State of Oregon
Department of
Environmental
Quality

National Pollutant Discharge Elimination System
Permit Fact Sheet
Netarts-Oceanside Sanitary District

Final: February 19, 2025

Permittee	Netarts-Oceanside Sanitary District Netarts-Oceanside STP 1755 Cape Meares Loop Rd W Tillamook, OR 97141
Existing Permit Information	File Number: 60420 Permit Number: 101783 EPA Reference Number: OR0029882 Category: Domestic Class: Minor Expiration Date: February 28, 2025
Permittee Contact	Daniel Mello District Superintendent 503-842-8231 1755 Cape Meares Loop Rd W Tillamook, OR 97141
Receiving Water Information	Receiving stream/NHD name: Pacific Ocean NHD Reach Code & % along reach: 17100203051700 & 33.17% USGS 12-digit HUC: 171002031000 OWRD Administrative Basin: North Coast ODEQ LLID & River Mile: 1240637462558 & 64.25 Assessment Unit ID: OR_OC_1710020310_01_107239
Proposed Action	Permit Renewal Application Number: 948081 Date Application Received: July 16, 2024
Permit Writer	Megan Poskaitis 503-847-6597 Date Prepared: December 19, 2024

NPDES Permit Fact Sheet
Netarts-Oceanside Sanitary District

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1. Introduction

As required by Oregon Administrative Rule 340-045-0035, this fact sheet describes the basis and methodology used in developing the permit. The permit is divided into several sections:

Schedule A – Waste discharge limitations
Schedule B – Minimum monitoring and report requirements
Schedule C – Compliance conditions and schedules
Schedule D – Special conditions
Schedule E – Pretreatment conditions
Schedule F – General conditions

Below is a summary of the major changes to the permit:

- New Inflow Removal Program Schedule D condition
- Requirement to submit a level 1 Mixing Zone study for both Outfall 001 and 002.

2. Facility Description

2.1 Wastewater Facility

The Netarts-Oceanside Sanitary District (NOSD) has been operating a new treatment facility located at 1755 Cape Meares Loop Rd W, Tillamook, OR since November 2012. The original wastewater treatment plant site was decommissioned and now serves as the new main pump station site. The treatment plant is an activated sludge three cell sequencing batch reactor (SBR) system. After treatment, the NOSD discharges treated domestic effluent year-round in the Pacific Ocean, approximately 2,600 feet offshore. The NOSD collects and treats wastewater from the communities of Netarts and Oceanside; NOSD treats only domestic sewage, as no industrial users currently discharge to the system. The community it serves is mostly vacation homes. As a result, flows and loadings can have significant weekly and seasonal variations.

At the head of the facility, wastewater influent is sampled and flows through fine and bar screens, a grit remover, and a 9” flume, which measures influent flow. Influent then flows through a splitter box, which regulates flow into the three SBR basins as needed. After a four-hour treatment process, the wastewater is sent to an equalization basin. At the equalization basin, waste sludge is conveyed to two onsite facultative sludge storage lagoons, while effluent flow is conveyed to an ultraviolet radiation chamber for disinfection. After disinfection, effluent flow is sampled before flowing through a V notch weir, where the flow is measured before it is ultimately conveyed to the outfall in the Pacific Ocean.

Effluent is primarily discharged from Outfall 001. NOSD uses a second outfall, Outfall 002, when Outfall 001 is undergoing maintenance work, approximately once per year. The facility does not land apply biosolids and at this time and is only utilizing one of its two onsite facultative sludge storage lagoons. The treatment plant, main pump station, and outfall locations are shown in Figure 2-1 and the treatment plant process schematic is shown in Figure 2-2.

Figure 2-1: Facility, Main Pump Station, and Outfall Locations

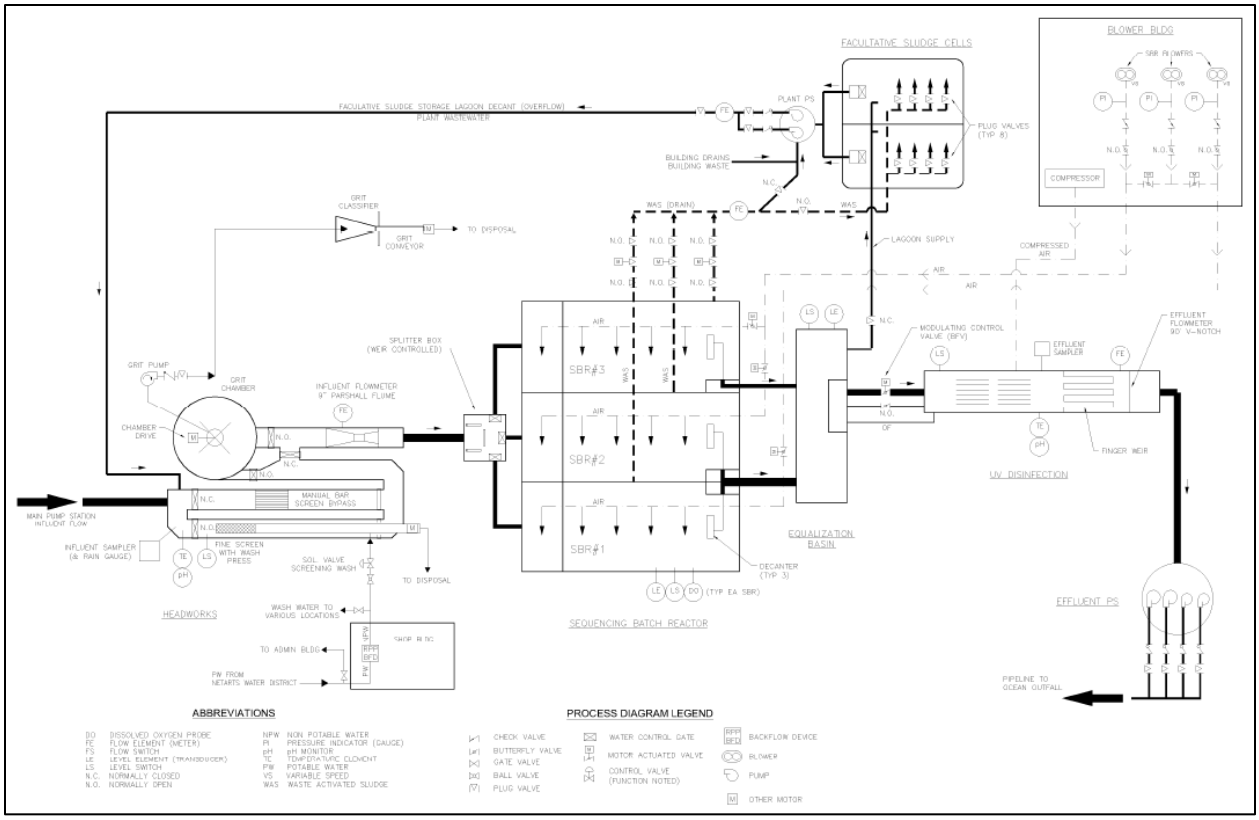

Figure 2-2: Facility Process Schematic

Table 2-1: List of Outfalls

Outfall Number	Type of Waste	Lat/Long
001	Treated Wastewater	45.456834, -123.98095 (WGS84)
002	Treated Wastewater	45.457821, -123.977314 (WGS84)
Note: Outfall 002 is only used when Outfall 001 is undergoing maintenance work, approximately once per year.		

2.2 Stormwater

Stormwater is not addressed in this permit. A 1200-Z Industrial Stormwater permit not required for facilities with a design flow of less than 1 MGD.

2.3 Industrial Pretreatment

The permittee does not have a DEQ-approved industrial pretreatment program. Based on current information, no industrial pretreatment program is needed. Schedule D of the proposed permit requires the permittee to perform an industrial user survey.

2.4 Wastewater Classification

OAR 340-049 requires all permitted municipal wastewater collection and treatment facilities receive a classification based on the size and complexity of the systems. DEQ evaluated the classifications for the treatment and collection system, which are publicly available at: https://www.deq.state.or.us/wq/opcert/Docs/OpcertReport.pdf.

3. Schedule A: Effluent Limit Development

Effluent limits serve as the primary mechanism in NPDES permits for controlling discharges of pollutants to receiving waters. Effluent limitations can be based on either the technology available to control the pollutants or limits that are protecting the water quality standards for the receiving water. DEQ refers to these two types of permit limits as technology-based effluent limitations (TBELs) and water quality-based effluent limits (WQBELs) respectively. When a TBEL is not restrictive enough to protect the receiving stream, DEQ must include a WQBEL in the permit.

3.1 Existing Effluent Limits

The table below show the limits contained in the existing permit.

Table 3-1: Existing Effluent Limits Outfalls 001 and 002 (Year-Round)

Parameter	Units	Average Monthly	Average Weekly	Daily Maximum
BOD_5	mg/L	30	45	
	lb/day*	100	150	200
	% removal	85	-	-
TSS	mg/L	30	45	
	lb/day*	100	150	200
	% removal	85	-	-
pH	SU	Instantaneous limit between a daily minimum of 6.0 and a daily maximum of 9.0		
Fecal Coliform Bacteria (marine and estuarine shellfish growing waters)	#/100 mL	Must not exceed a monthly geometric mean of 126, no single sample may exceed 406		
Enterococcus Bacteria (coastal areas with primary contact recreation uses)	#/100 mL	Must not exceed a monthly geometric mean of 35, not more than 10% of the samples may exceed 130		
*Mass load limits are based on a flow of 0.4 MGD.				

3.2 Technology-Based Effluent Limit Development

40 CFR 122.44(a)(1) requires publicly owned treatment works (POTW) to meet technology-based effluent limits, for five-day biochemical oxygen demand (BOD_5), total suspended solids (TSS) and pH (i.e., federal secondary treatment standards). Substitution of 5-day carbonaceous oxygen demand ($CBOD_5$) for BOD_5 is allowed. The numeric standards for these pollutants are contained in 40 CFR 133.102. In addition, DEQ has developed minimum design criteria for BOD_5 and TSS that apply to specific watershed basins in Oregon. These are listed in the basin-specific criteria sections under OAR 340-041-0101 to 0350. During the summer low flow months as defined by OAR, these design criteria are more stringent than the federal secondary treatment standards. The basin-specific criteria are not effluent limits but are implemented as design criteria for new or expanded wastewater treatment plants. The table below shows a comparison of the federal secondary treatment standards and the basin-specific design criteria for the North Coast basin.

Table 3-2: Comparison of TBELs for Federal Secondary Treatment Standards and Oregon Basin-Specific Design Criteria

Parameter	Federal Secondary Treatment Standards		North Coast Basin-Specific Design Criteria (OAR 340-041-0235)
	30-Day Average	7-Day Average	Monthly Average
BOD_5 (mg/L)	30	45	Direct ocean discharges, secondary treatment (Federal standard) for BOD_5 and TSS
TSS (mg/L)	30	45	
pH (S.U.)	6.0 – 9.0. (instantaneous)		Not applicable
BOD_5 and TSS % Removal	85%	Not applicable	Not applicable

OAR 340-041-0235 does not list specific design criteria for direct ocean dischargers. Therefore, it is appropriate to implement the federal secondary treatment standards.

The limits for BOD_5 and TSS shown in the table above are concentration-based limits. Mass-based limits are required in addition to the concentration-based limits per OAR 340-041-0061(9). For any new facility or any facility that has expanded its dry weather treatment capacity after June 30, 1992, OAR 340-041-0061(9)(b) requires that the mass load limits be calculated based on the proposed treatment facility capabilities and the highest and best practicable treatment to minimize the discharge of pollutants.

Monthly Avg Mass Load = Design Flow* x Monthly Concentration Limit x Unit Conversion factor

Weekly Average Mass Load = 1.5 x Monthly Average Mass Load Limit

Daily Maximum Mass Load = 2 x Monthly Average Mass Load Limit

* Design flow is the design maximum monthly dry weather flow (DMMDWF) or design maximum monthly wet weather flow (DMMWWF)

The following table lists the effluent flows and concentration limits used for the calculations.

Table 3-3: Design Flows and Concentrations Limits

Season	Design Flow (mgd)	Monthly TSS Concentration Limit (mg/L)	Monthly BOD_5 Concentration Limit (mg/L)
Dry Weather	0.58	30	30
Wet Weather	0.70	30	30
Design flow comments: Dry weather design flow basis is the design maximum monthly dry weather flow (DMMDWF), and wet weather design flow basis is design maximum monthly wet weather flow (DMMWWF)			

NOSD's dry weather mass load limits for BOD_5 and TSS are calculated using the design maximum monthly dry weather flow of 0.58 mgd and a monthly concentration limit of 30 mg/L. The dry weather calculations are:

Monthly Average: 0.58 mgd x 30 mg/L x 8.34 = 145.2 lbs/day rounded off to 150 lbs/day (two significant figures)

Weekly Average: 150 x 1.5 = 225 lbs/day rounded off to 230 lbs/day (two significant figures)

Daily Maximum: 150 lbs/day monthly average x 2 = 300 lbs/day

NOSD's wet weather mass load limits for BOD_5 and TSS are calculated using the design maximum monthly wet weather flow of 0.70 mgd and a monthly concentration limit of 30 mg/L. The wet weather calculations are:

Monthly Average: 0.70 mgd x 30 mg/L x 8.34 = 175.1 lbs/day rounded off to 180 lbs/day (two significant figures)

Weekly Average: 180 lbs/day monthly average x 1.5 = 270 lbs/day

Daily Maximum: 180 lbs/day monthly average x 2 = 360 lbs/day

The facility's mass load limits were previously calculated in the 2020 permit using a design flow of 0.4 mgd in both the dry season and the wet season and are lower than the mass load limits calculated above. To address antidegradation and anti-backsliding, the mass load limits from the current 2020 permit are retained for this permit cycle. Additionally, the permittee has not requested a mass load increase. The proposed BOD_5 and TSS limits are listed in the following table.

Table 3-4: BOD_5 and TSS Technology Based Effluent Limits

Parameter	Units	Average Monthly	Average Weekly	Daily Maximum
BOD_5 (year-round)	mg/L	30	45	
	lbs/day	100	150	200
	% removal	85	-	-
TSS (year-round)	mg/L	30	45	
	lbs/day	100	150	200
	% removal	85	-	-

3.3 Water Quality-Based Effluent Limit Development

40 CFR 122.44(d) requires that permits include limitations more stringent than technology-based requirements where necessary to meet water quality standards. Water quality-based effluent limits may be in the form of a wasteload allocation required as part of a Total Maximum Daily Load (TMDL). They may also be required if a site-specific analysis indicates the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality criterion. DEQ establishes effluent limits for pollutants that have a reasonable potential to exceed a criterion. The analyses are discussed below.

3.3.1 Designated Beneficial Uses

NPDES permits issued by DEQ must protect the following designated beneficial uses of the Pacific Ocean. These uses are listed in OAR-340-041-0230 for the North Coast basin.

- Industrial water supply
- Fish and aquatic life (including salmonid rearing, migration and spawning)
- Wildlife and hunting
- Fishing
- Boating
- Water contact recreation
- Aesthetic quality
- Commercial navigation and transportation

3.3.2 303(d) Listed Parameters and Total Maximum Daily Loads

The following table lists the parameters that are on the 2022 303(d) list (Category 5) within the discharge's stream reach. If a parameter is listed under Category 5, the data in the assessment unit (or nearby assessment unit) indicates a designated use is not supported or a water quality standard is not attained and a TMDL is needed. The table also lists any parameters with an approved TMDL for the discharge's stream reach (Category 4A). If a parameter is listed under Category 4A, TMDLs that will result in attainment of water quality standards and beneficial use support have been approved.

Table 3-5: Category 5 and Category 4A Parameters

Water Quality Limited Parameters (Category 5)	
AU ID:	OR_OC_1710020310_01_107239
AU Name:	Three Arch Rocks-Pacific Ocean
AU Status:	Insufficient Data
Year Listed	Not listed
Year Last Assessed	2018
Category 5 Parameters	None
Category 4A Parameters	
NA	

3.3.3 Ocean Discharge Findings

Federal rules (40 CFR §125.120 – 40 CFR §125.124) require that a discharge into territorial seas that is to be permitted under the NPDES program be evaluated as to whether the discharge will cause unreasonable degradation of the marine environment. Goals 6 and 19 of Oregon's Statewide Planning Goals and Guidelines and Oregon's Territorial Seas Plan require that the State's marine resources be conserved. DEQ believes that the intent of these criteria is to reduce or prevent the discharge of those persistent pollutants that bio-accumulate in the marine food chain. Pollutants found in sewage that are amenable to treatment by typical wastewater treatment facilities include Biochemical Oxygen Demand (BOD_5), Total Suspended Solids (TSS), pH, bacteria, nutrients, and potentially toxic substances, such as chlorine, which is used for disinfection of pathogenic organisms. BOD_5, TSS, and pH are not discrete substances that can accumulate in living organisms. BOD_5 is a measure of the oxygen used by microorganisms when they break down organic matter. TSS is a measure of organic and inorganic solid materials that are suspended in the water column, and pH is a measure of the amount of hydrogen ions in solution.

Residual chlorine in treated wastewater, if any, immediately reacts with bromide naturally present in seawater to produce other oxidants that are toxic to living organisms. These other oxidants are referred to as chlorine produced oxidants. Chlorine, which is still present in the reaction products, is too reactive to be bioavailable from soil, water, or other environmental media and too reactive to bio-accumulate in the food chain. Netarts-Oceanside Sanitary District, however, uses ultraviolet light for disinfection, and chlorine compounds are prohibited in the discharge. Bacteria do not bio-accumulate in other living organisms. Nutrients, (e.g., nitrogen and phosphorus), can have deleterious effects on the marine environment by stimulating algal blooms. These algal blooms have the potential to cause turbidity problems and fluctuations in dissolved oxygen and pH. However, nutrients do not bio-accumulate in the tissues of living organisms and do not bio-magnify in the trophic levels of marine food chains.

DEQ has concluded that the discharge from Netarts-Oceanside Sanitary District wastewater treatment plant will not cause unreasonable degradation of the marine environment.

3.3.4 Pollutants of Concern

To ensure that a permit is protecting water quality, DEQ must identify pollutants of concern. These are pollutants that are expected to be present in the effluent at concentrations that could adversely impact water quality. DEQ uses the following information to identify pollutants of concern:

- Effluent monitoring data.
- Knowledge about the permittee's processes.
- Knowledge about the receiving stream water quality.
- Pollutants identified by applicable federal effluent limitation guidelines.

Based on EPA's NPDES permit application requirements, toxic pollutants of concern for domestic facilities are listed in the following table.

Table 3-6: Domestic Toxic Pollutants of Concern

Flow Rate	Pollutants
< 0.1 mgd	Total Residual Chlorine
≥ 0.1 mgd and < 1.0 mgd	Total Residual Chlorine, Total Ammonia Nitrogen
≥ 1.0 mgd	Total Residual Chlorine, Total Ammonia Nitrogen, Metals, Volatile Organic Compounds, Acid Extractable Compounds, Base Neutral Compounds

DEQ identified the following pollutants of concern for this facility listed in the following table.

Table 3-7: Pollutants of Concern

Pollutant	How was pollutant identified?
pH	Effluent Monitoring
Temperature	Effluent Monitoring
Fecal Coliform	Effluent Monitoring
Enterococcus	Effluent Monitoring
Total Ammonia Nitrogen	Application Requirement

The sections below discuss the analyses that were conducted for the pollutants of concern to determine if water quality based effluent limits are needed to meet water quality standards.

3.3.5 Regulatory Mixing Zone

The proposed permit contains a mixing zone as allowed per OAR 340-041-0053. The regulatory mixing zone from the existing permit applies to both Outfall 001 and 002 and is described as:

> *That portion of the Pacific Ocean within one hundred (100) feet of the outfall diffuser. The Zone of Immediate Dilution (ZID) is that portion of the allowable mixing zone that is within ten (10) feet of the diffuser.*

The proposed permit contains an updated regulatory mixing zone description which is described as follows. The description was updated for clarity of language:

> *The Regulatory Mixing Zone (RMZ) is the portion of the Pacific Ocean within a 100-foot radius of the outfall diffuser for both Outfall 001 and Outfall 002. The Zone of Immediate Dilution (ZID) is that portion of the RMZ that is within a 10-foot radius of the diffuser for both Outfall 001 and Outfall 002.*

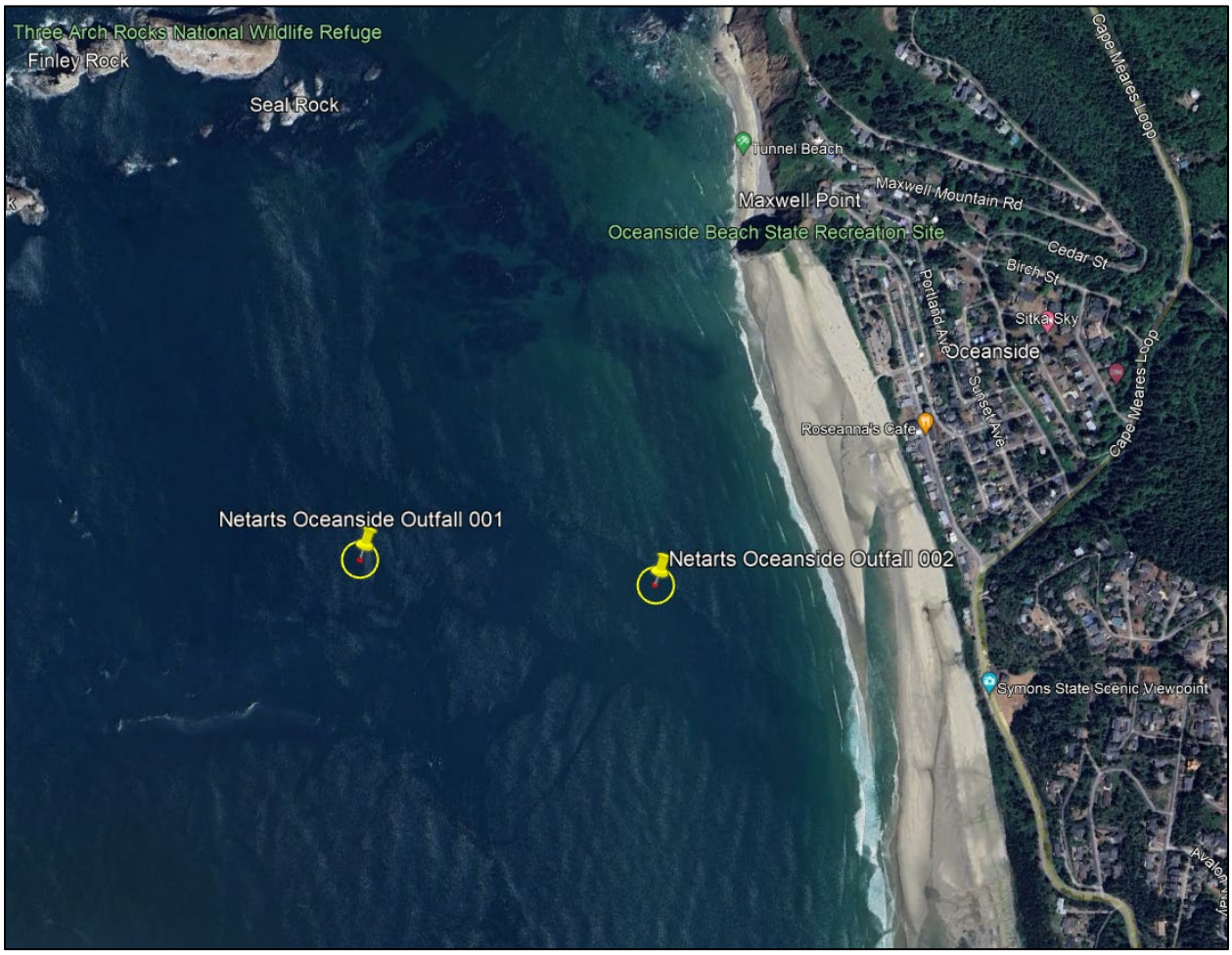

Figure 3-1: Outfall Locations for Outfall 001 and 002 with RMZ (yellow circle) and ZID (red circle)

Outfall 001 is a 14-inch diameter pipe fitted with a TideFlex valve located 2,600 ft offshore (45.456834, -123.98095 (WGS84)). The pipe outfall is 8 ft above the seafloor is angled so that the effluent discharges at an 80° angle from the bottom of the seafloor. Outfall 002 is a 16-inch diameter single pipe located approximately 960 ft offshore (45.457821, -123.977314 (WGS84)). The pipe discharges at a 90° angle from the seafloor. There are no recent outfall inspections, and it is assumed that the pipe is currently buried since previous reports from 2006 indicated that sand regularly intruded into the outfall. Outfall 002 is only used when Outfall 001 is undergoing maintenance work, approximately once per year.

The dilution factors at the edge of the Regulatory Mixing Zone and Zone of Initial Dilution are shown in Table 3-8 and 3-9. These dilutions are based on a January 26, 2016 mixing zone study reviewed by DEQ. The mixing zone memo documenting this review is in a Sept 18, 2024 Mixing Zone Memo which is part of the administrative record. For this memo, DEQ performed an updated analysis using current effluent flow data and updated outfall configuration and depth information from the most recent Outfall Inspection report.

Table 3-8: Outfall 001 Dilution Summary

Dilution Summary – Outfall 001 – Year Round						
Water Quality Standard	**Velocity (m/s)**		**Effluent Flow (mgd)**		**Dilution Factor**	**Location**
	Statistic	**Flow**	**Statistic**	**Flow**		
Aquatic Life, Acute	Conservative estimate	0.05	☐ ADWDF x PF ☒ Max Daily Avg ☐ Other	0.235	60	ZID (10 ft)
Aquatic Life, Chronic	Conservative estimate	0.05	☐ ADWDF ☒ Max Monthly Avg ☐ Other	0.125	386	RMZ (100 ft)
ADWDF = Average dry weather design flow *PF = Peaking factor (1.5)*						
Comments: The velocity of 0.05 m/s was a conservative estimate from the 2016 MZ study based on limited field data from a 2004 study near Newport.						

Table 3-9: Outfall 002 Dilution Summary

Dilution Summary – Outfall 002 – Year Round						
Water Quality Standard	**Velocity (m/s)**		**Effluent Flow (mgd)**		**Dilution Factor**	**Location**
	Statistic	**Flow**	**Statistic**	**Flow**		
Aquatic Life, Acute	Conservative estimate	0.05	☐ ADWDF x PF ☒ Max Daily Avg ☐ Other	0.235	63	ZID (10 ft)
Aquatic Life, Chronic	Conservative estimate	0.05	☐ ADWDF ☒ Max Monthly Avg ☐ Other	0.125	292	RMZ (100 ft)
ADWDF = Average dry weather design flow *PF = Peaking factor (1.5)*						
Comments: The velocity of 0.05 m/s was a conservative estimate from the 2016 MZ study based on limited field data from a 2004 study near Newport. Outfall 002 is used for the entire facility flow only when Outfall 001 is undergoing maintenance, so the expected effluent flows are the same as 001.						

3.3.6 pH

The pH criterion for marine waters in this basin is 7.0 – 8.5 per OAR 340-041-0235. DEQ determined there is no reasonable potential for the discharge to exceed the pH criteria at the edge of the mixing zone from Outfall 001 and Outfall 002. The upper limit remains 9.0 and is a TBEL. The lower limit remains 6.0 and is a TBEL. The following provides a summary of the data used for the analysis.

Table 3-10: pH Reasonable Potential Analysis – Outfall 001

INPUT	Lower pH Criteria	Upper pH Criteria
1. Dilution at mixing zone boundary	386.0	386.0
2. Upstream characteristics		
a. Temperature (deg C)	15.4	11.3
b. pH	7.6	8.3
c. Alkalinity (mg CaCO3/L)	110.1	110.1
3. Effluent characteristics		
a. Temperature (°C)	21.6	12.0
b. pH (S.U.)	6.0	9.0
c. Alkalinity (mg CaCO3/L)	67.2	67.2
4. Applicable pH criteria	7.0	8.5
pH at mixing zone boundary	7.6	8.3
Is there reasonable potential?	No	No
Proposed effluent limits	6.0	9.0
Effluent data source: DMRs 2020-2024. Effluent salinity value of 0.2 psu used from permittee reported data.		
Ambient data source: pH: International Pacific Halibut Commission, station 1045; 2014-2019 Temperature and Salinity: 13311, 29382, 29383, and 29384 ORDEQ stations. Average salinity value of 31.9 psu used in analysis. Alkalinity: 13311-ORDEQ station		

Table 3-11: pH Reasonable Potential Analysis – Outfall 002

INPUT	Lower pH Criteria	Upper pH Criteria
1. Dilution at mixing zone boundary	292.0	292.0
2. Upstream characteristics		
a. Temperature (deg C)	15.4	11.3
b. pH	7.6	8.3
c. Alkalinity (mg CaCO3/L)	110.1	110.1
3. Effluent characteristics		
a. Temperature (°C)	21.6	12.0
b. pH (S.U.)	6.0	9.0
c. Alkalinity (mg CaCO3/L)	67.2	67.2
4. Applicable pH criteria	7.0	8.5
pH at mixing zone boundary	7.6	8.3
Is there reasonable potential?	No	No
Proposed effluent limits	6.0	9.0
Effluent data source: DMRs 2020-2024. Effluent salinity value of 0.2 psu used from permittee reported data.		
Ambient data source: pH: International Pacific Halibut Commission, station 1045; 2014-2019 Temperature and Salinity: 13311, 29382, 29383, and 29384 ORDEQ stations. Average salinity value of 31.9 psu used in analysis. Alkalinity: 13311-ORDEQ station		

3.3.7 Temperature

3.3.7.1 Temperature Criteria OAR 340-041-0028

The following table summarizes the temperature criteria that apply at the discharge location along with whether the receiving stream is water quality-limited for temperature and whether a TMDL wasteload allocation has been assigned. Using this information, DEQ performed several analyses to determine if effluent limits were needed to comply with the temperature criteria.

Table 3-12: Temperature Criteria Information

Applicable Temperature Criterion	Oceans & Bays (340-041-0028(7))
Applicable dates: Year-round	
Salmon/Steelhead Spawning 13 °C? OAR 340-041-0028(4)(a)	☐Yes ☒No
WQ-limited?	☐Yes ☒No
TMDL wasteload allocation assigned?	☐Yes ☒No
Cold water summer protection criterion applies?	☐Yes ☒No
Cold water spawning protection applies?	☐Yes ☒No

DEQ conducted a temperature reasonable potential analysis for Outfall 001 and Outfall 002. The applicable temperature criterion is ocean waters may not be warmed by more than 0.3 degrees Celsius (0.5 degrees Fahrenheit) above the natural condition unless a greater increase would not reasonably be expected to adversely affect fish or other aquatic life.

The effluent temperature value used in these analyses is 21.34 °C. This value was taken from the facility's DMRs for the period from May 2020 to July 2024 and represents the maximum 7-day average of the daily maximums for the summer months. The results of both RPAs indicate that there is no potential for the facility's discharge to exceed the temperature standard. See Appendix A.

Based on these analyses, no temperature limit associated with the applicable temperature criteria is included in the proposed permit.

3.3.7.2 Thermal Plume OAR 340-041-0053(2)(d)

In addition to compliance with the temperature criteria, OAR 340-041-0053(2)(d) contains thermal plume limitation provisions designed to prevent or minimize adverse effects to salmonids that may result from thermal plumes. The discharge was evaluated for compliance with these provisions as follows:

- OAR 340-041-0053(2)(d)(A): Impairment of an active salmonid spawning area where spawning redds are located or likely to be located. This adverse effect is prevented or minimized by limiting potential fish exposure to temperatures of 13 ºC or more for salmon and steelhead, and 9 ºC or more for bull trout.

  The Pacific Ocean is not designated as salmonid spawning habitat. Therefore, the spawning area requirement is met.

- OAR 340-041-0053(2)(d)(B): Acute impairment or instantaneous lethality is prevented or minimized by limiting potential fish exposure to temperatures of 32 ºC or more to less than 2 seconds.

The maximum daily effluent temperature is 24 °C, which is much less than the lethal criterion of 32 °C, thus acute impairment or instantaneous lethality is prevented or minimized.

- OAR 340-041-0053(2)(d)(C): Thermal shock caused by a sudden increase in water temperature is prevented or minimized by limiting potential fish exposure to temperatures of 25 ºC or more to less than 5% of the cross-section of 100% of the 7Q10 flow of the water body.

  Since the maximum effluent temperature is less than 25 °C, thermal shock caused by the discharge is prevented or minimized.

- OAR 340-041-0053(2)(d)(D): Unless ambient temperature is 21 ºC or greater, migration blockage is prevented or minimized by limiting potential fish exposure to temperatures of 21 ºC or more to less than 25% of the cross-section of 100% of the 7Q10 flow of the water body.

  The temperature RPA results indicate that the effluent will not raise the temperature within the mixing zone above 13.3 °C. Because the effluent will not increase the temperature within the mixing zone above 21 ºC, and the mixing zone cross-section is much less than 25% of the Pacific Ocean, the discharge is not expected to block migration of salmonid species.

This evaluation shows the discharge from NOSD's outfalls meet the temperature thermal plume limits and therefore, a thermal plume effluent limit is not needed.

3.3.8 Bacteria

OAR 340-041-0009(6)(a) requires discharges of bacteria into coastal waters meet a monthly geometric mean of 35 enterococcus organisms per 100 mL, with no more than 10 percent of samples exceeding 130 enterococcus organisms per 100 mL. The following table includes the proposed permit limits and apply year-round.

Table 3-13: Proposed Enterococcus Limits

Enterococcus (#/100 ml)	Geometric Mean	No more than 10% exceed
Existing Limit	35	130
Proposed Limit	35	130

The fecal coliform standard applicable to shellfish harvesting do not require the criteria to be met at the point of discharge. To prevent human health risks, RMZs for bacteria are generally not allowed. However, in rare cases when waters are suitable for shellfish growing but cannot support active shellfish harvesting due to various constraints, a mixing zone may be considered, as long as there is no impact to human recreational use or neighboring shellfish harvesting areas.

The area of the Pacific Ocean to which NOSD discharges has a designated use of Coastal Contact Recreation and Shellfish Harvesting (OAR 340-041-0230 Figure 230C). Although the waters are suitable for shellfish growing, NOSD discharges through bottom of the seafloor outfalls and shellfish harvesting is not supported at the depth of discharge. Therefore, a RMZ is allowed, and the effluent limits are set to be protective of Water Contact Recreation. The proposed limits are a 30-day log mean of 126 organisms per 100 milliliters with no single sample exceeding 406 organisms per 100 mL and apply year-round. The following table includes the proposed permit limits and apply year-round.

Table 3-14: Proposed Fecal Coliform Limits

Fecal Coliform (#/100 ml)	30- Day Log Mean	No single sample may exceed
Existing Limit	126 (See note a.)	406
Proposed Limit	126	406
Note: a. Previous limit was reported as a geometric mean.		

3.3.9 Toxic Pollutants

DEQ typically performs the reasonable potential analysis for toxics according to EPA guidance provided in the Technical Support Document for Water Quality-Based Toxics Control (TSD) (Office of Water Enforcement and Permits, U.S. EPA, March 1991). The factors incorporated into this analysis include:

1. Effluent concentrations and variability
2. Water quality criteria for aquatic life and human health
3. Receiving water concentrations
4. Receiving water dilution (if applicable)

DEQ performs these analyses using spreadsheets that incorporate EPA's statistical methodology. The following sections describe the analyses for various toxic pollutants below.

3.3.9.1 Total Ammonia Nitrogen

DEQ's ammonia criteria vary with changes in pH and temperature. DEQ performed a reasonable potential analysis that accounts for changes in the effluent and receiving water pH and temperature to determine the appropriate ammonia criteria. The following table provides a summary of the data used for the ammonia analysis and the results of the analysis. NOSD does not have an existing ammonia limit. DEQ determined there is no reasonable potential for the discharge to exceed the ammonia criteria at the edge of the mixing zone when discharged from Outfall 001 and Outfall 002. Therefore, the proposed permit does not contain an ammonia limit.

Table 3-15: Ammonia Analysis Information – Outfall 001 Year-round

	Acute	Chronic
		4-day
Dilution	60	386
Ammonia Criteria	4.3	0.7
Effluent Data Used		
Ammonia (mg/L)	18.0	18.0
pH (SU)	7.6	7.6
Temperature (ºC)	22.5	22.5
Alkalinity (mg/L CaCO3)	19.0	19.0
Receiving Stream Data Used		
Ammonia (mg/L)	0.1	0.1
pH (SU)	8.3	8.3
Temperature (ºC)	15.4	15.4
Alkalinity (mg/L CaCO3)	110.9	110.9
Ammonia Limit Needed?	No	
Calculated Limits	AML	MDL
Ammonia (mg/L)	NA	NA
Effluent data source		
Ammonia, temperature, and pH: ICIS summary statistics Alkalinity: DMRs 2020-2024 Salinity: maximum reported salinity value of 0.22 psu used.		
Ambient data source		
Ammonia and Alkalinity: 13311-ORDEQ station Temperature: 13311, 29382, 29383, and 29384 ORDEQ stations pH: International Pacific Halibut Commission, station 1045; 2014-2019 Alkalinity: 13311-ORDEQ station Salinity: maximum reported salinity of 33.5 from stations 13311-ORDEQ and 29382-ORDEQ used in analysis.		

Table 3-16: Ammonia Analysis Information – Outfall 002 Year-round

	Acute	Chronic
		4-day
Dilution	63	292
Ammonia Criteria	4.3	0.7
Effluent Data Used		
Ammonia (mg/L)	18.0	18.0
pH (SU)	7.6	7.6
Temperature (ºC)	22.5	22.5
Alkalinity (mg/L CaCO3)	19.0	19.0
Receiving Stream Data Used		
Ammonia (mg/L)	0.1	0.1
pH (SU)	8.3	8.3
Temperature (ºC)	15.4	15.4
Alkalinity (mg/L CaCO3)	110.9	110.9
Ammonia Limit Needed?	No	
Calculated Limits	AML	MDL
Ammonia (mg/L)	NA	NA
Effluent data source		
Ammonia, temperature, and pH: ICIS summary statistics Alkalinity: DMRs 2020-2024 Salinity: maximum reported salinity value of 0.22 psu used.		
Ambient data source		
Ammonia and Alkalinity: 13311-ORDEQ station Temperature: 13311, 29382, 29383, and 29384 ORDEQ stations pH: International Pacific Halibut Commission, station 1045; 2014-2019 Alkalinity: 13311-ORDEQ station Salinity: maximum reported salinity of 33.5 from stations 13311-ORDEQ and 29382-ORDEQ used in analysis.		

3.3.9.2 Mercury – Human Health Criterion

DEQ determined that this facility is not a likely source of mercury. Therefore, no additional controls or monitoring will be required.

3.4 Antibacksliding

The proposed permit complies with the antibacksliding provisions of CWA sections 402(o) and 303(d)(4) and 40 CFR 122.44(l). The proposed limits are the same or more stringent than the existing permit so the antibacksliding provision is satisfied.

3.5 Antidegradation

DEQ must ensure the permit complies with Oregon's antidegradation policy found in OAR 340-041-0004. This policy is designed to protect water quality by limiting unnecessary degradation from new or increased sources of pollution.

DEQ has performed an antidegradation review for this discharge. The proposed permit contains the same or more stringent discharge loadings as the existing permit. Permit renewals with the same or more stringent discharge loadings as the previous permit are not considered to lower water quality from the existing condition. DEQ is not aware of any information that existing limits are not protecting the receiving stream's designated beneficial uses. DEQ is also not aware of any existing uses present within the water body that are not currently protected by standards developed to protect the designated uses. Therefore, DEQ has determined that the proposed discharge complies with DEQ's antidegradation policy. DEQ's antidegradation worksheet for this permit renewal is available upon request.

3.6 Whole Effluent Toxicity

DEQ does not require whole effluent toxicity testing (WET) for minor domestic facilities because concentrations of toxics are typically very low and WET testing is not warranted.

3.7 Groundwater

The treatment facility does not have any basins, ponds or lagoons that have the potential to leach into the groundwater. No groundwater monitoring or limits are required.

4. Schedule A: Other Limitations

4.1 Mixing Zone

Schedule A describes the regulatory mixing zone as discussed above in section 3.

4.2 Chlorine Usage

Schedule A of the permit prohibits the permittee from using chlorine or chlorine compounds for effluent disinfection purposes.

5. Schedule B: Monitoring and Reporting Requirements

Schedule B of the permit describes the minimum monitoring and reporting necessary to demonstrate compliance with the proposed effluent limits. In addition, monitoring for other parameters is required to better characterize the effluent quality and the receiving stream. This data will be used during the next permit renewal. Detailed monitoring frequency and reporting requirements are in Schedule B of the proposed permit. The required monitoring, reporting and frequency for many of the parameters are based on DEQ's monitoring and reporting matrix

guidelines, permit writer judgment, and to ensure the needed data is available for the next permit renewal. DEQ has determined that effluent characterization through monitoring is necessary to fully evaluate the facility's site-specific conditions.

During the applicant review period, the permittee requested an evaluation of the minimum required monitoring for any possible reductions in monitoring. DEQ analyzed the performance of the facility against the proposed effluent limits and determined that the facility was able to achieve monitoring reductions in BOD, TSS, Enterococci, and Fecal Coliform monitoring. The new monitoring frequency is outlined in Tables B2 and B3 of the permit.

6. Schedule C: Compliance Schedule

The permittee is expected to meet all effluent limits once the permit becomes effective and therefore a compliance schedule is not needed.

7. Schedule D: Special Conditions

The proposed permit contains the following special conditions:

7.1 Inflow Removal

DEQ approved mass load limits based on the permittee's wet weather design flows and therefore a condition is included that requires the permittee to submit an updated inflow removal program per OAR 340-041-0061(9)(a)(G).

7.2 Mixing Zone Study

A requirement to submit an updated mixing zone study.

7.3 Emergency Response and Public Notification Plan

A requirement to develop and submit an emergency and spill response plan or ensure the existing one is current per General Condition B.8 in Schedule F.

7.4 Exempt Wastewater Reuse at the Treatment System

A condition that exempts the permit holder from the recycled water requirements in OAR 340-055, when recycled water is used for landscape irrigation at the treatment facility or for in-plant processes, such as in plant maintenance activities.

7.5 Wastewater Solids Annual Report

This condition requires the permittee to submit a Wastewater Solids Annual Report each year documenting removal of wastewater solids from the facility during the previous calendar year.

7.6 Wastewater Solids Transfers

A condition that allows the facility to transfer treated or untreated wastewater solids to other in-state or out-of-state facilities that are permitted to accept the wastewater solids.

7.7 Hauled Waste Control Plan

A condition that allows the acceptance of hauled waste according to a DEQ-approved hauled waste plan. The hauled waste plan ensures waste is not accepted that could negatively impact the treatment capabilities of the facility.

7.8 Hauled Waste Annual Report

A condition requiring submittal of an annual hauled waste report that summarizes hauled waste accepted at the facility during the previous year.

7.9 Lagoon Solids

A condition requiring the permittee to submit a sludge depth survey report to ensure lagoon solids are maintained within design standards and accumulations do not negatively affect treatment capabilities.

7.10 Operator Certification

The permit holder is required to have a certified operator consistent with the size and type of treatment plant covered by the permit per OAR 340-049-0005. This special condition describes the requirements relating to operator certification.

7.11 Industrial User Survey

This condition requires the permittee to conduct or update an industrial user survey. The purpose of the survey is to identify whether there are any categorical industrial users discharging to the POTW and ensure regulatory oversight of these discharges.

7.12 Outfall Inspection

A condition that requires the permittee to inspect the outfall and submit a report regarding its condition.

8. Schedule F: NPDES General Conditions

Schedule F contains the following general conditions that apply to all NPDES permittees. These conditions are reviewed by EPA on a regular basis.

- Section A. Standard Conditions
- Section B. Operation and Maintenance of Pollution Controls
- Section C. Monitoring and Records
- Section D. Reporting Requirements
- Section E. Definitions

Appendix A: Reasonable Potential Analyses

Temperature reasonable potential analysis for Outfall 001:

Discharge to Natural Lakes (OAR 340-041-0028(6)) and Ocean/Bays (OAR 340-041-0028(7))
Analysis at Edge of Mixing Zone
Section 5.7 of the Temperature IMD

Note: This spreadsheet is generally only appropriate for analyses of effluent from minor domestic facilities. For other facilities, an analysis using paired seasonal ambient and effluent data is more appropriate.

Facility Name: Netarts-Oceanside Sanitary District **Date: 9-26-2024**

Enter data into white cells below:

			Data Metric/Source
Mixing Zone Dilution =	386		Dilution factor at RMZ - Mixing Zone Memo
Ambient Temperature =	13.3	°C	Average of DEQ station temperature data - ORDEQ Stations 13311, 29382, 29383, and 29384; Years 2016-2023
Effluent Temperature =	23.14	°C	Maximum 7-day average of daily maximum - ICIS data
Allowable Increase =	0.3	°C	Average dry weather design flow
Effluent Flow =	0.38	mgd	

ΔT at MZ edge= 0.03 °C **No Reasonable Potential**

Thermal Load Limit = N/A Million Kcals

Note: If Reasonable Potential is indicated, use a more refined analysis (e.g. paired temperature analysis) to make the final RP determination.

Equation used to calculate ΔT at edge of MZ

$$\Delta T_{mz} = \frac{T_e + (S-1)T_a}{S} - T_a$$

Equation used to calculate thermal load limit

$$TLL = 3.7854 Q_e S \Delta T_{all} C_p \rho$$

Where:
Qe = Effluent Flow in mgd
S = Dilution
ΔT_{all} = Allowable temperature increase at edge of MZ (°C)
Cp = Specific Heat of Water (1 cal/g °C)
ρ = Density of Water (1 g/cm^3)
3785.41 = Flow conversion from mgd to m^3/day

Temperature Reasonable Potential Analysis for Outfall 002:

Discharge to Natural Lakes (OAR 340-041-0028(6)) and Ocean/Bays (OAR 340-041-0028(7))
Analysis at Edge of Mixing Zone
Section 5.7 of the Temperature IMD

Note: This spreadsheet is generally only appropriate for analyses of effluent from minor domestic facilities. For other facilities, an analysis using paired seasonal ambient and effluent data is more appropriate.

Facility Name: Netarts-Oceanside Sanitary District **Date: 09-26-2024**

Enter data into white cells below:

			Data Metric/Source
Mixing Zone Dilution =	292		Dilution factor at RMZ - Mixing Zone Memo
Ambient Temperature =	13.3	°C	Average of DEQ station temperature data - ORDEQ Stations 13311, 29382, 29383, and 29384; Years 2016-2023
Effluent Temperature =	23.14	°C	Maximum 7-day average of daily maximum - ICIS data
Allowable Increase =	0.3	°C	Average dry weather design flow
Effluent Flow =	0.38	mgd	

ΔT at MZ edge= 0.03 °C **No Reasonable Potential**

Thermal Load Limit = N/A Million Kcals

Note: If Reasonable Potential is indicated, use a more refined analysis (e.g. paired temperature analysis) to make the final RP determination.

Equation used to calculate ΔT at edge of MZ

$$\Delta T_{mz} = \frac{T_e + (S-1)T_a}{S} - T_a$$

Equation used to calculate thermal load limit

$$TLL = 3.7854 Q_e S \Delta T_{all} C_p \rho$$

Where:
Qe = Effluent Flow in mgd
S = Dilution
ΔT_{all} = Allowable temperature increase at edge of MZ (°C)
Cp = Specific Heat of Water (1 cal/g °C)
ρ = Density of Water (1 g/cm^3)
3785.41 = Flow conversion from mgd to m^3/day