0.33	15.47	2.888	34.58	-5.967	23.83	17.92; acute zone;
180	34.83	0.33	15.74	2.831	35.28	-6.051	24.65	18.63;
190	33.39	0.33	18.88	2.323	43.0	-6.965	34.69	27.27;
200	31.65	0.33	22.93	1.905	52.42	-8.032	48.79	39.57;
210	29.51	0.33	28.04	1.563	63.9	-9.263	68.43	56.86;
220	26.89	0.33	34.4	1.282	77.89	-10.66	95.37	80.79;
230	23.69	0.33	42.26	1.052	94.95	-12.22	131.7	113.3;
234	22.21	0.33	45.89	0.972	102.8	-12.88	149.4	129.2; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 45.02 m

conc	dilutn	width	distnce	time				
(%)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
0.9672	103.3	45.03	46.0	2.48E-4	0.0	0.0	0.33	3.00E-4
0.96745	103.2	45.11	48.0	0.00193	0.0	0.0	0.33	3.00E-4
0.96795	103.2	45.19	50.0	0.00361	0.0	0.0	0.33	3.00E-4
0.96838	103.1	45.27	52.0	0.0053	0.0	0.0	0.33	3.00E-4
0.96871	103.1	45.34	54.0	0.00698	0.0	0.0	0.33	3.00E-4
0.96898	103.1	45.42	56.0	0.00867	0.0	0.0	0.33	3.00E-4
0.9692	103.0	45.5	58.0	0.0103	0.0	0.0	0.33	3.00E-4
0.96939	103.0	45.57	60.0	0.012	0.0	0.0	0.33	3.00E-4
0.96954	103.0	45.65	62.0	0.0137	0.0	0.0	0.33	3.00E-4
0.96968	103.0	45.73	64.0	0.0154	0.0	0.0	0.33	3.00E-4
0.9698	103.0	45.8	66.0	0.0171	0.0	0.0	0.33	3.00E-4
0.96991	103.0	45.88	68.0	0.0188	0.0	0.0	0.33	3.00E-4
0.97001	103.0	45.96	70.0	0.0204	0.0	0.0	0.33	3.00E-4
0.97009	103.0	46.03	72.0	0.0221	0.0	0.0	0.33	3.00E-4
0.97017	102.9	46.11	74.0	0.0238	0.0	0.0	0.33	3.00E-4

count: 15

; 3:41:05 PM. amb fills: 2

Case 20; ambient file C:\Plumes\SCTP20-31-42-53.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.16	90.0	0.0	10.7	0.0	0.0	0.16	90.0	0.0003	-0.3
15.0	0.16	90.0	0.0	10.7	0.0	0.0	0.16	90.0	0.0003	-0.3

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChrncMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.7993	4.3	45.0	135.0	10.0	16.0	24.0	242.0	43.6	17.5	1.00E-3	19.3	100.0

Simulation:

Froude number: 29.6; effleunt density (sigma-T) -1.59; effleunt velocity 1.645(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	43.6	0.16	0.799	100.0	1.0	0.0	0.0	0.0;
10	43.36	0.16	0.96	82.03	1.219	-0.173	0.177	0.0718;
20	43.07	0.16	1.162	67.3	1.485	-0.371	0.389	0.172;
30	42.75	0.16	1.404	55.21	1.81	-0.598	0.646	0.312;
40	42.39	0.16	1.694	45.29	2.206	-0.854	0.953	0.504;
50	41.99	0.16	2.038	37.15	2.689	-1.135	1.314	0.762;
60	41.56	0.16	2.444	30.48	3.278	-1.437	1.733	1.098;
70	41.11	0.16	2.92	25.0	3.995	-1.754	2.215	1.528;
80	40.63	0.16	3.473	20.51	4.87	-2.082	2.765	2.072;
90	40.15	0.16	4.109	16.83	5.936	-2.418	3.392	2.751;
100	39.65	0.16	4.834	13.8	7.236	-2.76	4.108	3.591;
110	39.15	0.16	5.649	11.32	8.821	-3.105	4.929	4.626;
120	38.64	0.16	6.559	9.289	10.75	-3.453	5.879	5.901;
130	38.11	0.16	7.564	7.62	13.11	-3.807	6.992	7.479;
140	37.56	0.16	8.666	6.251	15.98	-4.17	8.318	9.448;
150	36.99	0.16	9.87	5.128	19.48	-4.544	9.921	11.93;
160	36.38	0.16	11.18	4.207	23.74	-4.934	11.89	15.08;
170	35.73	0.16	12.61	3.451	28.94	-5.344	14.34	19.12;
172	35.59	0.16	12.91	3.317	30.11	-5.429	14.9	20.06; merging;
180	34.69	0.16	14.46	2.831	35.28	-5.97	18.82	26.7;
187	33.75	0.16	16.29	2.465	40.52	-6.511	23.29	34.38; acute zone;
190	33.3	0.16	17.21	2.323	43.0	-6.758	25.52	38.24;
200	31.62	0.16	20.87	1.905	52.42	-7.647	34.57	54.13;
210	29.54	0.16	25.57	1.563	63.9	-8.641	46.72	75.75;
220	26.98	0.16	31.46	1.282	77.89	-9.732	62.8	104.7;
230	23.82	0.16	38.78	1.052	94.95	-10.91	83.72	142.7;
236	21.58	0.16	43.96	0.934	106.9	-11.65	99.03	170.8; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 44.44 m

conc	dilutn	width	distnce	time				
(%)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
0.93014	107.4	44.56	32.0	0.00279	0.0	0.0	0.16	3.00E-4
0.93098	107.3	44.72	34.0	0.00626	0.0	0.0	0.16	3.00E-4
0.9315	107.2	44.88	36.0	0.00973	0.0	0.0	0.16	3.00E-4
0.93186	107.2	45.04	38.0	0.0132	0.0	0.0	0.16	3.00E-4
0.93213	107.1	45.2	40.0	0.0167	0.0	0.0	0.16	3.00E-4
0.93233	107.1	45.35	42.0	0.0201	0.0	0.0	0.16	3.00E-4
0.9325	107.1	45.51	44.0	0.0236	0.0	0.0	0.16	3.00E-4
0.93264	107.1	45.66	46.0	0.0271	0.0	0.0	0.16	3.00E-4
0.93275	107.1	45.82	48.0	0.0306	0.0	0.0	0.16	3.00E-4
0.93285	107.1	45.97	50.0	0.034	0.0	0.0	0.16	3.00E-4
0.93294	107.1	46.13	52.0	0.0375	0.0	0.0	0.16	3.00E-4
0.93302	107.0	46.28	54.0	0.041	0.0	0.0	0.16	3.00E-4
0.93309	107.0	46.43	56.0	0.0445	0.0	0.0	0.16	3.00E-4
0.93315	107.0	46.58	58.0	0.0479	0.0	0.0	0.16	3.00E-4
0.93321	107.0	46.74	60.0	0.0514	0.0	0.0	0.16	3.00E-4
0.93326	107.0	46.89	62.0	0.0549	0.0	0.0	0.16	3.00E-4
0.93331	107.0	47.04	64.0	0.0583	0.0	0.0	0.16	3.00E-4
0.93335	107.0	47.19	66.0	0.0618	0.0	0.0	0.16	3.00E-4
0.93339	107.0	47.34	68.0	0.0653	0.0	0.0	0.16	3.00E-4
0.93343	107.0	47.49	70.0	0.0688	0.0	0.0	0.16	3.00E-4
0.93346	107.0	47.64	72.0	0.0722	0.0	0.0	0.16	3.00E-4
0.93349	107.0	47.79	74.0	0.0757	0.0	0.0	0.16	3.00E-4

count: 22

/ UM3.

Case 31; ambient file C:\Plumes\SCTP20-31-42-53.001.db; Diffuser table record 2: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.16	90.0	0.0	10.7	0.0	0.0	0.16	90.0	0.0003	-0.3
15.0	0.16	90.0	0.0	10.7	0.0	0.0	0.16	90.0	0.0003	-0.3

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.8232	4.3	45.0	135.0	10.0	24.0	242.0	43.6	19.6	1.00E-3	19.3	100.0

Simulation:

Froude number: 30.8; effleunt density (sigma-T) -1.59; effleunt velocity 1.737 (m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	43.6	0.16	0.823	100.0	1.0	0.0	0.0	0.0;
10	43.35	0.16	0.989	82.03	1.219	-0.18	0.184	0.0708;
20	43.05	0.16	1.198	67.3	1.485	-0.387	0.405	0.17;
30	42.72	0.16	1.448	55.21	1.81	-0.625	0.672	0.309;
40	42.33	0.16	1.748	45.29	2.206	-0.894	0.992	0.5;
50	41.91	0.16	2.104	37.15	2.689	-1.192	1.371	0.759;
60	41.45	0.16	2.525	30.48	3.278	-1.514	1.812	1.099;
70	40.96	0.16	3.021	25.0	3.995	-1.854	2.319	1.537;
80	40.46	0.16	3.597	20.51	4.87	-2.208	2.899	2.092;
90	39.93	0.16	4.263	16.83	5.936	-2.572	3.561	2.787;
100	39.39	0.16	5.022	13.8	7.236	-2.942	4.315	3.649;
110	38.85	0.16	5.881	11.32	8.821	-3.316	5.178	4.712;
120	38.29	0.16	6.841	9.289	10.75	-3.694	6.174	6.022;
130	37.72	0.16	7.904	7.62	13.11	-4.077	7.337	7.64;
140	37.13	0.16	9.073	6.251	15.98	-4.469	8.713	9.654;
150	36.52	0.16	10.35	5.128	19.48	-4.872	10.37	12.18;
160	35.87	0.16	11.74	4.207	23.74	-5.291	12.39	15.39;
169	35.24	0.16	13.1	3.52	28.37	-5.685	14.63	19.03; merging;
170	35.15	0.16	13.26	3.451	28.94	-5.742	14.98	19.61;
180	33.89	0.16	15.51	2.831	35.28	-6.5	20.13	28.25;
185	33.17	0.16	16.97	2.564	38.95	-6.922	23.39	33.79; acute zone;
190	32.36	0.16	18.68	2.323	43.0	-7.37	27.18	40.32;
200	30.5	0.16	22.85	1.905	52.42	-8.355	36.72	56.97;
210	28.21	0.16	28.15	1.563	63.9	-9.454	49.51	79.63;
220	25.38	0.16	34.78	1.282	77.89	-10.66	66.43	110.0;
230	21.89	0.16	42.99	1.052	94.95	-11.97	88.43	149.9;
231	21.5	0.16	43.92	1.031	96.85	-12.1	90.96	154.5; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 44.42 m

conc	dilutn	width	distnce	time				
(%)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.0264	97.3	44.42	28.0	5.58E-5	0.0	0.0	0.16	3.00E-4
1.02718	97.23	44.58	30.0	0.00353	0.0	0.0	0.16	3.00E-4
1.02802	97.15	44.74	32.0	0.007	0.0	0.0	0.16	3.00E-4
1.02855	97.1	44.9	34.0	0.0105	0.0	0.0	0.16	3.00E-4
1.02892	97.06	45.06	36.0	0.0139	0.0	0.0	0.16	3.00E-4
1.0292	97.04	45.21	38.0	0.0174	0.0	0.0	0.16	3.00E-4
1.02941	97.02	45.37	40.0	0.0209	0.0	0.0	0.16	3.00E-4
1.02959	97.0	45.53	42.0	0.0244	0.0	0.0	0.16	3.00E-4
1.02974	96.99	45.68	44.0	0.0278	0.0	0.0	0.16	3.00E-4
1.02986	96.98	45.84	46.0	0.0313	0.0	0.0	0.16	3.00E-4
1.02997	96.97	45.99	48.0	0.0348	0.0	0.0	0.16	3.00E-4
1.03006	96.96	46.14	50.0	0.0383	0.0	0.0	0.16	3.00E-4
1.03015	96.95	46.3	52.0	0.0417	0.0	0.0	0.16	3.00E-4
1.03022	96.94	46.45	54.0	0.0452	0.0	0.0	0.16	3.00E-4
1.03029	96.94	46.6	56.0	0.0487	0.0	0.0	0.16	3.00E-4
1.03035	96.93	46.75	58.0	0.0521	0.0	0.0	0.16	3.00E-4
1.03041	96.92	46.9	60.0	0.0556	0.0	0.0	0.16	3.00E-4
1.03046	96.92	47.06	62.0	0.0591	0.0	0.0	0.16	3.00E-4
1.0305	96.92	47.21	64.0	0.0626	0.0	0.0	0.16	3.00E-4
1.03055	96.91	47.36	66.0	0.066	0.0	0.0	0.16	3.00E-4
1.03059	96.91	47.5	68.0	0.0695	0.0	0.0	0.16	3.00E-4
1.03062	96.9	47.65	70.0	0.073	0.0	0.0	0.16	3.00E-4
1.03065	96.9	47.8	72.0	0.0764	0.0	0.0	0.16	3.00E-4
1.03068	96.9	47.95	74.0	0.0799	0.0	0.0	0.16	3.00E-4

count: 24

/ UM3.

Case 42; ambient file C:\Plumes\SCTP20-31-42-53.001.db; Diffuser table record 3: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.16	90.0	0.0	10.7	0.0	0.0	0.16	90.0	0.0003	-0.3
15.0	0.16	90.0	0.0	10.7	0.0	0.0	0.16	90.0	0.0003	-0.3

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.8644	4.3	45.0	135.0	10.0	24.0	242.0	43.6	23.8	1.00E-3	19.3	100.0

Simulation:

Froude number: 33.1; effleunt density (sigma-T) -1.59; effleunt velocity 1.913(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	43.6	0.16	0.864	100.0	1.0	0.0	0.0	0.0;
10	43.33	0.16	1.039	82.03	1.219	-0.193	0.197	0.0687;
20	43.01	0.16	1.259	67.3	1.485	-0.415	0.433	0.165;
30	42.65	0.16	1.523	55.21	1.81	-0.671	0.717	0.301;
40	42.23	0.16	1.84	45.29	2.206	-0.964	1.06	0.49;
50	41.77	0.16	2.218	37.15	2.689	-1.292	1.469	0.749;
60	41.26	0.16	2.666	30.48	3.278	-1.651	1.948	1.093;
70	40.71	0.16	3.195	25.0	3.995	-2.034	2.502	1.541;
80	40.13	0.16	3.813	20.51	4.87	-2.435	3.137	2.113;
90	39.54	0.16	4.53	16.83	5.936	-2.851	3.861	2.834;
100	38.92	0.16	5.352	13.8	7.236	-3.275	4.686	3.732;
110	38.29	0.16	6.287	11.32	8.821	-3.706	5.628	4.843;
120	37.66	0.16	7.337	9.289	10.75	-4.141	6.709	6.212;
130	37.0	0.16	8.507	7.62	13.11	-4.582	7.962	7.9;
140	36.33	0.16	9.797	6.251	15.98	-5.03	9.434	9.993;
150	35.63	0.16	11.21	5.128	19.48	-5.489	11.19	12.61;
160	34.9	0.16	12.76	4.207	23.74	-5.963	13.32	15.91;
164	34.59	0.16	13.41	3.887	25.7	-6.159	14.3	17.46; merging;
170	33.85	0.16	14.67	3.451	28.94	-6.626	16.85	21.58;
180	32.34	0.16	17.61	2.831	35.28	-7.535	22.54	30.98;
181	32.18	0.16	17.96	2.776	35.98	-7.632	23.2	32.1; acute zone;
190	30.53	0.16	21.59	2.323	43.0	-8.571	30.25	44.03;
200	28.31	0.16	26.74	1.905	52.42	-9.743	40.68	62.03;
210	25.59	0.16	33.23	1.563	63.9	-11.05	54.63	86.53;
220	22.25	0.16	41.32	1.282	77.89	-12.49	73.04	119.3;
223	21.1	0.16	44.11	1.208	82.66	-12.94	79.59	131.1; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 44.48 m

conc (%)	dilutn	width (m)	distnce (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.20311	83.01	44.59	26.0	0.00247	0.0	0.0	0.16	3.00E-4
1.20424	82.93	44.75	28.0	0.00594	0.0	0.0	0.16	3.00E-4
1.20495	82.89	44.91	30.0	0.00941	0.0	0.0	0.16	3.00E-4
1.20543	82.85	45.07	32.0	0.0129	0.0	0.0	0.16	3.00E-4
1.20578	82.83	45.22	34.0	0.0164	0.0	0.0	0.16	3.00E-4
1.20605	82.81	45.38	36.0	0.0198	0.0	0.0	0.16	3.00E-4
1.20627	82.79	45.54	38.0	0.0233	0.0	0.0	0.16	3.00E-4
1.20645	82.78	45.69	40.0	0.0268	0.0	0.0	0.16	3.00E-4
1.2066	82.77	45.85	42.0	0.0302	0.0	0.0	0.16	3.00E-4
1.20673	82.76	46.0	44.0	0.0337	0.0	0.0	0.16	3.00E-4
1.20685	82.75	46.16	46.0	0.0372	0.0	0.0	0.16	3.00E-4
1.20695	82.75	46.31	48.0	0.0407	0.0	0.0	0.16	3.00E-4
1.20704	82.74	46.46	50.0	0.0441	0.0	0.0	0.16	3.00E-4
1.20712	82.74	46.61	52.0	0.0476	0.0	0.0	0.16	3.00E-4
1.2072	82.73	46.77	54.0	0.0511	0.0	0.0	0.16	3.00E-4
1.20726	82.73	46.92	56.0	0.0546	0.0	0.0	0.16	3.00E-4
1.20733	82.72	47.07	58.0	0.058	0.0	0.0	0.16	3.00E-4
1.20738	82.72	47.22	60.0	0.0615	0.0	0.0	0.16	3.00E-4
1.20743	82.71	47.37	62.0	0.065	0.0	0.0	0.16	3.00E-4
1.20748	82.71	47.52	64.0	0.0684	0.0	0.0	0.16	3.00E-4
1.20752	82.71	47.67	66.0	0.0719	0.0	0.0	0.16	3.00E-4
1.20756	82.71	47.82	68.0	0.0754	0.0	0.0	0.16	3.00E-4
1.2076	82.7	47.96	70.0	0.0789	0.0	0.0	0.16	3.00E-4
1.20762	82.7	48.11	72.0	0.0823	0.0	0.0	0.16	3.00E-4
1.20765	82.7	48.26	74.0	0.0858	0.0	0.0	0.16	3.00E-4

count: 25



/ UM3.

Case 53; ambient file C:\Plumes\SCTP20-31-42-53.001.db; Diffuser table record 4: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.16	90.0	0.0	10.7	0.0	0.0	0.16	90.0	0.0003	-0.3
15.0	0.16	90.0	0.0	10.7	0.0	0.0	0.16	90.0	0.0003	-0.3

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.9483	4.3	45.0	135.0	10.0	24.0	242.0	43.6	38.18	1.00E-3	19.3	100.0

Simulation:

Froude number: 42.12; effleunt density (sigma-T) -1.59; effleunt velocity 2.549(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	43.6	0.16	0.948	100.0	1.0	0.0	0.0	0.0;
10	43.29	0.16	1.141	82.03	1.219	-0.221	0.225	0.0592;
20	42.92	0.16	1.384	67.3	1.485	-0.48	0.495	0.144;
30	42.49	0.16	1.679	55.21	1.81	-0.781	0.821	0.263;
40	42.0	0.16	2.032	45.29	2.206	-1.13	1.215	0.432;
50	41.43	0.16	2.457	37.15	2.689	-1.529	1.688	0.669;
60	40.79	0.16	2.964	30.48	3.278	-1.983	2.256	0.995;
70	40.07	0.16	3.568	25.0	3.995	-2.485	2.927	1.436;
80	39.3	0.16	4.281	20.51	4.87	-3.027	3.705	2.016;
90	38.48	0.16	5.119	16.83	5.936	-3.601	4.599	2.763;
100	37.62	0.16	6.094	13.8	7.236	-4.199	5.621	3.713;
110	36.73	0.16	7.219	11.32	8.821	-4.813	6.783	4.903;
120	35.82	0.16	8.504	9.289	10.75	-5.44	8.106	6.38;
130	34.89	0.16	9.956	7.62	13.11	-6.074	9.619	8.205;
140	33.94	0.16	11.58	6.251	15.98	-6.716	11.36	10.45;
150	32.96	0.16	13.38	5.128	19.48	-7.367	13.39	13.24;
154	32.56	0.16	14.15	4.738	21.08	-7.631	14.3	14.53; merging;
160	31.58	0.16	15.66	4.207	23.74	-8.272	16.69	18.01;
170	29.63	0.16	19.25	3.451	28.94	-9.521	21.95	25.96;
171	29.41	0.16	19.68	3.384	29.52	-9.655	22.57	26.9; acute zone;
180	27.31	0.16	24.2	2.831	35.28	-10.95	29.0	37.02;
190	24.53	0.16	30.69	2.323	43.0	-12.57	38.46	52.33;
200	21.18	0.16	38.98	1.905	52.42	-14.39	51.09	73.35;
203	20.04	0.16	41.86	1.795	55.63	-14.98	55.63	81.03; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 43.80 m

conc (%)	dilutn	width (m)	distance (m)	time (hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
1.78701	55.89	43.83	18.0	7.62E-4	0.0	0.0	0.16	3.00E-4
1.78872	55.83	43.99	20.0	0.00423	0.0	0.0	0.16	3.00E-4
1.79005	55.79	44.15	22.0	0.00771	0.0	0.0	0.16	3.00E-4
1.7909	55.77	44.3	24.0	0.0112	0.0	0.0	0.16	3.00E-4
1.7915	55.75	44.46	26.0	0.0147	0.0	0.0	0.16	3.00E-4
1.79196	55.73	44.62	28.0	0.0181	0.0	0.0	0.16	3.00E-4
1.79232	55.72	44.77	30.0	0.0216	0.0	0.0	0.16	3.00E-4
1.79261	55.71	44.93	32.0	0.0251	0.0	0.0	0.16	3.00E-4
1.79286	55.71	45.08	34.0	0.0285	0.0	0.0	0.16	3.00E-4
1.79307	55.7	45.23	36.0	0.032	0.0	0.0	0.16	3.00E-4
1.79325	55.69	45.39	38.0	0.0355	0.0	0.0	0.16	3.00E-4
1.79341	55.69	45.54	40.0	0.039	0.0	0.0	0.16	3.00E-4
1.79355	55.68	45.69	42.0	0.0424	0.0	0.0	0.16	3.00E-4
1.79368	55.68	45.84	44.0	0.0459	0.0	0.0	0.16	3.00E-4
1.7938	55.68	46.0	46.0	0.0494	0.0	0.0	0.16	3.00E-4
1.7939	55.67	46.15	48.0	0.0528	0.0	0.0	0.16	3.00E-4
1.79399	55.67	46.3	50.0	0.0563	0.0	0.0	0.16	3.00E-4
1.79408	55.67	46.45	52.0	0.0598	0.0	0.0	0.16	3.00E-4
1.79416	55.67	46.6	54.0	0.0633	0.0	0.0	0.16	3.00E-4
1.79423	55.66	46.74	56.0	0.0667	0.0	0.0	0.16	3.00E-4
1.7943	55.66	46.89	58.0	0.0702	0.0	0.0	0.16	3.00E-4
1.79436	55.66	47.04	60.0	0.0737	0.0	0.0	0.16	3.00E-4
1.79441	55.66	47.19	62.0	0.0772	0.0	0.0	0.16	3.00E-4
1.79446	55.66	47.34	64.0	0.0806	0.0	0.0	0.16	3.00E-4
1.79449	55.66	47.48	66.0	0.0841	0.0	0.0	0.16	3.00E-4
1.79452	55.65	47.63	68.0	0.0876	0.0	0.0	0.16	3.00E-4
1.79453	55.65	47.77	70.0	0.091	0.0	0.0	0.16	3.00E-4
1.79454	55.65	47.92	72.0	0.0945	0.0	0.0	0.16	3.00E-4
1.79453	55.65	48.06	74.0	0.098	0.0	0.0	0.16	3.00E-4

count: 29

; 3:52:47 PM. amb fills: 2

/ UM3. 12/15/2022 3:59:25 PM

Case 21; ambient file C:\Plumes\SCTP21-32-43-54.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.59	90.0	0.0	12.4	0.0	0.0	0.59	90.0	0.0003	-0.485
16.0	0.59	90.0	0.0	12.4	0.0	0.0	0.59	90.0	0.0003	-0.485

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChronicMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.7502	4.3	45.0	135.0	10.0	16.0	24.0	242.0	46.5	13.71	1.00E-3	19.1	100.0

Simulation:

Froude number: 29.89; effleunt density (sigma-T) -1.55; effleunt velocity 1.463(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	46.5	0.59	0.75	100.0	1.0	0.0	0.0	0.0;
10	46.39	0.59	0.887	82.03	1.219	-0.0796	0.0869	0.0369;
20	46.28	0.59	1.05	67.3	1.485	-0.156	0.186	0.0805;
30	46.17	0.59	1.234	55.21	1.81	-0.232	0.302	0.133;
40	46.06	0.59	1.438	45.29	2.207	-0.307	0.439	0.196;
50	45.96	0.59	1.66	37.15	2.69	-0.382	0.603	0.274;
60	45.85	0.59	1.901	30.48	3.278	-0.459	0.803	0.369;
70	45.74	0.59	2.16	25.0	3.996	-0.537	1.05	0.489;
80	45.62	0.59	2.439	20.51	4.871	-0.62	1.365	0.643;
90	45.5	0.59	2.738	16.83	5.938	-0.708	1.771	0.844;
100	45.36	0.59	3.061	13.8	7.238	-0.804	2.302	1.109;
110	45.21	0.59	3.412	11.32	8.823	-0.908	3.003	1.461;
120	45.05	0.59	3.793	9.289	10.75	-1.022	3.934	1.93;
130	44.87	0.59	4.209	7.62	13.11	-1.147	5.174	2.559;
140	44.67	0.59	4.664	6.251	15.98	-1.285	6.829	3.4;
150	44.45	0.59	5.164	5.128	19.48	-1.436	9.038	4.526;
160	44.2	0.59	5.714	4.207	23.75	-1.602	11.99	6.032;
170	43.93	0.59	6.319	3.451	28.95	-1.783	15.92	8.044;
180	43.63	0.59	6.985	2.831	35.28	-1.982	21.15	10.73;
185	43.47	0.59	7.343	2.564	38.96	-2.088	24.37	12.38; acute zone;
190	43.29	0.59	7.719	2.323	43.01	-2.198	28.09	14.29;
200	42.92	0.59	8.529	1.905	52.43	-2.433	37.27	19.01;
210	42.5	0.59	9.422	1.563	63.91	-2.687	49.35	25.23;
220	42.02	0.59	10.41	1.282	77.91	-2.961	65.16	33.37;
230	41.49	0.59	11.49	1.052	94.97	-3.252	85.7	43.95; merging;
240	40.56	0.59	12.96	0.863	115.8	-3.712	125.4	64.42;
250	39.4	0.59	14.99	0.708	141.1	-4.223	178.9	91.99;
260	37.99	0.59	17.61	0.581	172.0	-4.765	248.0	127.6; chronic zone;
270	36.26	0.59	20.93	0.476	209.7	-5.331	336.0	173.1;
280	34.15	0.59	25.08	0.391	255.6	-5.917	447.0	230.3;
290	31.57	0.59	30.23	0.321	311.6	-6.517	585.5	301.8;
300	28.42	0.59	36.56	0.263	379.8	-7.127	757.1	390.4;
310	24.57	0.59	44.34	0.216	463.0	-7.744	968.7	499.7;
313	23.26	0.59	47.0	0.203	491.4	-7.93	1041.1	537.1; surface;

Outside chronic zone

/ UM3.

Case 32; ambient file C:\Plumes\SCTP21-32-43-54.001.db; Diffuser table record 2: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.59	90.0	0.0	12.4	0.0	0.0	0.59	90.0	0.0003	-0.485
16.0	0.59	90.0	0.0	12.4	0.0	0.0	0.59	90.0	0.0003	-0.485

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChronicMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.7725	4.3	45.0	135.0	10.0	24.0	242.0	46.5	15.36	1.00E-3	19.1	100.0

Simulation:

Froude number: 31.13; effleunt density (sigma-T) -1.55; effleunt velocity 1.545(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	46.5	0.59	0.772	100.0	1.0	0.0	0.0	0.0;
10	46.38	0.59	0.914	82.03	1.219	-0.0859	0.0934	0.0378;
20	46.26	0.59	1.084	67.3	1.485	-0.169	0.2	0.0826;
30	46.14	0.59	1.277	55.21	1.81	-0.252	0.325	0.137;
40	46.03	0.59	1.491	45.29	2.207	-0.335	0.471	0.202;
50	45.91	0.59	1.726	37.15	2.69	-0.417	0.645	0.282;
60	45.79	0.59	1.982	30.48	3.278	-0.499	0.854	0.38;
70	45.67	0.59	2.258	25.0	3.996	-0.584	1.113	0.503;
80	45.55	0.59	2.555	20.51	4.871	-0.673	1.438	0.66;
90	45.41	0.59	2.874	16.83	5.938	-0.768	1.854	0.864;
100	45.27	0.59	3.219	13.8	7.238	-0.87	2.396	1.131;
110	45.11	0.59	3.592	11.32	8.823	-0.981	3.108	1.486;
120	44.93	0.59	3.998	9.289	10.75	-1.102	4.05	1.958;
130	44.74	0.59	4.44	7.62	13.11	-1.235	5.301	2.588;
140	44.53	0.59	4.924	6.251	15.98	-1.38	6.968	3.431;
150	44.3	0.59	5.455	5.128	19.48	-1.54	9.191	4.56;
160	44.04	0.59	6.038	4.207	23.75	-1.716	12.15	6.069;
170	43.75	0.59	6.679	3.451	28.95	-1.908	16.1	8.086;
180	43.44	0.59	7.385	2.831	35.28	-2.118	21.36	10.77;
184	43.3	0.59	7.687	2.616	38.19	-2.208	23.91	12.08; acute zone;
190	43.08	0.59	8.163	2.323	43.01	-2.348	28.33	14.35;
200	42.69	0.59	9.021	1.905	52.43	-2.597	37.56	19.08;
210	42.24	0.59	9.967	1.563	63.91	-2.867	49.71	25.33;
220	41.74	0.59	11.01	1.282	77.91	-3.157	65.62	33.52;
225	41.47	0.59	11.57	1.161	86.02	-3.31	75.31	38.5; merging;
230	41.04	0.59	12.25	1.052	94.97	-3.539	91.41	46.79;
240	39.99	0.59	14.03	0.863	115.8	-4.063	134.0	68.75;
250	38.7	0.59	16.39	0.708	141.1	-4.627	190.1	97.62;
258	37.47	0.59	18.74	0.604	165.3	-5.105	246.6	126.8; chronic zone;
260	37.13	0.59	19.4	0.581	172.0	-5.228	262.6	135.0;
270	35.22	0.59	23.17	0.476	209.7	-5.857	355.2	182.8;
280	32.87	0.59	27.87	0.391	255.6	-6.508	472.0	243.0;
290	30.0	0.59	33.67	0.321	311.6	-7.176	617.9	318.3;
300	26.5	0.59	40.8	0.263	379.8	-7.855	798.7	411.7;
308	23.15	0.59	47.65	0.224	445.0	-8.404	973.4	501.8; surface;

Outside chronic zone

/ UM3.

Case 43; ambient file C:\Plumes\SCTP21-32-43-54.001.db; Diffuser table record 3: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spnd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.59	90.0	0.0	12.4	0.0	0.0	0.59	90.0	0.0003	-0.485
16.0	0.59	90.0	0.0	12.4	0.0	0.0	0.59	90.0	0.0003	-0.485

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChronicMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.8126	4.3	45.0	135.0	10.0	24.0	242.0	46.5	18.65	1.00E-3	19.1	100.0

Simulation:

Froude number: 33.3; effleunt density (sigma-T) -1.55; effleunt velocity 1.696(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	46.5	0.59	0.813	100.0	1.0	0.0	0.0	0.0;
10	46.36	0.59	0.964	82.03	1.219	-0.0977	0.105	0.0391;
20	46.23	0.59	1.146	67.3	1.485	-0.194	0.226	0.0861;
30	46.09	0.59	1.353	55.21	1.81	-0.29	0.366	0.143;
40	45.95	0.59	1.586	45.29	2.207	-0.385	0.529	0.213;
50	45.82	0.59	1.845	37.15	2.69	-0.481	0.722	0.297;
60	45.68	0.59	2.127	30.48	3.278	-0.576	0.951	0.401;
70	45.55	0.59	2.433	25.0	3.996	-0.674	1.23	0.529;
80	45.4	0.59	2.764	20.51	4.871	-0.775	1.575	0.692;
90	45.25	0.59	3.12	16.83	5.938	-0.882	2.013	0.901;
100	45.09	0.59	3.505	13.8	7.238	-0.996	2.575	1.174;
110	44.91	0.59	3.92	11.32	8.823	-1.119	3.308	1.533;
120	44.72	0.59	4.371	9.289	10.75	-1.254	4.272	2.01;
130	44.51	0.59	4.862	7.62	13.11	-1.4	5.547	2.646;
140	44.28	0.59	5.399	6.251	15.98	-1.561	7.239	3.494;
150	44.02	0.59	5.987	5.128	19.48	-1.738	9.489	4.629;
160	43.73	0.59	6.632	4.207	23.75	-1.931	12.48	6.146;
170	43.42	0.59	7.341	3.451	28.95	-2.143	16.47	8.173;
180	43.07	0.59	8.121	2.831	35.28	-2.375	21.77	10.88;
184	42.92	0.59	8.455	2.616	38.19	-2.474	24.35	12.19; acute zone;
190	42.68	0.59	8.98	2.323	43.01	-2.629	28.81	14.47;
200	42.25	0.59	9.927	1.905	52.43	-2.904	38.13	19.24;
210	41.76	0.59	10.97	1.563	63.91	-3.203	50.41	25.54;
216	41.44	0.59	11.65	1.388	71.97	-3.393	59.55	30.23; merging;
220	41.11	0.59	12.19	1.282	77.91	-3.584	69.69	35.44;
230	40.08	0.59	13.95	1.052	94.97	-4.146	104.0	53.06;
240	38.83	0.59	16.28	0.863	115.8	-4.765	150.0	76.72;
250	37.3	0.59	19.27	0.708	141.1	-5.436	210.7	108.0;
255	36.41	0.59	21.04	0.641	155.8	-5.789	247.6	127.0; chronic zone;
260	35.42	0.59	23.03	0.581	172.0	-6.152	289.6	148.6;
270	33.13	0.59	27.7	0.476	209.7	-6.904	390.5	200.6;
280	30.32	0.59	33.47	0.391	255.6	-7.683	517.9	266.3;
290	26.89	0.59	40.57	0.321	311.6	-8.482	677.1	348.5;
298	23.61	0.59	47.39	0.274	365.1	-9.132	831.8	428.3; surface;

Outside chronic zone

/ UM3.

Case 54; ambient file C:\Plumes\SCTP21-32-43-54.001.db; Diffuser table record 4: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.59	90.0	0.0	12.4	0.0	0.0	0.59	90.0	0.0003	-0.485
16.0	0.59	90.0	0.0	12.4	0.0	0.0	0.59	90.0	0.0003	-0.485

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChronicMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.9037	4.3	45.0	135.0	10.0	24.0	242.0	46.5	28.92	1.00E-3	19.1	100.0

Simulation:

Froude number: 39.59; effleunt density (sigma-T) -1.55; effleunt velocity 2.126(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	46.5	0.59	0.904	100.0	1.0	0.0	0.0	0.0;
10	46.32	0.59	1.076	82.03	1.219	-0.129	0.137	0.0412;
20	46.13	0.59	1.286	67.3	1.485	-0.259	0.294	0.0922;
30	45.94	0.59	1.529	55.21	1.81	-0.392	0.476	0.155;
40	45.75	0.59	1.806	45.29	2.207	-0.526	0.686	0.233;
50	45.56	0.59	2.12	37.15	2.69	-0.661	0.929	0.328;
60	45.37	0.59	2.469	30.48	3.278	-0.795	1.214	0.444;
70	45.18	0.59	2.853	25.0	3.996	-0.931	1.549	0.586;
80	44.99	0.59	3.272	20.51	4.871	-1.069	1.953	0.763;
90	44.78	0.59	3.727	16.83	5.938	-1.211	2.447	0.986;
100	44.57	0.59	4.218	13.8	7.238	-1.361	3.066	1.271;
110	44.34	0.59	4.749	11.32	8.823	-1.52	3.853	1.641;
120	44.1	0.59	5.324	9.289	10.75	-1.692	4.869	2.126;
130	43.83	0.59	5.949	7.62	13.11	-1.877	6.192	2.767;
140	43.54	0.59	6.629	6.251	15.98	-2.08	7.931	3.619;
150	43.22	0.59	7.371	5.128	19.48	-2.301	10.23	4.754;
160	42.87	0.59	8.184	4.207	23.75	-2.543	13.26	6.268;
170	42.48	0.59	9.075	3.451	28.95	-2.808	17.29	8.289;
180	42.05	0.59	10.05	2.831	35.28	-3.098	22.64	10.98;
182	41.95	0.59	10.26	2.721	36.71	-3.16	23.9	11.62; acute zone;
190	41.57	0.59	11.13	2.323	43.01	-3.415	29.73	14.58;
196	41.25	0.59	11.83	2.062	48.44	-3.619	35.05	17.28; merging;
200	40.93	0.59	12.38	1.905	52.43	-3.83	41.11	20.36;
210	39.9	0.59	14.21	1.563	63.91	-4.467	62.17	31.09;
220	38.65	0.59	16.64	1.282	77.91	-5.197	91.53	46.09;
230	37.13	0.59	19.77	1.052	94.97	-6.024	131.9	66.77;
240	35.27	0.59	23.69	0.863	115.8	-6.943	186.6	94.8;
248	33.49	0.59	27.51	0.736	135.6	-7.74	243.0	123.8; chronic zone;
250	33.0	0.59	28.57	0.708	141.1	-7.947	259.2	132.1;
260	30.22	0.59	34.6	0.581	172.0	-9.021	353.9	180.7;
270	26.82	0.59	42.02	0.476	209.7	-10.15	475.4	243.3;
277	24.0	0.59	48.19	0.415	240.9	-10.98	579.4	296.8; surface;

Outside chronic zone

3:59:25 PM. amb fills: 2

/ UM3. 12/15/2022 4:05:54 PM

Case 22; ambient file C:\Plumes\SCTP22-33-44-55.001.db; Diffuser table record 1: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.32	90.0	0.0	12.4	0.0	0.0	0.32	90.0	0.0003	-0.485
15.0	0.32	90.0	0.0	12.4	0.0	0.0	0.32	90.0	0.0003	-0.485

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	Spacing	AcuteMZ	ChronicMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.7423	4.3	45.0	135.0	10.0	16.0	24.0	242.0	43.4	13.15	1.00E-3	19.1	100.0

Simulation:

Froude number: 29.44; effleunt density (sigma-T) -1.55; effleunt velocity 1.433(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	43.4	0.32	0.742	100.0	1.0	0.0	0.0	0.0;
10	43.23	0.32	0.886	82.03	1.219	-0.122	0.128	0.0577;
20	43.05	0.32	1.063	67.3	1.485	-0.248	0.275	0.131;
30	42.86	0.32	1.27	55.21	1.81	-0.38	0.446	0.224;
40	42.67	0.32	1.51	45.29	2.207	-0.515	0.643	0.341;
50	42.48	0.32	1.786	37.15	2.69	-0.652	0.869	0.484;
60	42.28	0.32	2.097	30.48	3.278	-0.79	1.13	0.66;
70	42.08	0.32	2.445	25.0	3.996	-0.928	1.433	0.876;
80	41.88	0.32	2.83	20.51	4.871	-1.067	1.788	1.141;
90	41.68	0.32	3.251	16.83	5.938	-1.209	2.212	1.47;
100	41.47	0.32	3.71	13.8	7.238	-1.356	2.727	1.883;
110	41.25	0.32	4.207	11.32	8.823	-1.509	3.365	2.41;
120	41.02	0.32	4.746	9.289	10.75	-1.671	4.169	3.09;
130	40.76	0.32	5.33	7.62	13.11	-1.844	5.196	3.977;
140	40.49	0.32	5.964	6.251	15.98	-2.03	6.522	5.142;
150	40.19	0.32	6.655	5.128	19.48	-2.232	8.249	6.681;
160	39.86	0.32	7.409	4.207	23.75	-2.452	10.51	8.717;
170	39.5	0.32	8.233	3.451	28.95	-2.69	13.47	11.41;
180	39.09	0.32	9.137	2.831	35.28	-2.949	17.36	14.98;
190	38.64	0.32	10.13	2.323	43.01	-3.229	22.45	19.69;
193	38.5	0.32	10.45	2.189	45.64	-3.317	24.27	21.37; acute zone;
200	38.14	0.32	11.22	1.905	52.43	-3.531	29.11	25.87;
205	37.86	0.32	11.81	1.726	57.89	-3.69	33.17	29.65; merging;
210	37.43	0.32	12.51	1.563	63.91	-3.932	39.94	35.97;
220	36.36	0.32	14.39	1.282	77.91	-4.489	58.05	52.93;
230	35.06	0.32	16.89	1.052	94.97	-5.099	82.17	75.58;
240	33.46	0.32	20.09	0.863	115.8	-5.758	113.8	105.4;
250	31.5	0.32	24.11	0.708	141.1	-6.459	154.8	144.0;
260	29.09	0.32	29.1	0.581	172.0	-7.192	206.8	193.2;
266	27.39	0.32	32.64	0.516	193.7	-7.644	244.4	228.7; chronic zone;
270	26.13	0.32	35.26	0.476	209.7	-7.949	272.4	255.2;
280	22.51	0.32	42.84	0.391	255.6	-8.725	354.0	332.6;
282	21.69	0.32	44.55	0.376	265.9	-8.882	372.6	350.2; surface;

Outside chronic zone

/ UM3.

Case 33; ambient file C:\Plumes\SCTP22-33-44-55.001.db; Diffuser table record 2: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.32	90.0	0.0	12.4	0.0	0.0	0.32	90.0	0.0003	-0.485
15.0	0.32	90.0	0.0	12.4	0.0	0.0	0.32	90.0	0.0003	-0.485

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.7642	4.3	45.0	135.0	10.0	24.0	242.0	43.4	14.73	1.00E-3	19.1	100.0

Simulation:

Froude number: 30.67; effleunt density (sigma-T) -1.55; effleunt velocity 1.514(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	43.4	0.32	0.764	100.0	1.0	0.0	0.0	0.0;
10	43.22	0.32	0.913	82.03	1.219	-0.129	0.135	0.058;
20	43.03	0.32	1.096	67.3	1.485	-0.265	0.292	0.132;
30	42.82	0.32	1.311	55.21	1.81	-0.406	0.473	0.227;
40	42.62	0.32	1.561	45.29	2.207	-0.552	0.682	0.346;
50	42.41	0.32	1.849	37.15	2.69	-0.701	0.923	0.494;
60	42.19	0.32	2.175	30.48	3.278	-0.851	1.2	0.675;
70	41.98	0.32	2.542	25.0	3.996	-1.001	1.519	0.897;
80	41.76	0.32	2.949	20.51	4.871	-1.153	1.893	1.169;
90	41.54	0.32	3.395	16.83	5.938	-1.307	2.336	1.507;
100	41.32	0.32	3.882	13.8	7.238	-1.465	2.871	1.929;
110	41.08	0.32	4.411	11.32	8.823	-1.629	3.529	2.466;
120	40.83	0.32	4.984	9.289	10.75	-1.803	4.353	3.155;
130	40.56	0.32	5.606	7.62	13.11	-1.988	5.401	4.051;
140	40.27	0.32	6.281	6.251	15.98	-2.187	6.749	5.226;
150	39.95	0.32	7.015	5.128	19.48	-2.402	8.498	6.774;
160	39.6	0.32	7.816	4.207	23.75	-2.635	10.78	8.821;
170	39.21	0.32	8.691	3.451	28.95	-2.888	13.77	11.53;
180	38.79	0.32	9.65	2.831	35.28	-3.163	17.69	15.11;
190	38.31	0.32	10.7	2.323	43.01	-3.46	22.83	19.84;
192	38.21	0.32	10.92	2.232	44.75	-3.522	24.03	20.95; acute zone;
200	37.78	0.32	11.86	1.905	52.43	-3.781	29.54	26.06; merging;
210	36.84	0.32	13.45	1.563	63.91	-4.314	43.11	38.69;
220	35.66	0.32	15.66	1.282	77.91	-4.927	62.02	56.36;
230	34.22	0.32	18.53	1.052	94.97	-5.602	87.3	80.07;
240	32.45	0.32	22.17	0.863	115.8	-6.333	120.5	111.3;
250	30.27	0.32	26.72	0.708	141.1	-7.11	163.5	151.9;
260	27.6	0.32	32.36	0.581	172.0	-7.924	218.3	203.6;
264	26.37	0.32	34.96	0.536	186.2	-8.258	244.0	227.9; chronic zone;
270	24.32	0.32	39.3	0.476	209.7	-8.766	287.3	268.8;
276	22.01	0.32	44.2	0.423	236.1	-9.282	336.6	315.5; surface;

Outside chronic zone

/ UM3.

Case 44; ambient file C:\Plumes\SCTP22-33-44-55.001.db; Diffuser table record 3: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.32	90.0	0.0	12.4	0.0	0.0	0.32	90.0	0.0003	-0.485
15.0	0.32	90.0	0.0	12.4	0.0	0.0	0.32	90.0	0.0003	-0.485

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.8038	4.3	45.0	135.0	10.0	24.0	242.0	43.4	17.88	1.00E-3	19.1	100.0

Simulation:

Froude number: 32.81; effleunt density (sigma-T) -1.55; effleunt velocity 1.662(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	43.4	0.32	0.804	100.0	1.0	0.0	0.0	0.0;
10	43.2	0.32	0.961	82.03	1.219	-0.142	0.149	0.0583;
20	42.98	0.32	1.155	67.3	1.485	-0.294	0.321	0.134;
30	42.76	0.32	1.385	55.21	1.81	-0.454	0.522	0.232;
40	42.52	0.32	1.652	45.29	2.207	-0.62	0.754	0.355;
50	42.28	0.32	1.962	37.15	2.69	-0.79	1.02	0.509;
60	42.04	0.32	2.316	30.48	3.278	-0.962	1.326	0.699;
70	41.79	0.32	2.715	25.0	3.996	-1.136	1.677	0.932;
80	41.54	0.32	3.161	20.51	4.871	-1.311	2.086	1.219;
90	41.29	0.32	3.653	16.83	5.938	-1.488	2.565	1.572;
100	41.03	0.32	4.192	13.8	7.238	-1.668	3.138	2.012;
110	40.76	0.32	4.779	11.32	8.823	-1.855	3.835	2.567;
120	40.48	0.32	5.416	9.289	10.75	-2.051	4.699	3.275;
130	40.18	0.32	6.107	7.62	13.11	-2.258	5.788	4.191;
140	39.85	0.32	6.857	6.251	15.98	-2.48	7.178	5.385;
150	39.5	0.32	7.672	5.128	19.48	-2.719	8.972	6.954;
160	39.11	0.32	8.56	4.207	23.75	-2.978	11.3	9.024;
170	38.69	0.32	9.53	3.451	28.95	-3.258	14.35	11.76;
180	38.22	0.32	10.59	2.831	35.28	-3.563	18.34	15.38;
190	37.69	0.32	11.75	2.323	43.01	-3.892	23.55	20.16;
191	37.64	0.32	11.88	2.277	43.87	-3.927	24.16	20.71; acute zone;
192	37.58	0.32	12.0	2.232	44.75	-3.961	24.78	21.28; merging;
200	36.84	0.32	13.26	1.905	52.43	-4.405	33.46	29.29;
210	35.7	0.32	15.42	1.563	63.91	-5.052	48.49	43.23;
220	34.3	0.32	18.26	1.282	77.91	-5.778	68.97	62.31;
230	32.59	0.32	21.86	1.052	94.97	-6.581	96.42	87.99;
240	30.48	0.32	26.38	0.863	115.8	-7.451	132.6	121.9;
250	27.88	0.32	31.98	0.708	141.1	-8.378	179.4	166.0;
260	24.7	0.32	38.88	0.581	172.0	-9.35	239.1	222.3;
261	24.35	0.32	39.65	0.569	175.5	-9.449	245.9	228.7; chronic zone;
267	22.05	0.32	44.62	0.506	197.6	-10.05	290.0	270.3; surface;

Outside chronic zone



/ UM3.

Case 55; ambient file C:\Plumes\SCTP22-33-44-55.001.db; Diffuser table record 4: -----

Ambient Table:

Depth	Amb-cur	Amb-dir	Amb-sal	Amb-tem	Amb-pol	Decay	Far-spd	Far-dir	Disprsn	Density
m	m/s	deg	psu	C	kg/kg	s-1	m/s	deg	m0.67/s2	sigma-T
0.0	0.32	90.0	0.0	12.4	0.0	0.0	0.32	90.0	0.0003	-0.485
15.0	0.32	90.0	0.0	12.4	0.0	0.0	0.32	90.0	0.0003	-0.485

Diffuser table:

P-dia	P-elev	V-angle	H-angle	Ports	AcuteMZ	ChrcnMZ	P-depth	Ttl-flo	Eff-sal	Temp	Polutnt
(ft)	(ft)	(deg)	(deg)	( )	(ft)	(ft)	(ft)	(MGD)	(psu)	(C)	(%)
0.9056	4.3	45.0	135.0	10.0	24.0	242.0	43.4	29.21	1.00E-3	19.1	100.0

Simulation:

Froude number: 39.78; effleunt density (sigma-T) -1.55; effleunt velocity 2.139(m/s);

Step	Depth	Amb-cur	P-dia	Polutnt	Dilutn	x-posn	y-posn	Time
	(ft)	(m/s)	(ft)	(%)	( )	(ft)	(ft)	(s)
0	43.4	0.32	0.906	100.0	1.0	0.0	0.0	0.0;
10	43.15	0.32	1.085	82.03	1.219	-0.176	0.183	0.0562;
20	42.87	0.32	1.309	67.3	1.485	-0.372	0.4	0.132;
30	42.57	0.32	1.575	55.21	1.81	-0.585	0.655	0.233;
40	42.25	0.32	1.888	45.29	2.207	-0.812	0.952	0.364;
50	41.91	0.32	2.256	37.15	2.69	-1.05	1.294	0.531;
60	41.57	0.32	2.682	30.48	3.278	-1.295	1.685	0.741;
70	41.21	0.32	3.171	25.0	3.996	-1.544	2.134	1.002;
80	40.85	0.32	3.725	20.51	4.871	-1.796	2.648	1.323;
90	40.49	0.32	4.347	16.83	5.938	-2.051	3.241	1.718;
100	40.12	0.32	5.038	13.8	7.238	-2.308	3.933	2.205;
110	39.74	0.32	5.797	11.32	8.823	-2.571	4.752	2.811;
120	39.36	0.32	6.627	9.289	10.75	-2.841	5.739	3.57;
130	38.95	0.32	7.53	7.62	13.11	-3.122	6.95	4.536;
140	38.52	0.32	8.51	6.251	15.98	-3.419	8.462	5.778;
150	38.05	0.32	9.574	5.128	19.48	-3.736	10.38	7.392;
160	37.55	0.32	10.73	4.207	23.75	-4.075	12.83	9.503;
170	37.0	0.32	11.99	3.451	28.95	-4.442	16.0	12.28;
174	36.77	0.32	12.53	3.188	31.33	-4.597	17.52	13.62; merging;
180	36.19	0.32	13.55	2.831	35.28	-4.971	21.57	17.23;
183	35.86	0.32	14.17	2.668	37.44	-5.183	24.05	19.45; acute zone;
190	35.02	0.32	15.87	2.323	43.01	-5.717	30.91	25.63;
200	33.59	0.32	18.95	1.905	52.43	-6.582	44.0	37.52;
210	31.84	0.32	22.9	1.563	63.91	-7.577	62.19	54.18;
220	29.69	0.32	27.85	1.282	77.91	-8.703	87.1	77.15;
230	27.05	0.32	34.0	1.052	94.97	-9.953	120.6	108.2;
240	23.82	0.32	41.58	0.863	115.8	-11.31	164.9	149.5;
244	22.33	0.32	45.08	0.797	125.3	-11.89	186.1	169.3; surface;

Const Eddy Diffusivity. Farfield dispersion based on wastefield width of 44.78 m

conc	dilutn	width	distnce	time				
(%)		(m)	(m)	(hrs)	(kg/kg)	(s-1)	(m/s)	(m0.67/s2)
0.79347	125.9	44.82	58.0	0.00101	0.0	0.0	0.32	3.00E-4
0.79385	125.8	44.9	60.0	0.00274	0.0	0.0	0.32	3.00E-4
0.79425	125.8	44.98	62.0	0.00448	0.0	0.0	0.32	3.00E-4
0.79457	125.7	45.06	64.0	0.00621	0.0	0.0	0.32	3.00E-4
0.79482	125.7	45.14	66.0	0.00795	0.0	0.0	0.32	3.00E-4
0.79502	125.7	45.22	68.0	0.00969	0.0	0.0	0.32	3.00E-4
0.79518	125.6	45.3	70.0	0.0114	0.0	0.0	0.32	3.00E-4
0.79533	125.6	45.38	72.0	0.0132	0.0	0.0	0.32	3.00E-4
0.79545	125.6	45.46	74.0	0.0149	0.0	0.0	0.32	3.00E-4

count: 9

; 4:05:54 PM. amb fills: 2



**Appendix F**  
**RPA Sheets for Water Quality Evaluation**



## Dilution Factor Calculations and Receiving Water Critical Conditions

### Step 1: Enter Waterbody Type

Water Body Type	Freshwater
-----------------	------------

Facility Name	Salmon Creek (Phase 5)
Receiving Water	Columbia River

### Step 2: Enter Dilution Factors -OR- Calculate DFs by entering Facility/Receiving Water Flow Data

Do you want to enter dilution factors -or- flow data?	Dilution Factors
---	------------------


	Max Dilution Factor Allowed
<u>Aquatic Life - Acute</u>	27.0
<u>Aquatic Life - Chronic</u>	149.0
<u>HH-Non-Carcinogen</u>	192.0
<u>HH-Carcinogen</u>	169.0
<u>Whole river at 7Q10</u>	

### Step 3: Enter Critical Data

	Effluent	Receiving Water
Temp, °C	23.1	22.7
pH, s.u.	7.00	8.2
Alkalinity, mg/L as CaCO3	105	59.8
Hardness, mg/L CaCO3	92.6	73
Salinity, psu		33
Receiving water TSS, mg/L (leave blank if unknown) If TSS is annual data, enter 'A'; if from critical period, enter 'S'; If no TSS, leave blank		

### Step 4: Specify if using 'Mixed' values for hardness, temperature, and pH

	Use 'Mixed Hardness' (Y/N)	Use 'Mixed Max Temp' (Y/N)	Use 'Mixed pH (Y/N)
	Y	Y	Y
Acute Zone Boundary	73.7	22.7	7.9
Chronic Zone Boundary	73.1	22.7	8.1
Whole river at 7Q10			

## Reasonable Potential Calculation

<b>Facility</b>	Salmon Creek (Phase 5)
<b>Water Body Type</b>	Freshwater
<b>Rec. Water Hardness</b>	Acute=73.7, Chronic=73.1 mg/L

<b>Dilution Factors:</b>		Acute	Chronic
Aquatic Life		23.0	132.0
Human Health Carcinogenic			169.0
Human Health Non-Carcinogenic			192.0

Pollutant, CAS No. & NPDES Application Ref. No.		AMMONIA, Criteria as Total NH3	ANTIMONY (INORGANIC) 7440360 1M	ARSENIC (dissolved) 7440382 2M	CADMIUM - 7440439 4M Hardness dependent	CHROMIUM(TRI) - 16065831 5M Hardness dependent	COPPER - 744058 6M Hardness dependent	LEAD - 7439921 7M Dependent on hardness	MERCURY 7439976 8M	NICKEL - 7440020 9M - Dependent on hardness	SELENIUM 7782492 10M	SILVER - 7740224 11M dependent on hardness.	
		<b>Effluent Data</b>	# of Samples (n)	350	22	22	22	22	22	22	15	22	22
	Coeff of Variation (Cv)	0.84	0.28	0.6	3E-16	0.36	0.83	0.53	0.6	0.45	0.37	0.81	
	Effluent Concentration, ug/L (Max. or 95th Percentile)	9,300		1.72	0.5	1	53.4	0.2579	0.0035	2.28	0.6425	0.1	
	Calculated 50th percentile Effluent Conc. (when n>10)		0.5				13		0.0019	1.29	0.5		
<b>Receiving Water Data</b>	90th Percentile Conc., ug/L	20		1.24	0.1	0	0.8	0.13	0.0068	0.83	0.5	0.01	
	Geo Mean, ug/L		0.1			0	0.8		0.0068	0.83	0.5		
<b>Water Quality Criteria</b>	Aquatic Life Criteria, Acute ug/L	3,825	-	360	2.6607	427.51	12.7684	46.2715	2.1	1093.7	20	2.0423	
		Chronic	491	-	190	0.8181	137.763	8.68775	1.78717	0.012	120.63	5	-
	WQ Criteria for Protection of Human Health, ug/L	-	6	-	-	-	1300	-	0.14	80	60	-	
	Metal Criteria Acute Translator, decimal	-	-	1	0.943	0.316	0.996	0.466	0.85	0.998	-	0.85	
		Chronic	-	-	1	0.943	0.86	0.996	0.466	-	0.997	-	-
	Carcinogen?	N	N	Y	N	N	N	N	N	N	N	N	

### Aquatic Life Reasonable Potential

Effluent percentile value		0.990	0.990	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950
s	$s^2 = \ln(CV^2 + 1)$	0.731	0.555	0.000	0.349	0.724	0.498	0.555	0.429	0.358	0.710
Pn	$Pn = (1 - \text{confidence level})^{1/n}$	0.987	0.811	0.873	0.873	0.873	0.873	0.819	0.873	0.873	0.867
Multiplier		1.00	1.00	1.00	1.00	1.00	1.00	1.50	1.00	1.00	1.00
Max concentration (ug/L) at edge of...	Acute	423	1.261	0.116	0.014	3.078	0.130	0.007	0.893	0.506	0.013
	Chronic	90	1.244	0.103	0.007	1.197	0.130	0.007	0.841	0.501	0.011
<b>Reasonable Potential? Limit Required?</b>		<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>

### Aquatic Life Limit Calculation

# of Compliance Samples Expected per month		
LTA Coeff. Var. (CV), decimal		
Permit Limit Coeff. Var. (CV), decimal		
Waste Load Allocations, ug/L	Acute	
	Chronic	
Long Term Averages, ug/L	Acute	
	Chronic	
Limiting LTA, ug/L		
Metal Translator or 1?		
Average Monthly Limit (AML), ug/L		
Maximum Daily Limit (MDL), ug/L		

### Human Health Reasonable Potential

s	$s^2 = \ln(CV^2 + 1)$	0.2747		0.72393	0.5545	0.4294	0.3582
Pn	$Pn = (1 - \text{confidence level})^{1/n}$	0.811		0.873	0.819	0.873	0.873
Multiplier		0.7848		0.43836	0.6033	0.6131	0.6649
Dilution Factor		192		192	192	192	192
Max Conc. at edge of Chronic Zone, ug/L		0.1021		8.6E-01	0.0068	0.8324	0.5
<b>Reasonable Potential? Limit Required?</b>		<b>NO</b>		<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>

### Human Health Limit Calculation

# of Compliance Samples Expected per month	
Average Monthly Effluent Limit, ug/L	
Maximum Daily Effluent Limit, ug/L	

#### Comments/Notes:

#### References:

WAC 173-201A,

Technical Support Document for Water Quality-based Toxics Control, US EPA, March 1991, EPA/505/2-90-001, pages 56/99

Reasonable Potential Calculation - Page 2

Facility	Salmon Creek (Phase 5)
Water Body Type	Freshwater
Rec. Water Hardness	Acute=73.7, Chronic=73.1 mg/L

Dilution Factors:		Acute	Chronic
Aquatic Life		27.0	149.0
Human Health Carcinogenic			169.0
Human Health Non-Carcinogenic			192.0

Pollutant, CAS No. & NPDES Application Ref. No.		THALLIUM 7440280 12M	ZINC- 7440666 13M hardness dependent	CYANIDE 57125 14M	BIS(2-ETHYLHEXYL) PHTHALATE 117917 13B							
		<b>Effluent Data</b>	# of Samples (n)	21	22	6	8					
	Coeff of Variation (Cv)	0.6	0.2	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
	Effluent Concentration, ug/L (Max. or 95th Percentile)		57.5	6.6	3.94							
	Calculated 50th percentile Effluent Conc. (when n>10)	0.1	42.6									
<b>Receiving Water Data</b>	90th Percentile Conc., ug/L		4.5	0								
	Geo Mean, ug/L	0.01	4.5	0	0							
<b>Water Quality Criteria</b>	Aquatic Life Criteria, Acute ug/L	-	88.398	22	-							
	Chronic ug/L	-	80.169	5.2	-							
	WQ Criteria for Protection of Human Health, ug/L	1.7	1000	9	0.045							
	Metal Criteria Acute	-	0.996	-	-							
	Translator, decimal Chronic	-	0.996	-	-							
	Carcinogen?	N	N	N	Y							

**Aquatic Life Reasonable Potential**

Effluent percentile value		0.950	0.950
s	$s^2 = \ln(CV^2 + 1)$	0.198	0.555
Pn	$Pn = (1 - \text{confidence level})^{1/n}$	0.873	0.607
Multiplier		1.00	2.14
Max concentration (ug/L) at edge of...	Acute	6.794	0.615
	Chronic	4.900	0.107
<b>Reasonable Potential? Limit Required?</b>		<b>NO</b>	<b>NO</b>

**Aquatic Life Limit Calculation**

# of Compliance Samples Expected per month	
LTA Coeff. Var. (CV), decimal	
Permit Limit Coeff. Var. (CV), decimal	
Waste Load Allocations, ug/L	Acute
	Chronic
Long Term Averages, ug/L	Acute
	Chronic
Limiting LTA, ug/L	
Metal Translator or 1?	
Average Monthly Limit (AML), ug/L	
Maximum Daily Limit (MDL), ug/L	

**Human Health Reasonable Potential**

s	$s^2 = \ln(CV^2 + 1)$	0.5545	0.198	0.55451	0.5545
Pn	$Pn = (1 - \text{confidence level})^{1/n}$	0.867	0.873	0.607	0.688
Multiplier		0.5396	0.798	0.86028	0.7624
Dilution Factor		192	192	192	169
Max Conc. at edge of Chronic Zone, ug/L		0.0105	4.6984	0.02957	0.0178
<b>Reasonable Potential? Limit Required?</b>		<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>

**Human Health Limit Calculation**

# of Compliance Samples Expected per month	
Average Monthly Effluent Limit, ug/L	
Maximum Daily Effluent Limit, ug/L	

**Comments/Notes:**

**References:**

WAC 173-201A,

Technical Support Document for Water Quality-based Toxics Control, US EPA, March 1991, EPA/505/2-90-001, pages 56/99

**Reasonable Potential Calculation - Page 3**

<b>Facility</b>	Salmon Creek (Phase 5)
<b>Water Body Type</b>	Freshwater
<b>Rec. Water Hardness</b>	Acute=73.7, Chronic=73.1 mg/L

<b>Dilution Factors:</b>		<b>Acute</b>	<b>Chronic</b>
Aquatic Life		27.0	149.0
Human Health Carcinogenic			169.0
Human Health Non-Carcinogenic			192.0

<b>Pollutant, CAS No. &amp; NPDES Application Ref. No.</b>												
	<b>Effluent Data</b>	# of Samples (n)										
		Coeff of Variation (Cv)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
		Effluent Concentration, ug/L (Max. or 95th Percentile)										
		Calculated 50th percentile Effluent Conc. (when n>10)										
<b>Receiving Water Data</b>	90th Percentile Conc., ug/L											
	Geo Mean, ug/L											
<b>Water Quality Criteria</b>	Aquatic Life Criteria, Acute ug/L											
		Chronic										
	WQ Criteria for Protection of Human Health, ug/L											
	Metal Criteria Acute Translator, decimal											
		Chronic										
	Carcinogen?											

**Aquatic Life Reasonable Potential**

Effluent percentile value	
s	$s^2 = \ln(CV^2 + 1)$
Pn	$Pn = (1 - \text{confidence level})^{1/n}$
Multiplier	
Max concentration (ug/L) at edge of...	Acute
	Chronic
<b>Reasonable Potential? Limit Required?</b>	

**Aquatic Life Limit Calculation**

# of Compliance Samples Expected per month	
LTA Coeff. Var. (CV), decimal	
Permit Limit Coeff. Var. (CV), decimal	
Waste Load Allocations, ug/L	Acute
	Chronic
Long Term Averages, ug/L	Acute
	Chronic
Limiting LTA, ug/L	
Metal Translator or 1?	
Average Monthly Limit (AML), ug/L	
Maximum Daily Limit (MDL), ug/L	

**Human Health Reasonable Potential**

s	$s^2 = \ln(CV^2 + 1)$
Pn	$Pn = (1 - \text{confidence level})^{1/n}$
Multiplier	
Dilution Factor	
Max Conc. at edge of Chronic Zone, ug/L	
<b>Reasonable Potential? Limit Required?</b>	

**Human Health Limit Calculation**

# of Compliance Samples Expected per month	
Average Monthly Effluent Limit, ug/L	
Maximum Daily Effluent Limit, ug/L	

**Comments/Notes:**

**References:** WAC 173-201A,

Technical Support Document for Water Quality-based Toxics Control, US EPA, March 1991, EPA/505/2-90-001, pages 56/99



## Freshwater Un-ionized Ammonia Criteria Calculation

Based on Chapter 173-201A WAC, amended November 20, 2006

		mixed @ Acute Boundary	mixed @ Chronic Boundary	mixed @ Whole River
<b>INPUT</b>				
1. Receiving Water Temperature (deg C):	22.7	22.7	22.7	#VALUE!
2. Receiving Water pH:	8.2	7.9	8.1	#VALUE!
3. Is salmonid habitat an existing or designated use?	Yes	Yes	Yes	Yes
4. Are non-salmonid early life stages present or absent?	Present	Present	Present	Present
<b>OUTPUT</b>				
Using mixed temp and pH at mixing zone boundaries?	no			
Ratio	13.500	13.500	13.500	#VALUE!
FT	1.400	1.400	1.400	#VALUE!
FPH	1.000	1.045	1.000	#VALUE!
pKa	9.318	9.317	9.317	#VALUE!
Unionized Fraction	0.071	0.038	0.061	#VALUE!
Unionized ammonia NH <sub>3</sub> criteria (mg/L as NH <sub>3</sub> )				
Acute:	0.330	0.305	0.000	#VALUE!
Chronic:	0.042	0.040	0.042	#VALUE!
<b>RESULTS</b>				
<b>Total ammonia nitrogen criteria (mg/L as N):</b>				
Acute:	3.825	6.599		#VALUE!
Chronic:	0.491		0.570	#VALUE!

Data source:

## Calculation of pH of a Mixture of Two Flows

Based on the procedure in EPA's DESCON program (EPA, 1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington D.C.)

INPUT			
	@ Acute Boundary	@ Chronic Boundary	@ Whole River
1. Dilution Factor at Mixing Zone Boundary	27.0	149.0	
2. Ambient/Upstream/Background Conditions			
Temperature (deg C):	22.70	22.70	22.70
pH:	8.20	8.20	8.20
Alkalinity (mg CaCO3/L):	59.80	59.80	59.80
3. Effluent Characteristics			
Temperature (deg C):	23.10	23.10	23.10
pH:	7.00	7.00	7.00
Alkalinity (mg CaCO3/L):	105.00	105.00	105.00
OUTPUT			
1. Ionization Constants			
Upstream/Background pKa:	6.36	6.36	6.36
Effluent pKa:	6.36	6.36	6.36
2. Ionization Fractions			
Upstream/Background Ionization Fraction:	0.99	0.99	0.99
Effluent Ionization Fraction:	0.81	0.81	0.81
3. Total Inorganic Carbon			
Upstream/Background Total Inorganic Carbon (mg CaCO3/L):	61	61	61
Effluent Total Inorganic Carbon (mg CaCO3/L):	129	129	129
4. Conditions at Mixing Zone Boundary			
Temperature (deg C):	22.71	22.70	#VALUE!
Alkalinity (mg CaCO3/L):	61.47	60.10	#VALUE!
Total Inorganic Carbon (mg CaCO3/L):	63.21	61.13	#VALUE!
pKa:	6.36	6.36	#VALUE!
RESULTS			
<b>pH at Mixing Zone Boundary:</b>	<b>7.91</b>	<b>8.13</b>	<b>#VALUE!</b>