State of Oregon
Department of
Environmental
Quality

National Pollutant Discharge Elimination System
Permit Fact Sheet
Tillamook RV Park

Final: April 24, 2024

Permittee	Tillamook RV Park (formerly Pacific Campground) 1950 Suppress Rd Tillamook, OR 97141
Existing Permit Information	File Number: 66063 Permit Number: 101987 EPA Reference Number: OR0031348 Category: Domestic Class: Minor Expiration Date: October 31, 2023
Permittee Contact	Rondi Springer Owner 818-425-5820 466 Foothill Blvd. #387 La Canada, CA, 91011
Receiving Water Information	Receiving stream/NHD name: Smith Creek NHD Reach Code & % along reach: 17100203008702, 100% along reach USGS 12-digit HUC: 171002030508- Lower Wilson River OWRD Administrative Basin: North Coast ODEQ LLID & RM: 1238493454831-RM0.27 Integrated Report AU ID: OR_WS_171002030508_05_106193
Proposed Action	Permit Renewal Application Number: 948329 Date Application Received: April 1, 2023
Permit Writer	Aliana Britson (503) 229-6044 Date Prepared: February 14, 2024

NPDES Permit Fact Sheet
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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 (Not Applicable)
Schedule D – Special conditions
Schedule E – Pretreatment conditions (Not Applicable)
Schedule F – General conditions

A summary of the major changes to the permit are listed below:

- Removal of UV system in permit requirements
- Update of Fecal Coliform limits
- Expansion of effluent limit and monitoring timeframes to account for ability of permittee to discharge out of Outfall 001 during the summer if drainfield is inoperable
- The inclusion of restrictions on Outfall 002 usage during wet season
- Inclusion of BOD and TSS limits for Outfall 002, including compliance schedule with interim limits
- Inclusion of Schedule D requirements for Septic and drainfield maintenance and operation
- The inclusion of special conditions for septic and drainfield operation and maintenance
- Inclusion of Outfall 002 effluent monitoring
- Inclusion of the 200 mg/L influent BOD and TSS influent assumption due to the use of septic tanks
- Clarification of discharge dilution limit to Smith Creek: dilution is at full mix and is the dilution ratio (stream flow divided by effluent flow).
- Inclusion of special conditions to minimize ammonia concentrations and flocculant use
- Update of lower pH limit from 6.6 to 6.7 S.U.

2. Facility Description

2.1 Wastewater Facility

The Tillamook RV Park is located just north of the City of Tillamook in rural Tillamook County (Figure 2-1). Originally built in 1984, The site serves up to 50 RV units daily (approximately 80

people) and has camping sites available with restrooms and showers. The waste stream is entirely conventional domestic sewage.

The wastewater treatment and disposal system consist of an 8,000 gallon septic tank and a 3,000 gallon septic tank with a pump station to the treatment system. The effluent is further treated by an activated sludge sequencing batch reactor with an automated pumping chlorination system and sand filtration before UV disinfection. The effluent then is either discharged to Outfall 002 or then goes to dechlorination prior to discharge to Outfall 001. Dechlorination occurs by sensor-driven addition of liquid sodium thiosulfate. The treatment system operates in batch mode and discharges approximately 200 gallons over a 26 minute period with an hour before the next discharge cycle begins. Ten to thirteen batches are discharged in a typical day. The Average Dry Weather Design Flow (ADWDF) is 0.0036 MGD. In the event of an overflow, wastewater would leave the system and enter the adjacent wetlands.

The final effluent is pumped to either Outfall 001 or 002. Outfall 001 discharges into Smith Creek, a small creek, which flows into Boquist Slough, which flows into the Wilson River and subsequently to Tillamook Bay. Although the Wilson River is tidally influenced, the outfall location is entirely vegetated with upland plants not known to tolerate salinity. Thus, the receiving stream is freshwater. The permittee does not recycle any wastewater. Outfall 002 goes to a central distribution box to two subsurface drainfields.

Outfall 001 is a 3-inch pipe below grade from the treatment system to Smith Creek where it emerges. The end of pipe is exposed when it reaches Smith Creek, perpendicular to the direction of flow and just upstream of the culvert under Suppress Road. There is no diffuser or outlet device or structure. The current permit only allows discharge from Outfall 001 between Nov 1-Jun 30 when the dilution in Smith Creek is greater than 10. If the dilution in Smith Creek is less than 10 the permittee must use Outfall 002. Between Jul 1 – Oct 31 the permittee may not use Outfall 001 unless the drainfield fails to perform properly. In that case, the permittee may use Outfall 001 until the drainfield is repaired.

Outfall 002 consists of north and south drainfields plus the subsurface pipes connecting the septic tank and the distribution box. Outfall 002 is used when the dilution in Smith Creek is less than 10 to 1, or when the treatment system fails to achieve the limitations specified in the permit. The current permit does not contain any constraints on when Outfall 002 may be used. Prior permits did constrain the use of Outfall 002 to only during times when the Smith Creek dilution was less than 10 (at which times the use of Outfall 001 was required). While the use of Outfall 002 was rare in the past, over the last permit cycle the permittee has switched to primarily using Outfall 002 to discharge wastewater year-round. Because the permittee is now discharging exclusively to Outfall 002, potential impacts to groundwater have been increased. To ensure that adverse groundwater impacts are avoided, DEQ is proposing additional limitations to drainfield use and adding WPCF Onsite permit conditions (discussed in Section 3.6). Because the permittee does not use the drainfield year-round, it will be included in this permit instead of a separate WPCF Onsite permit.

Since the last permit renewal, the Supreme Court released a final verdict for the *County of Maui v Hawaii Wildlife Fund et al.* case. This case requires an NPDES permit to be protective of surface water quality in the event a permittee has a functional equivalent of a direct discharge to a navigable water. Due to the proximity of the Tillamook RV Park drainfield to Smith Creek, there was a question as to whether Outfall 002 could be a functional equivalent of a direct discharge. Smith Creek is a small stream. Permittee collected flow data over the last 3 years indicates that it regularly goes dry during the summer and that the 90th percentile of stream flow is 15 cfs (maximum stream flow of 28 cfs). The Maui Decision applies to navigable waters only. Because Smith Creek has such low flows, it is not a navigable water and therefore is not covered under the Maui Decision. The closest navigable water is the Wilson River, which is half a mile away. The soils in the area range from silt to clay and have low to moderate hydraulic conductivity (0.06 to 0.57 in/hr, USGS soil survey). Any effluent discharged out of Outfall 002 would take anywhere from 2 years to 57 years to reach the Wilson River assuming it took a straight path to the river based on the USGS hydraulic conductivity estimates. Given the small amounts of effluent discharged, it is extremely unlikely that the effluent from Outfall 002 is a functional equivalent of a direct discharge under the Maui Decision.

With the new permit application, the permittee noted significant updates to the chlorination and dechlorination systems and as a result have requested that UV disinfection be removed from the permit. The permittee will retain the UV system but will not use it for disinfection. The permittee also noted in the application that since the last permit renewal the following upgrades were completed:

1. Computerization of the waste treatment plant processing functions to fine tune treatment times.
2. Addition of an aluminum chlorohydrate (Nalco 8187) coagulant into the stream flow from the aeration tank to the clarifier/settling tank to improve TSS results.
3. Removal of original tablet chlorination system and replacement with automated pumping system.
4. Addition of pump in main wet well to properly mix influent prior to aeration tank.
5. Repair and maintenance of the collection system to prevent inflow and infiltration.

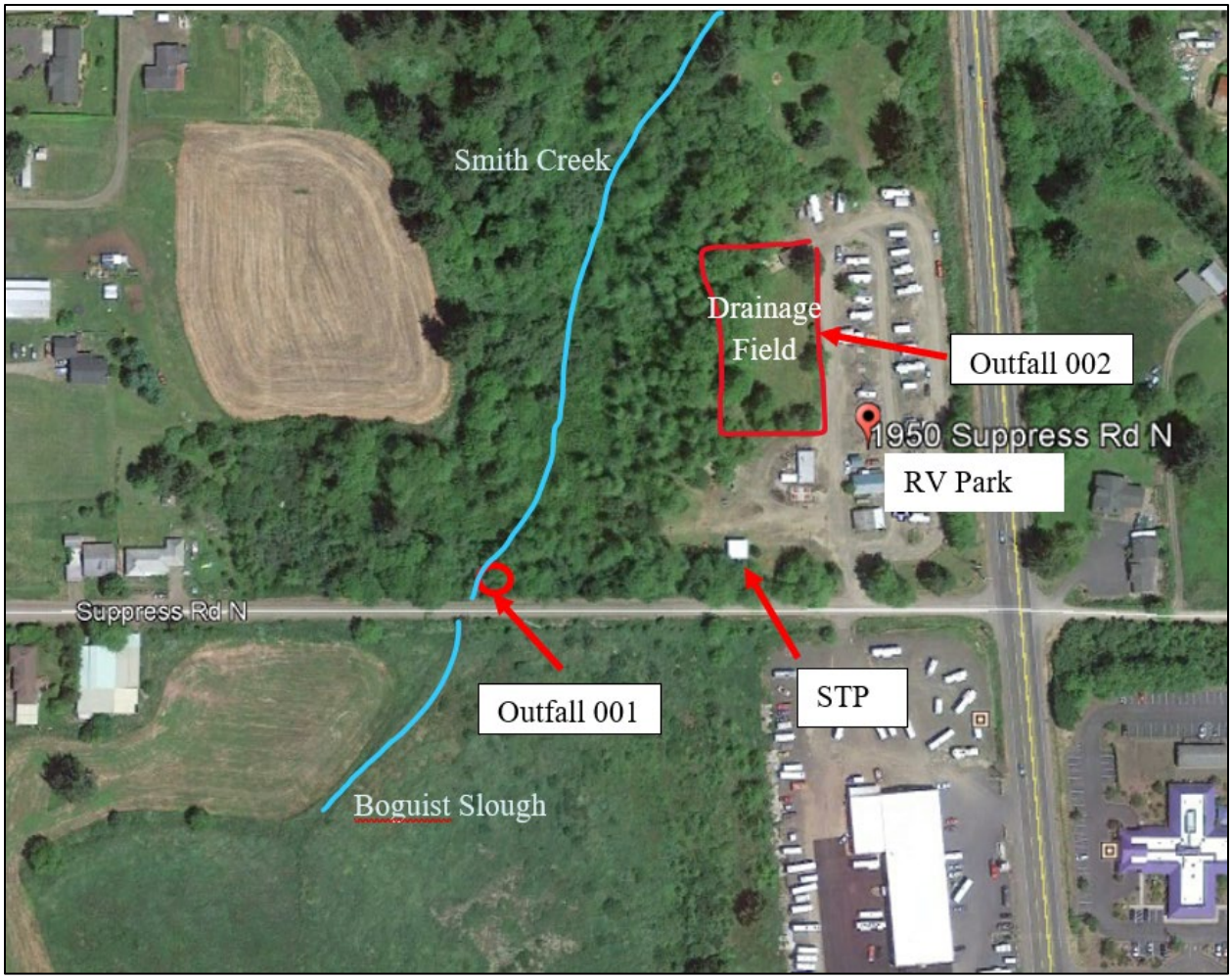

Figure 2-1: Site Map

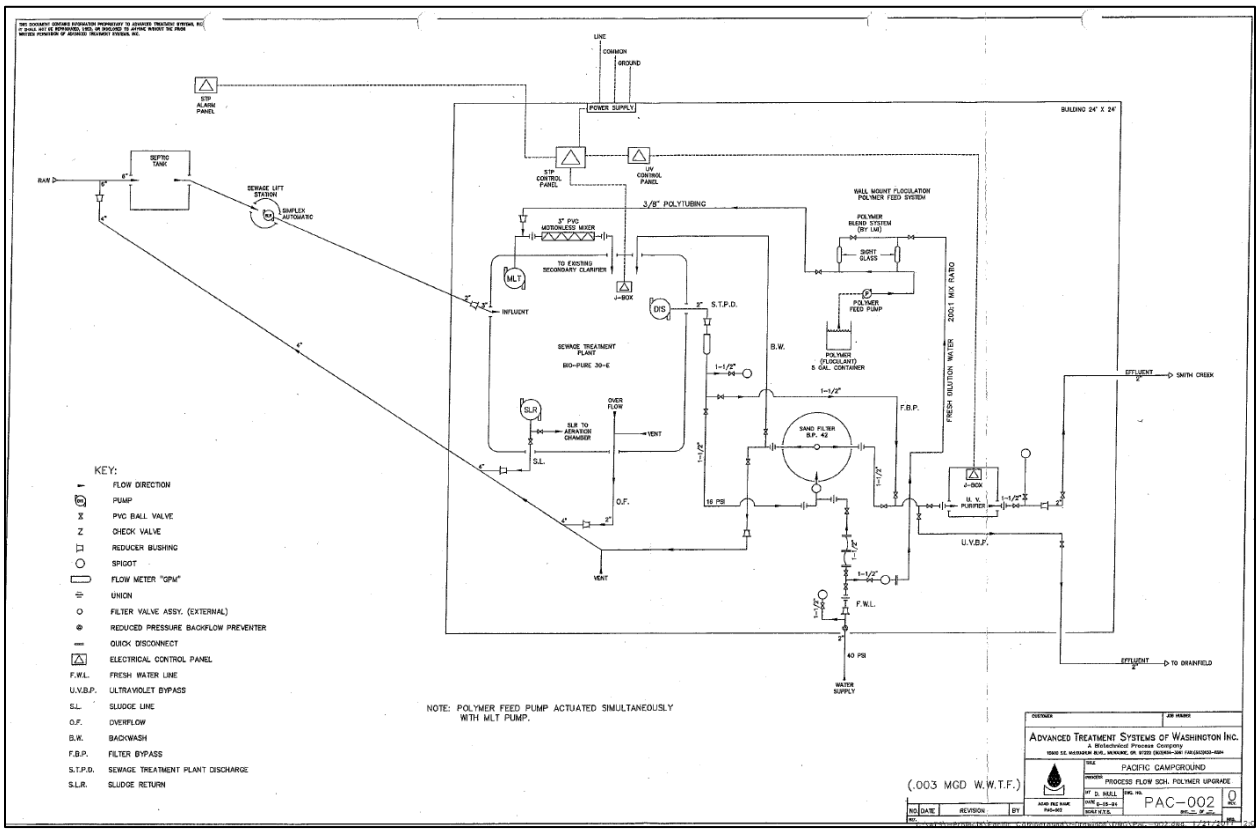

Figure 2-2: Line Drawing of Treatment System

Table 2-1: List of Outfalls

Outfall Number	Type of Waste	Lat/Long	Design Flow[1] (mgd)	Existing Flow[2] (mgd)
001 (Smith Creek)	Domestic Wastewater	45.486619/ -123.848209	0.0036	0.0005
002 (Drainfield)	Domestic Wastewater	45.487254/ -123.846800	Unknown	0.002

1. Design Flow = design average dry weather flow
2. Existing Flow = average year-round flow

2.2 Compliance History

Since the last permit issuance in 2018 the permittee received two pre-enforcement notification letters. The first was issued Nov 22, 2019, and included multiple permit violations (failure to report data) and exceedances of limits for chlorine, TSS, BOD, and pH between Dec 2018 and Sept 2019. The second letter was issued Apr 18, 2020, and included exceedances of limits for BOD, TSS, *E. coli* and Fecal Coliforms between Nov 2019 and March 2020. The last permit inspection was performed September 12, 2023. The following violations were noted:

- Permittee did not have an Emergency Response and Public Notification Plan
- Permittee needed to consolidate manuals, plans, and procedures into proper Operations and Maintenance Plan and Quality Assurance Project Plan
- Some Equipment was delinquent on annual calibration

The permittee immediately began resolving these violations after the permit inspection.

2.3 Stormwater

Stormwater is not addressed in this permit. General NPDES permits for stormwater are not required for facilities with a design flow of less than 1 MGD.

2.4 Industrial Pretreatment

The permittee does not have a DEQ-approved industrial pretreatment program. Based on current information, no industrial pretreatment program is needed.

2.5 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 tables below show the limits contained in the existing permit.

Table 3-1: Existing Effluent Limits Outfall 001

Parameter	Units	Average Monthly	Average Weekly	Daily Maximum
Effluent Flow (July 1 – Oct 31)	MGD	No discharge (Daily max limit = 0 MGD)*		
BOD_5 (November 1 to June 30)	mg/L	10	15	
	lb/day	0.25	0.38	0.5

Parameter	Units	Average Monthly	Average Weekly	Daily Maximum
TSS (November 1 – June 30)	mg/L	10	15	
	lb/day	0.25	0.38	0.5
*Note: The permittee may discharge to Outfall 001 outside the discharge season (Nov 1 – June 30) if the permittee meets all conditions specified in Schedule D7.				

Table 3-2: Existing Effluent Limits "Table A2: Other Limits"

Parameter Nov 1 – June 30 (except as noted)	Limits/Description
Total Residual Chlorine	0.02 mg/L Daily Maximum and Monthly Average. DEQ has established a minimum Quantitation Limit of 0.05 mg/L for Total Residual Chlorine. In cases where the monthly average or daily maximum limit for Total Residual Chlorine is lower than the Quantitation Limit, DEQ will use the reported Quantitation Limit as the compliance evaluation level.
Temperature	The seven-day rolling average effluent temperature must not exceed 77ºF (25ºC).
pH	Must be within the range 6.6 – 8.6
Removal Efficiency for BOD and TSS	≥85%
Dilution (See note a.)	The facility must divert the treated effluent to Outfall 002 when dilution is less than 10.
Fecal Coliform Bacteria (Nov 1- Apr 30)	Monthly geometric mean must not exceed 46 organisms per 100 ml. No single sample may exceed 140 organisms per 100 ml. If a single sample exceeds 140 organisms per 100 mL, then five consecutive re-samples may be taken at four-hour intervals, beginning within 48 hours after the original sample was taken. If the geometric mean of the five re-samples is less than or equal to 46 organisms per 100 mL, a violation is not triggered.
Fecal Coliform Bacteria (May 1 – June 30)	Monthly geometric mean must not exceed 74 organisms per 100 ml. No single sample may exceed 226 organisms per 100 ml. If a single sample exceeds 226 organisms per 100 mL, then five consecutive re-samples may be taken at four-hour intervals, beginning within 48 hours after the original sample was taken. If the geometric mean of the five re-samples is less than or equal to 74 organisms per 100 mL, a violation is not triggered.

E. Coli Bacteria	Monthly geometric mean must not exceed 126 organisms per 100 ml. Any single sample must not exceed 406 organisms per 100 ml. If a single sample exceeds 126 organisms per 100 mL, then five consecutive re-samples may be taken at four-hour intervals, beginning within 48 hours after the original sample was taken. If the geometric mean of the five re-samples is less than or equal to 126 organisms per 100 mL, a violation is not triggered.
Note: a. Dilution = $(Q_s + Q_e)/Q_e \geq 10$, where: Q_s = Smith Creek flow, per Schedule B.4. Q_e = Effluent flow, per schedule B, Table B2.	

The permit also contained the following clause for groundwater protection (Schedule A3):

> The permittee may not conduct any activities that could cause an adverse impact on existing or potential beneficial groundwater uses. Facility personnel must manage and dispose all wastewater and process related residuals to prevent violating the Groundwater Quality Protection Rules (OAR Chapter 340, Division 40).

The Fecal Coliform Bacteria limits in the existing permit contained a resampling provision if a single sample exceeded either 226 organisms per 100 mL during summer or 140 organisms per 100 mL during fall/winter/spring. These provisions are only allowed for *E. coli* (OAR 340-041-0009(6)(b)(C) or for total coliforms for recycled water (OAR 340-041-0009(6)(c)(C)), not for Fecal Coliform. The TMDL from which the Fecal Coliform Bacteria limits derive does not contain a resampling provision (see section 3.3.3). Therefore, these provisions will be removed in the new permit.

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. DEQ also uses best professional judgement, as allowed under federal rule (40 CFR 125.3), to apply the secondary treatment standards as TBELs for domestic wastewater treatment facilities that are not publicly owned.

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 3-3: 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	20 mg/L during periods of low stream flow (approx. April 1- Oct 31) or equivalent control Minimum of secondary treatment or equivalent control during periods of high stream flow (approx. Nov. 1- April 30)
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

Federal regulations (40 CFR 133.103(d)) include special considerations for less concentrated influent wastewater from separate sewers. The rule allows substitution of either a lower percent removal requirement or a mass loading limit for the percent removal requirements provided that the permittee satisfactorily demonstrates that:

- The treatment works is consistently meeting, or will consistently meet, its permit effluent concentration limits, but its percent removal requirements cannot be met due to less concentrated influent wastewater;
- To meet the percent removal requirements, the treatment works would have to achieve significantly more stringent limits (defined as at least 5 mg/l more stringent than the otherwise applicable concentration-based limits) than would otherwise be required by the concentration-based standards; and,
- The less concentrated influent wastewater is not the result of excessive infiltration and inflow (I/I).

DEQ has determined the facility does not meet all three conditions as the permittee is not consistently meeting the permit effluent concentration limits and is therefore not eligible for lower percent removal requirements.

Oregon Administrative Rules establish minimum design criteria for domestic treatment facilities. OAR 340-041-0007(15)(a)(A)(i) states that the ratio of BOD_5 concentration to dilution may not exceed 1 for design criteria. Using this rule, combined with the permit requirement that discharge is only allowed when the available dilution in Smith Creek is at least 10, DEQ set the monthly average concentration limits in the current permit at 10 mg/L and the weekly average concentration limits to 15 mg/L for both BOD_5 and TSS in prior permits.

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). The basin-specific design criteria included in the table above apply to new or expanded facilities (after June 30, 1992). This facility is not new or expanded, so these criteria do not apply. For any facility that has not expanded their average dry weather treatment capacity after June 30, 1992, OAR 340-041-0061(9)(a) requires that the mass load limits be calculated using the following equations:

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 average dry weather flow (DADWF) or the design average wet weather flow (DAWWF)

OAR 340-041-0061(9)(a)(C) allows an exception to the daily maximum mass load when the daily flow exceeds the lesser hydraulic capacity of the secondary treatment portion of the facility or twice the design average dry weather flow, the daily mass load limit does not apply.

Table 3-4: Design Flows and Concentrations Limits

Season	Design Flow (mgd)	Monthly TSS Concentration Limit (mg/L)	Monthly BOD_5 Concentration Limit (mg/L)
Dry Weather	0.003	10	10
Wet Weather	0.003	10	10
Design flow comments: Dry and wet weather design flow based on ADWDF of 0.003 MGD used in previous permit. Permittee reported a design flow of 0.0036 MGD.			

Mass Load Calculations:

Monthly Average: 0.003 mgd x 10 mg/L x 8.34 = 0.25 lbs/day

Weekly Average: 0.25 lbs/day monthly average x 1.5 = 0.375 lbs/day (0.38 lbs/day rounded to two significant figures)

Daily Maximum: 0.25 lbs/day monthly average x 2 = 0.5 lbs/day

The proposed BOD_5 and TSS limits are listed in the following table.

Table 3-5: Technology Based Effluent Limits Outfall 001

Parameter	Units	Average Monthly	Average Weekly	Daily Maximum
BOD_5 (Nov 1 to May 31)	mg/L	10	15	NA
	lbs/day	0.25	0.38	0.5
	% removal	85	NA	NA
TSS (Nov 1 to May 31)	mg/L	10	15	NA
	lbs/day	0.25	0.38	0.5
	% removal	85	NA	NA

It should be noted in the past an ADWDF of 0.003 MGD was used to calculate the mass loads despite the permittee reporting an ADWDF of 0.0036 MGD. Due to antidegradation requirements, if the permittee wishes to have increased mass loads based on the 0.0036 MGD ADWDF, the permittee must submit an antidegradation analysis with a request for a load increase. This can be done as a permit modification request or along with the permit renewal application.

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 Smith Creek These uses are listed in OAR-340-041-0230 for the North Coast Basin.

- Public and private domestic water supply
- Industrial water supply
- Irrigation and livestock watering
- Fish and aquatic life (including salmonid rearing, migration, and spawning)
- Wildlife and hunting
- Fishing
- Boating
- Water contact recreation
- Aesthetic quality

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. The table also lists any parameters with a TMDL wasteload allocation assigned to the facility (Category 4).

Table 3-6: 303(d) and TMDL Parameters

Water Quality Limited Parameters (Category 5)	
AU ID:	OR_WS_171002030508_05_106193
AU Name:	HUC12 Name: Lower Wilson River
AU Status:	Impaired
Year Listed	2018
Year Last Assessed	2018
303d Parameters (Category 5)	BioCriteria
TMDL Parameters (Category 4)	
Bacteria, Temperature	

3.3.3 TMDL Wasteload Allocations

DEQ issued a TMDL for the Tillamook Bay Watershed in 2001. WLAs from this TMDL that are applicable to the permittee are listed in the following table. It should be noted that the TMDL calls Tillamook RV Park by its former name, Pacific Campground

Table 3-7: Applicable WLAs

Parameter	WLA	Time Period
Temperature	Static and flow based Wasteload Allocations (see discussion in Section 3.3.7)	Year Round
Fecal Coliform Bacteria	Geometric Mean: 74 organisms per 100 ml 90th Percentile: 226 organisms per 100 ml	Summer
Fecal Coliform Bacteria	Geometric Mean: 46 organisms per 100 ml 90th Percentile: 140 organisms per 100 ml	Fall/Winter/Spring

The bacteria WLA will be applied as a Fecal Coliform limit where the monthly geometric mean may not exceed the specified Geometric Mean WLA and no single sample may exceed the 90th percentile WLA. The summer period will be June 1 through Sept 30 and the Fall/Winter/Spring period will be implemented October 1 – May 31. This is to align with the seasonal definitions outlined in the TMDL (section 3.2.5.4). Because the permittee is only allowed to discharge to

Smith Creek through Outfall 001 on an emergency basis during the summer, the limits in the permit will be specified throughout the year so that the appropriate WLA can be applied.

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 3-8: Domestic Toxic Pollutants of Concern

Flow Rate	Pollutants
< 0.1 mgd	Total Residual Chlorine

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

Table 3-9: Pollutants of Concern

Pollutant	How was pollutant identified?
pH	Effluent Monitoring
Temperature	Effluent Monitoring/TMDL
Fecal Coliform	Effluent Monitoring/TMDL
E. coli	Effluent Monitoring
Total Residual Chlorine	Effluent Monitoring

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 proposed mixing zone is described as follows:

> The mixing zone is defined as 50 percent of the Smith Creek flow and the zone of initial dilution is defined as 10 percent of the Smith Creek flow.

The description of the regulatory mixing zone has changed and does not include the downstream distance. The downstream distance was removed because it's not redundant to the restrictions based on the percentage of stream flow. Applying the percent of stream flow restriction is expected to protect the beneficial uses of the receiving stream and is in compliance with DEQ's mixing zone rules.

DEQ's mixing zone assessment is contained in a September 2023 internal memo that is part of the administrative record. The mixing zone and ZID dilutions are shown in the table below.

Table 3-10: Mixing Zone Dilutions

Location	Restriction	Dilution
ZID	10% of stream flow	2
Mixing Zone	50% of stream flow	6

3.3.6 pH

The pH criterion for this basin is 6.5 – 8.5 per OAR 340-041-0235. The previous permit contained a pH limit of 6.6 - 8.6. DEQ determined there is reasonable potential for the discharge to exceed the lower pH criterion at the edge of the mixing zone based on the current limits. The pH limits will be updated to 6.7– 8.6 and are WQBELs. A review of DMR data indicates that, based on past performance, the permittee should be able to comply with the limit upon permit issuance and no compliance schedule is needed. The following provides a summary of the data used for the analysis.

Table 3-11: pH Reasonable Potential Analysis

INPUT	Lower pH Criteria	Upper pH Criteria
1. Dilution at mixing zone boundary	6	6
2. Upstream characteristics		
a. Temperature (deg C)	16.0	7.3
b. pH	6.2	7.1
c. Alkalinity (mg CaCO3/L)	11.0	11.0
3. Effluent characteristics		
a. Temperature (° C)	17.8	7.3
b. pH (S.U.)	6.6	8.6
c. Alkalinity (mg CaCO3/L)	134.6	134.6
4. Applicable pH criteria	6.5	8.5
pH at mixing zone boundary	**6.4**	**7.8**
Is there reasonable potential?	**Yes**	**No**
Proposed effluent limits	**6.7**	**8.6**
Effluent data source: ICIS Summary Statistics April 2020-May 2023. Alkalinity defaults used.		
Ambient data source: Smith Creek data collected by permittee (Jan 2020-July 2023)		

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	Rearing/Migration 18ºC (OAR 340-041-0028(4)(c)
Applicable dates: Year-Round	
Salmon/Steelhead Spawning 13°C? OAR 340-041-0028(4)(a)	☐Yes ☒No
Applicable dates:	
WQ-limited?	☒Yes ☐No
TMDL wasteload allocation assigned?	☒Yes ☐No
Applicable dates: Year-Round	
TMDL based on natural conditions criterion?	☐Yes ☒No
Cold water summer protection criterion applies?	☐Yes ☒No
Cold water spawning protection applies?	☐Yes ☒No
Comments:	

There is no spawning use designated for Smith Creek, the Boguist Slough, nor the Wilson River where the Boguist Slough enters the Wilson River. Ambient data submitted by the permittee indicates that the temperature of Smith Creek exceeds the 18°C rearing and migration criterion during the summer, and therefore the cold water summer protection criterion does not apply.

In 2001, DEQ issued the Tillamook Bay Watershed TMDL, modified by addendum in 2006[1], to address temperature impairment in the basin. The TMDL addendum includes a wasteload allocation for the facility[2] which addresses the criterion for the Wilson River. The wasteload allocation given by the TMDL allows for an allowable effluent temperature of 25ºC when the Wilson River flow is 48 cfs and the effluent flow is 0.08 cfs (0.05 MGD). The TMDL addendum also includes equations to calculate applicable wasteload allocations for other river and effluent flow rates.[3] The current permit includes a limit of 25ºC (7-day rolling average).

The TMDL assessed the impacts of the discharge on the temperature in the Wilson River. To assess the potential impacts on the immediate receiving stream (Smith Creek), DEQ performed a reasonable potential analysis indicating that the discharge does not have a reasonable potential to exceed the applicable water quality standard (see Appendix A).

Based on these analyses, the existing permit's temperature limit, which is consistent with the TMDL requirements, is retained in the proposed permit.

Final effluent limits are listed in the following table.

[1] Addendum #1: Modifications to North Coast Basin Temperature Waste Load and Load Allocations for the Tillamook Bay Watershed Total Maximum Daily Load (TMDL) (June 2001). Prepared by DEQ. November 2006.
[2] At the time, the facility was named "Pacific Campground".
[3] TMDL Addendum#1, Revised Table 8.

Table 3-13: Temperature Criterion Effluent Limits

Effluent limit needed? ☒Yes ☐No
TMDL WLA Limit: 25°C as a 7 day rolling average
Applicable time period: Year-Round ☐NA
Temperature Criterion Limit: None
Applicable time period: Dates ☒NA
Comments:

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 13ºC or more for salmon and steelhead, and 9ºC or more for bull trout.

  The area is not designated as salmonid spawning habitat.

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

  Since the maximum effluent temperature of 18 °C is below 32°C, thermal shock caused by the discharge 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 25ºC 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 of 18 °C is below 25°C, thermal shock caused by the discharge is prevented or minimized.

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

  Since the maximum effluent temperature of 18 °C is below 21°C, thermal shock caused by the discharge is prevented or minimized.

Effluent limits needed to comply with the thermal plume requirements are shown in the following table.

Table 3-14: Thermal Plume Effluent Limit

Effluent limit needed? ☐Yes ☒No
Calculated limit: NA
Applicable timeframe: NA
Comments:

3.3.8 Bacteria

OAR 340-041-0009(6)(b) requires discharges of bacteria into freshwaters meet a monthly geometric mean of 126 *E. coli* per 100 mL, with no single sample exceeding 406 *E. coli* per 100 mL. If a single sample exceeds 406 *E. coli* per 100 mL, then the permittee may take five consecutive re-samples. If the geometric mean of the five re-samples is less than or equal to 126, a violation is not triggered. The re-sampling must be taken at four-hour intervals beginning within 28 hours after the original sample was taken. The following table includes the proposed permit limits and apply year-round.

Table 3-15: Proposed *E. coli* Limits

E. coli **(#/100 ml)**	**Geometric Mean**	**Maximum**
Existing Limit	126	406
Proposed Limit	126	406

The current permit contains limits for fecal coliform based on the 2001 TMDL. This TMDL addressed the fecal coliform water quality standard that was in place at the time of TMDL development. The fecal coliform standard has since been updated, and now includes a figure (OAR 340-041-0230, Figure 230E) that delineates locations in Tillamook Bay shellfish harvesting where coastal contact recreation and shellfish harvesting are designated beneficial uses. The locations for the shellfish harvesting use differ from those considered under the TMDL. Because of this difference, the TMDL wasteload allocation cannot be solely relied on to ensure compliance with the fecal coliform criteria at the designated shellfish harvesting location.

DEQ conducted a new analysis and determined that more stringent fecal coliform limits are required to ensure compliance with the fecal coliform water quality criteria (see Appendix B). The limits for fecal coliform are seasonal and are included in the table below. The statistics used for limit compliance have changed to align with the applicable rule.

Table 3-16: Proposed Fecal Coliform Limits

Fecal Coliform (#/100 ml)	Monthly Median	Not more than 10% of the samples may exceed	Timeframe
Existing Limit	74	226	May 1-June 30
Proposed Limit	25	77	June 1-Sept 30
Existing Limit	46	140	Nov 1-April 30
Proposed Limit	15	47	Oct 1-May 31

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 Residual Chlorine

The existing permit contains chlorine limits of 0.02 mg/L AML and MDL. The chlorine limits were evaluated using updated information to ensure that they remained protective of water quality criteria. There was no reasonable potential for the limits to exceed water quality criteria and will be retained in the new permit.

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 Groundwater

Outfall 002 discharges to a drainfield. The permittee is located in an area with a high water table with wetlands nearby. Groundwater could be affected by discharge through the subsurface drainfield. While past use of the drainfield was minimal, over the past permit cycle the drainfield has been used frequently. The configuration and design capacity of the drainfield is currently unknown. The increased use of the drainfield was allowed as the 2018 permit renewal did not include a condition from the 2011 permit that the drainfield could not be used "whenever Smith Creek flow is sufficient to provide 10:1 dilution and the treatment system is performing within the limitations applicable to Outfall 001". To ensure that the permit is protective of groundwater the limitations from the 2011 permit will be reinstated during the wet period of Nov 1-June 31. To ensure that the drainfield is properly permitted and maintained according to WPCF requirements, maximum daily effluent limits of BOD_5 and TSS of 20 mg/L, relevant schedule D operation and maintenance requirements will be included in the new permit. The permittee is currently unable to meet these limits, and therefore a compliance schedule will be included in the permit with interim BOD_5 and TSS limits of 50 mg/L (see section 6).

There are no other existing groundwater issues such as a cleanup or groundwater remediation project. The site is not located in a groundwater management area.

4. Schedule A: Other Limitations

4.1 Mixing Zone

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

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. The facility currently monitors Smith Creek ambient flow, temperature, pH, and alkalinity. As there was no other monitoring found on Smith Creek, this monitoring requirement will remain in the new permit.

6. Schedule C: Compliance Schedule

The proposed permit contains a new effluent limit for BOD_5 and TSS for Outfall 002. The facility is unable to meet these limits upon permit issuance. The proposed permit contains a compliance schedule that allows time for the permittee to make facility modifications in order to meet the new limits. This compliance schedule lays out a series of milestones which upon completion, will enable the permittee to meet the permit's water quality-based effluent limits.

The limits addressed in the schedule are new limits for a subsurface discharge. A compliance schedule is allowed according to OAR 340-040-0020 and OAR 340-041-0061(12). Discussions with the permittee indicate that they are looking into options for meeting the permit limits, including purchasing nearby land to build a new drainfield and also overhauling the current treatment facility. The permittee is required to submit a report on the viable options for meeting the limits, report on which option is selected, and obtain all necessary permits for construction. Interim limits of 50 mg/L for both BOD_5 and TSS, which the facility estimates they will be able to meet, are being implemented in the new permit and are more restrictive than what is in the current permit. The proposed compliance schedule requires the permittee to meet the final limits as soon as possible.

7. Schedule D: Special Conditions

The proposed permit contains the following special conditions. The conditions include the following:

7.1 Inflow and Infiltration

A requirement to submit an updated inflow and infiltration report in order to reduce groundwater and stormwater from entering the collection system.

7.2 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.

7.3 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.

7.4 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.

7.5 Hauled Waste Control Plan

The previous permit prohibited the permittee from accepting any waste that was not RV waste. This prohibition is carried over into the new permit.

7.6 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.

7.7 Outfall Inspection

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

7.8 Septic and Drainfield Provisions

Requirements that specify operation and maintenance of the septic and drainfield systems.

7.9 Ammonia Provision

Requirement that the permittee operate the facility in a manner to reduce Ammonia concentrations.

7.10 Flocculant Provision

Requirement that the permittee use minimum amount of flocculant feasible to maintain facility within TSS limits.

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: Temperature RPA

Stream Meets Water Quality Criterion (OAR 340-041-0028(4))

For situations where the criterion is met (the waterbody is not listed as impaired for temperature) - Analysis at Edge of Mixing Zone
Section 5.4 of the Temperature IMD

Facility Name:	Tillamook RV Park	**Date:**	9/15/2023
Applicable Criterion and Season:	**Rearing and Migration, 18 deg C. Year-round**		

Enter data into white cells below:

			Data Metric/Source
Mixing Zone Dilution =	6		RMZ Dilution
Ambient Temperature =	19	°C	Maximum recorded ambient temperature (permittee collected data 2020-2023)
Effluent Temperature =	18	°C	Maximum recorded effluent temperature (ICIS data 2020-2023)
Applicable Temperature Criterion =	18	°C	
Effluent Flow =		mgd	

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:
- Q_e = 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

ΔT at MZ edge=	**-0.2**	**°C**
Temperature at MZ edge=	**18.8**	**°C**

No Reasonable Potential

Thermal Load Limit = N/A Million Kcals (7-day Rolling Avg.)
(relative to the ambient temperature used above)

Note
This thermal load limit is the excess thermal load needed to increase the ambient temperature up to the criterion temperature. However, if the ambient temperature is less than 0.3°C below the criterion, then the thermal load limit is calculated as the excess thermal load necessary to increase the ambient temperature by 0.3°C (as directed by the IMD). Since the Thermal Load Limit above is the excess thermal load above the ambient temperature, compliance is evaluated using the usual equation to determine the actual load discharged, but using the ambient temperature as opposed to the criterion: ETL discharged = $(T_e - T_a)$*Qe*3.78541, where T_e is effluent temperature and T_a is the ambient temperature used above.

Figure A-1: Temperature RPA for Tillamook RV Park

Appendix B: Fecal Coliform Bacteria Limit Derivation

Background/General Discussion

The 2001 Tillamook Bay Watershed TMDL included fecal wasteload allocations for Tillamook RV Park (formerly Pacific Campground). These allocations addressed the beneficial use of shellfish harvesting within the Tillamook Bay, as designated at the time of TMDL development. At that time there was no specific map within DEQ's water quality rules delineating shellfish harvesting areas. The TMDL determined that the location of shellfish harvesting uses were at some distance downstream of the mouths of the rivers entering the bay. This allowed for dilution to be considered in the TMDL wasteload allocation development (see Section 3.2.7 of the TMDL). The TMDL also used estimates of instream and overland bacteria decay (or die off) in the development of allocations.

In 2016, Oregon's bacteria standards were updated to include figures explicitly delineating shellfish harvesting areas. Specifically, OAR 340-041-0230 Figure 230E was included designating shellfish harvesting areas in the Tillamook Bay. This figure indicates that the designated shellfish harvesting area in the bay is much closer to the mouth of the Trask River (and other rivers) than the location considered during TMDL development.

DEQ would typically rely on TMDL allocations to ensure discharges are not causing or contributing to exceedances criteria. However, because of this change in rule, the allocation to the city may not ensure compliance with the fecal criteria. In particular, the 3 to 1 dilution ratio used in the TMDL for allocation development was reconsidered. The approach used to address the instream decay of bacteria in the TMDL is not affected by this rule change since it only considered decay in the rivers, where there is no designated shellfish harvesting use.

Permit Limit Development

Since OAR 340-041-0230 Figure 230E designates shellfish harvesting as a use within Tillamook Bay near the mouth of the tributary rivers, the fecal coliform criteria are required to be addressed at these locations. These criteria are included in OAR 340-041-009(1)(c) and are a median concentration of 14 organisms per 100 mL and not more than ten percent of the samples may exceed 43 organisms per 100 mL.[4]

As noted above, the TMDL wasteload allocation for Tillamook RV Park was calculated using the dilution value of 3 to 1 that was expected to occur between the mouth of the Trask River and the shellfish harvesting area that was considered under the TMDL. Since the revised rule designates the bay near the mouth of the Trask to be a shellfish harvesting area, this dilution is no longer considered valid for derivation of Tillamook RV Park's fecal coliform limits. Where the TMDL targeted fecal coliform values of 42 (14 multiplied by the dilution of 3) and 129 (43 multiplied by the dilution of 3) at the mouth of the Trask, the new permit limits are based on targeting the criteria (14 and 43) at the river mouth.

The fecal coliform decay approach used in the TMDL is still considered valid and was used in limit development. These die-off values may be expressed as ratios of the TMDL wasteload allocations to the targeted values at the mouth of the river. Two die off ratios were derived for the discharge – one for the summer period and one for fall/winter/spring. This parallels the approach used in the TMDL. These ratios were calculated by dividing the TMDL wasteload allocations for the Tillamook RV Park (TMDL Table 18) by the fecal coliform values targeted by the TMDL at the mouth of the Trask River. These values are presented in the table below.

[4] The TMDL considered the geometric mean and the 90th percentile statistics as equivalent to the statistics in the rule.

Derivation of Decay Ratios Between Discharge Location and Mouth of Trask River				
Season	**Criterion**	**TMDL Target Fecal Coliform**	**TMDL Wasteload Allocation**	**Decay Ratio (allocation/target)**
Summer (May – Oct)	Median	42	74	1.8
	90th Percentile	129	226	1.8
Fall/Winter/Spring (Nov-Apr)	Median	42	46	1.1
	90th Percentile	129	140	1.1

The approach used to determine the new fecal coliform limits uses the decay ratios derived above but uses the fecal coliform criteria of 14 (median) and 43 (no more than 10%) as the targeted values for the mouth of the Trask River. The limits in the permit are expressed as a monthly median and a "not more than 10% of the samples may exceed" value.

These limits are presented in the table below.

Derivation of New Fecal Coliform Limits				
Season	**Criterion**	**TMDL Target Fecal Coliform**	**Decay Ratio (allocation/target)**	**New Fecal Coliform Limits**
Summer (May – Oct)	Monthly Median	14	1.8	25
	Not more than 10% of the samples may exceed	43	1.8	77
Fall/Winter/Spring (Nov – Apr)	Monthly Median	14	1.1	15
	Not more than 10% of the samples may exceed	43	1.1	47