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Wastewater Environmental Performance Standards 2025

Fact Sheet

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New **river and stream discharge** standards

	Units	Very low dilution	Low dilution	Moderate dilution	High dilution
Dilution ratio (D)	-	D < 10:1	10:1 ≤ D < 50:1	50:1 ≤ D < 250:1	D ≥ 250:1
Annual median $CBOD_5$	mg/L	5	10	15	20
90th percentile $CBOD_5$	mg/L	10	20	30	40
Annual median TSS	mg/L	5	10	15	30
90th percentile TSS	mg/L	10	20	30	60
90th percentile TAN	mg/L	1	1	3	25
Annual median TN*	mg/L	4	5	10	35
Annual median TP*	mg/L	0.5	1	5 (3)	10
90th percentile *E. coli*	cfu/100 mL	130	650 (1,300)	3,250 (6,500)	16,250 (32,500)

Values from consultation document in parentheses
New categories/metrics highlighted in pink

*see next slide for TN and TP limits for *hard-bottomed* rivers

Reference: Section 49

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TN and TP limits for **hard-bottomed rivers**

Other limits as shown on previous slide

Periphyton risk category*	**Units**	**Upper limit (annual median) by dilution ratio class**			
		Very low dilution	Low dilution	Moderate dilution	High dilution
Low risk	TN (mg/L)	4	5	10	35
	TP (mg/L)	0.5	1	3	10
Medium risk	TN (mg/L)	4	4	7	20
	TP (mg/L)	0.3	0.7	1	5
High risk	TN (mg/L)	4	4	4	10
	TP (mg/L)	0.25	0.5	0.5	1
Very high risk	TN (mg/L)	4	4	4	4
	TP (mg/L)	0.25	0.25	0.25	0.25

hard-bottomed river means a river in which, within 100 metres from a point of discharge, more than half of the substrate is made up of particles that are the same size as, or larger than, gravel

Reference: Sections 66 - 71

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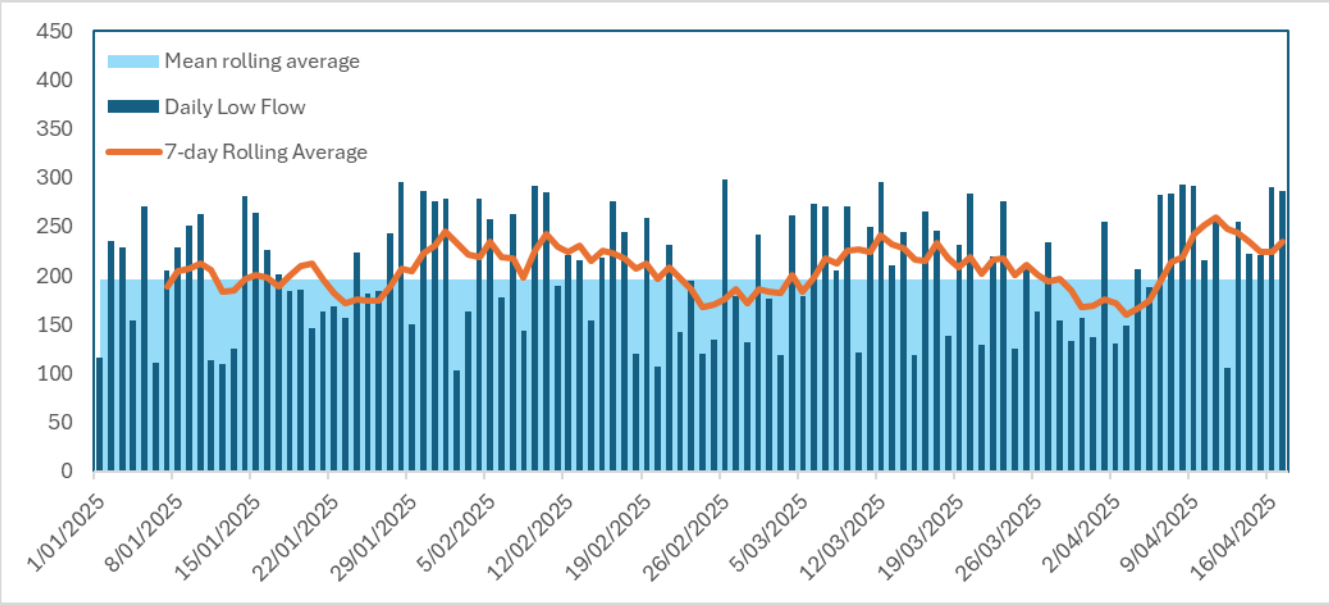
Dilution ratio class determination

$$Dilution\ ratio = \frac{Q_{effluent} + Q_{MALF}}{Q_{effluent}}$$

$Q_{effluent}$ is the highest annual median daily discharge volume of treated wastewater

Q_{MALF} (mean annual low flow) is the mean 7-day rolling average daily low flow over the previous 5 or more years



Example:

$$Q_{effluent} = 2{,}000\ m^3/d$$
$$Q_{MALF} = 200{,}000\ m^3/d$$

$$Dilution\ ratio = \frac{2{,}000 + 200{,}000}{2{,}000} = 101{:}1$$

Moderate dilution

Reference: Section 48

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Definitions of other water bodies

Lake means a body of fresh water which is entirely or nearly surrounded by land.

Estuary means a body of water are listed in Schedule 3 and includes only that part of the river that is within the coastal marine area.

Open ocean means water in the coastal marine area where the point of discharge is:

(a) is 500 metres or more seaward from the line of the mean high-water springs; and

(b) is covered by water that is more than 10 metres deep throughout the entire tidal cycle

High-energy coastal water means water in the coastal marine area which:

(a) is not in an estuary or the open ocean; and

(b) is exposed to large waves and long-period waves; and

(c) is not sheltered by a gulf, island, reef, harbour, or embayment

Low-energy coastal water means water in the coastal marine area which is not an estuary, the open ocean, or high-energy coastal water.

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New discharge standards for **lakes and coastal marine areas**

Parameter	Metric	Upper limit by receiving environment				
		Lakes	Estuaries	Low-energy coastal water	High-energy coastal water	Open ocean
$CBOD_5$	Annual median (mg/L)	15	20	30 (50)	50	-
$CBOD_5$	Annual 90th percentile (mg/L)	30	40	60	80	-
TSS	Annual median (mg/L)	15	25	30 (50)	50	100 (no limit)
TSS	Annual 90th percentile (mg/L)	30	50	60	80	150
TAN	Annual 90th percentile (mg/L)	3	15	20	35	50
TN	Annual median (mg/L)	10	10	10	50	-
TP	Annual median (mg/L)	3	10	10	-	-
E. coli	Annual 90th percentile (cfu/100 mL)	3,250 (6,500)				
Enterococci	Annual 90th percentile (cfu/100 mL)		2,000	4,000	8,000	40,000

Values from consultation document in parentheses (where changed)
New categories and metrics in pink

References: Sections 50, 52-55

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New discharge standards for **land application**

	Units	Class 1	Class 2	Class 3	Class 4
Slow-infiltration discharges (annual hydraulic load < 6 m)					
Total nitrogen	kg/ha/y	550 (500)	250	150	n/a
Total phosphorus	kg/ha/y	110 (75)	50	30	n/a
90th percentile *E. coli* concentration	cfu/100 mL	1* No limit**	1* 10,000** (2000)	1* 1,000**	n/a
Rapid-infiltration discharges (annual hydraulic load ≥ 6 m)					
Total nitrogen	kg/ha/y	20,000	10,000	4,000	n/a
Total phosphorus	kg/ha/y	7,000	3,000	1,000	n/a
90th percentile *E. coli* concentration	cfu/100 mL	100,000	10,000	1,000	n/a

* if there is public access to the site and the discharge is above ground
** if there is no public access to the site or the discharge is underground

No per hour/application hydraulic limits specified in the final version

Mixed Discharge Schemes **(Land and Water)**

- Specify the period for discharge to water in the consent, i.e. no discharge to water outside of this specified period.
- Meet discharge to water limits during the specified period, which is also used to calculate the dilution ratio.
- Meet discharge to land limits when land application is exercised.

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New discharge standards for **biosolids**

Reference: Schedule 2

(adopted from beneficial reuse guidelines)

Type of resource consent required is based on contaminant grade, stabilisation grade, and other requirements

Contaminant grade	**Stabilisation grade**	**Complies with all permitted activity requirements?***	**RMA designation**
1	A	Yes	Permitted activity
1	A	No	Controlled activity
1	B	Yes	Controlled activity
1	B	No	Discretionary activity
2	A or B	-	Discretionary activity

*includes provision that annual load should not result in 400 kg N/ha/24 months [13(1)(f)(i)]

and should not exceed 50 t biosolids/y [13(1)(f)(iii)]

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Contaminant Grade 1 limits (All other biosolids are Grade 2)

	Nitrogen	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	PFOS+PFHxS	PFOA
	% *	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg
Grade 1 limit	2%	30	6.5	1,500	750	300	7.5	135	1,250	31	81

* “calculated by volume” (w/V). Also, should be > 2%

Stabilisation Grade requirements (meets all)

Grade	Pest-reduction process required	Pathogen-reduction process required	Pathogen limits
A	Yes	Yes	Does not exceed all
B	Yes	No	Exceeds at least one

Pathogen	Limit
E. coli	100 MPN per g biosolids
Campylobacter	1 MPN per 25 g biosolids
Salmonella	2 MPN per g biosolids
Human adenovirus	1 plaque-forming unit per 0.25 g biosolids
Helminth ova	1 egg per 4 g biosolids

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Monitoring and reporting requirements

	Biosolids	Discharge to Water			Discharge to Land
		>10k People	1-10k People	<1k People	
Recording Frequency	Each application	Daily	Fortnightly	Quarterly	Daily(Volume, irrigation area) TBC (wastewater and groundwater TN, TP, E Coli.)
Monitoring	Time, location, volume and concentration	Treated wastewater concentration against limits			
Reporting	Annually	Monthly	Monthly	Quarterly	Quarterly (in 30 workdays)
Annual report	Yes, 30th November	Yes, no date specified, must be reviewed by independent person			Yes, no date specified, must be reviewed by independent person, in 60 workdays
Record keeping	5 years	10 years			10 years
Others	Management Plan				Management Plan O&M Manual

Small WWTP

- Daily average $cBOD_5$ < 85kg, or <1,000 people.
- No N&P limits, and more lenient $cBOD_5$ and TSS limits
- 3 Year transition when growing out of small WWTP.

Overflow and Bypass

- Controlled Activity
- Conditions to be imposed by consenting authorities

Lutra Wastewater Team Points of Contact:

David Romilly

CPEngNZ & CMEngNZ

Years of Experience: **23**

Position:

Chief Engineer

BSc (Environmental Systems Engineering), The Pennsylvania State University

David brings 23 years of professional experience in wastewater treatment, civil, environmental engineering and management. David has worked as a consultant and client in the United States overseeing three large wastewater treatment facilities and developing future biosolids strategies, as a consulting engineer in Australia performing duties as the Design Manager of a +$150M AUD biosolids treatment facility, and within New Zealand as part of a design and construct team on an approximate $100M NZD Thermal Dryer replacement project.

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Heiko Franz

CPEng

Years of Experience: **19**

Position:

Technical Director of Wastewater

BE Environmental Engineering, UNITEC Auckland

Heiko is the Technical Director Wastewater at Lutra. He helps the wastewater, and water teams and has a wide knowledge of treatment plant processes and process optimisation. Being in the process engineering industry for around 25 years, he brings both practical knowledge and experience to the team. He is also responsible for quality reviews, project delivery and management, client liaison and plant commissioning.

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