

Community liaison meeting – Christchurch ocean outfall (CRC051724)

Manager Operations – Adam Twose

Resource Consent Compliance Coordinator - Vanessa Irvine

Process Engineer – Lenka Silhankova

8 October 2025

Welcome & Housekeeping

- Thank you for joining us
- Housekeeping (Emergencies, assembly point, phones)
- Introductions
- Meeting Duration 1730 – 1830
- When to ask questions

CLG meeting for CRC051724

Topics we will cover:

- Performance of the ocean outfall
- Quality of the discharge
- Compliance with the resource consent conditions of CRC051724
- There will be opportunity to ask questions at the end and refer back through the slide pack
- This presentation will be sent out to all email address groups



Image: Ocean Outfall Pump Station & Northern Toe Drain

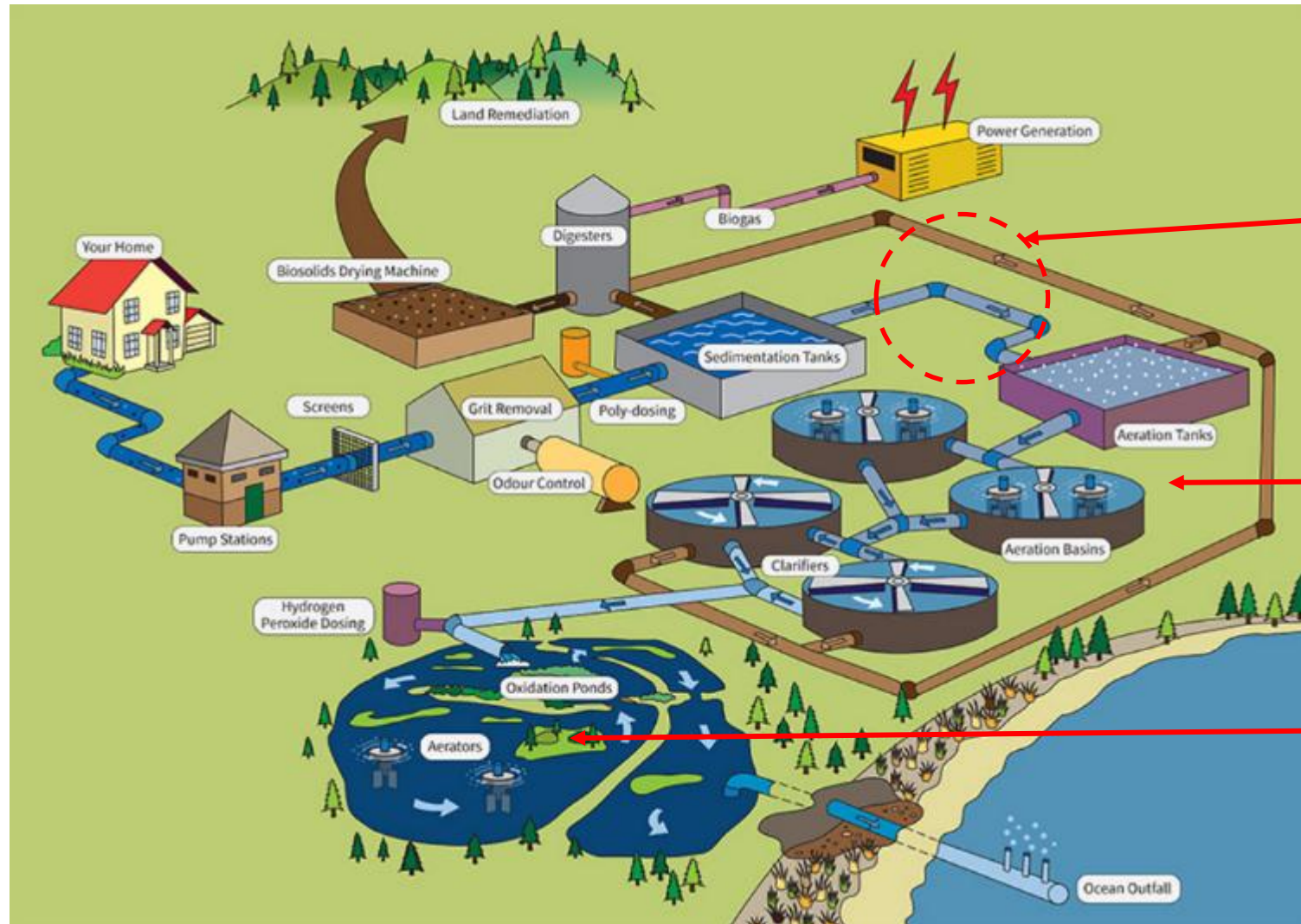
Out of Scope

- Updates on CWTP fire recovery plan and response report
- Midge control
- Anything that isn't water being discharged out of the Ocean Outfall pipe into the marine environment
- Full information on this can be found
 - <https://ccc.govt.nz/services/water-and-drainage/wastewater/treatment-plants/christchurch-wastewater-treatment-plant/wastewaterfire>



Image: Christchurch Wastewater Treatment Plant

Key components of the CWTP Temporary Solution



Trickling Filters Removed

Temporary Activated Sludge Plant Installed

Aerator Installed on Oxidation Pond 1

Current pond situation

- Pond 1 – oxidation pond with installed aerators
- Ponds are natural environment reacting on seasonal changes



Image: Pond 4 to 5 transfer structure



Image: Pond 1 aerators



Image: Ponds 1 & 2 timelapse

Current and anticipated compliance with the resource consents

- We are currently complying with all resource consent conditions of CRC051724
- We are forecasting that we should maintain compliance up to and including the commission of the new activated sludge reactor
- However, the temporary treatment systems we have installed are highly lean, with minimal redundancy and operating at its maximum capacity
- Maintaining compliance will be subject to no **significant** mechanical breakdowns
- We have shown there is some redundancy as compliance has been maintained during minor breakdowns (i.e. only losing one of the 24 aerators installed)



Image: Clarifier maintenance March 2025

Compliance review – CRC051724 - last year's annual report (FY25)

- This covers the period 1st July 2024 – 30th June 2025
- Will run through a high-level summary of all compliance against all consent conditions initially
- Then look at performance against each condition individually where there is routine monitoring



Image: Ocean Outfall Pipeline inspection February 2025

Conditions 2, 3, 4, 9, 10, 12 – FY 25

Consent Condition	Parameter	Condition Detail	Condition Timeframe	Comments	Overall
2	Discharge Content	Discharge is only treated wastewater from the CWTP	Continuous	Discharge is all and only from the CWTP ponds	😊
3	Discharge Volume	Recorded	Continuous	Future slide	😊
4	Discharge Rate	Recorded	Continuous	Future slide	😊
9	Outfall Maintenance	Routine maintenance of the discharge system completed and recorded	Continuous	Discharge system is the pump station, pipeline and diffuser outlets	😊
10	Outfall Condition	Visual inspection of outfall	Five yearly	Completed in March 2022	😊
12	Pumping Pressure for a given flow	Monitored at the pump station	Continuous	Print out available	😊

Key: 😊 Full Compliance 😐 Minor, Isolated or Risk of Non-Compliance 😞 Major or Consistent Non-Compliance

Conditions 15a and 16a – FY25

Consent Condition	Parameter	Condition Description	July & August 24	Sept and Oct 24	Nov and Dec 24	Jan & Feb 25	March & April 25	May & June 25	Overall
15a	Dissolved BOD ₅	Concentration does not exceed 20 g/m ³	😊	😊	😊	😊	😊	😊	😊
	Total Suspended Solids	Concentration does not exceed 50 g/m ³	😊	😊	😊	😞	😞	😊	😊
	Ammoniacal Nitrogen	Concentration does not exceed 40 g/m ³	😊	😊	😊	😊	😊	😊	😊

Key: 😊 0 to 2 Exceedances of Standard 😞 3 to 7 Exceedances of Standard 😡 Notification to ECAN required

Consent Condition	Parameter	Condition Description	July & August 24	Sept and Oct 24	Nov and Dec 24	Jan & Feb 25	March & April 25	May & June 25	Overall
16a	Faecal Coliforms	Concentration does not exceed 1,000(standard)	😊	😊	😊	😊	😊	😞	😊
		5,000(higher) MPN/100mL	😊	😊	😊	😊	😊	😞	😊
	Enterococci	Concentration does not exceed 1,500 MPN/100mL	😊	😊	😊	😊	😊	😞	😊

Key: 😊 0 Exceedances of Standard 😞 1 to 2 Exceedances of Standard 😡 Notification to ECAN required

Condition 18 – FY25

Consent Condition	Location	Parameter	Ju l 24	Aug 24	Se p 24	Oct 24	Nov 24	De c 24	Ja n 25	Feb 25	Mar 25	Apr 25	May 25	Jun 25	Ove rall
18	South New Brighton	Faecal Coliforms	😊	😊	😊	😊	😊	😊	😊	😞	😊	😞	😊	😊	😊
18	South New Brighton	Enterococci	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊
18	Sumner Beach	Faecal Coliforms	😊	😊	😊	😊	😊	😞	😊	😊	😞	😊	😊	😊	😊
18	Sumner Beach	Enterococci	😊	😊	😊	😊	😊	😊	😊	😊	😞	😊	😊	😊	😊
18	New Brighton Surf Club	Faecal Coliforms	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊
18	New Brighton Surf Club	Enterococci	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊

Key: 😊 No exceedances of Standard 😞 Isolated exceedances of Standard 🚫 Notification to ECAN required

Condition 22 – FY 25

Consent Condition	Parameter	Condition Timeframe	North of the centre	South of the centre	West of inshore end	East of inshore end	Overall
22a	Temperature	Two yearly	😊	😊	😊	😊	😊
	DO	Two yearly	😊	😊	😊	😊	😊
	Salinity	Two yearly	😊	😊	😊	😊	😊
	Total Suspended Solids	Two yearly	😊	😊	😊	😊	😊
	Nitrogen Oxides	Two yearly	😊	😊	😊	😊	😊
	Ammoniacal Nitrogen	Two yearly	😊	😊	😊	😊	😊
	Dissolved Reactive Phosphorus	Two yearly	😊	😊	😊	😊	😊
	Chlorophyll-a	Two yearly	😊	😊	😊	😊	😊
	Trace Metals (arsenic, cadmium, copper, chromium, lead, nickel and zinc)	Two yearly	😊	😊	😊	😊	😊
	Faecal Coliforms	Two yearly	😊	😊	😊	😊	😊
	Enterococci	Two yearly	😊	😊	😊	😊	😊
	Phytoplankton Species	Two yearly	😊	😊	😊	😊	😊



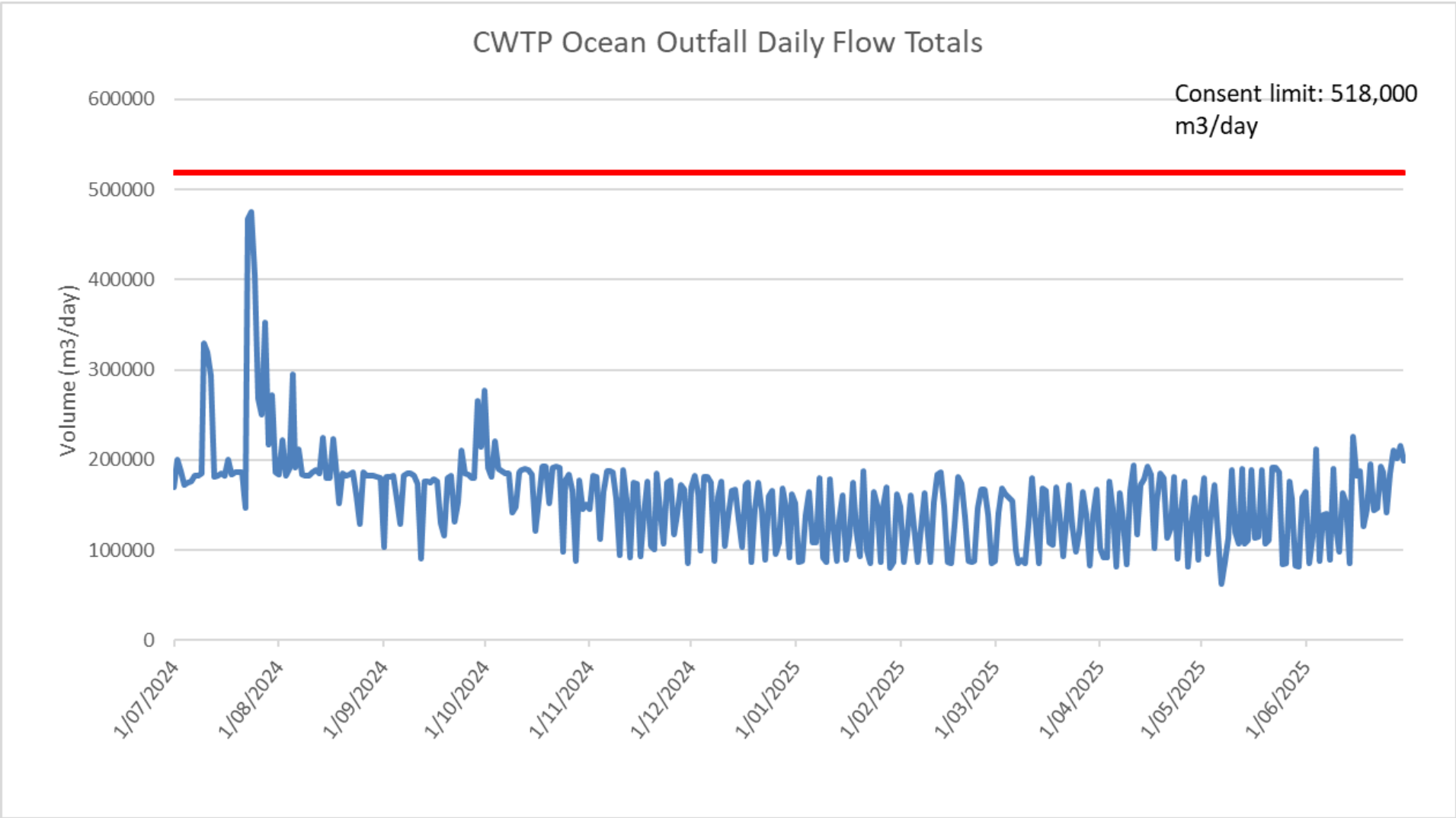
Conditions 23 to 36 – FY24

Table 2.3.2 Receiving Environment Monitoring Consent Compliance Jul 2024- Jun 2025

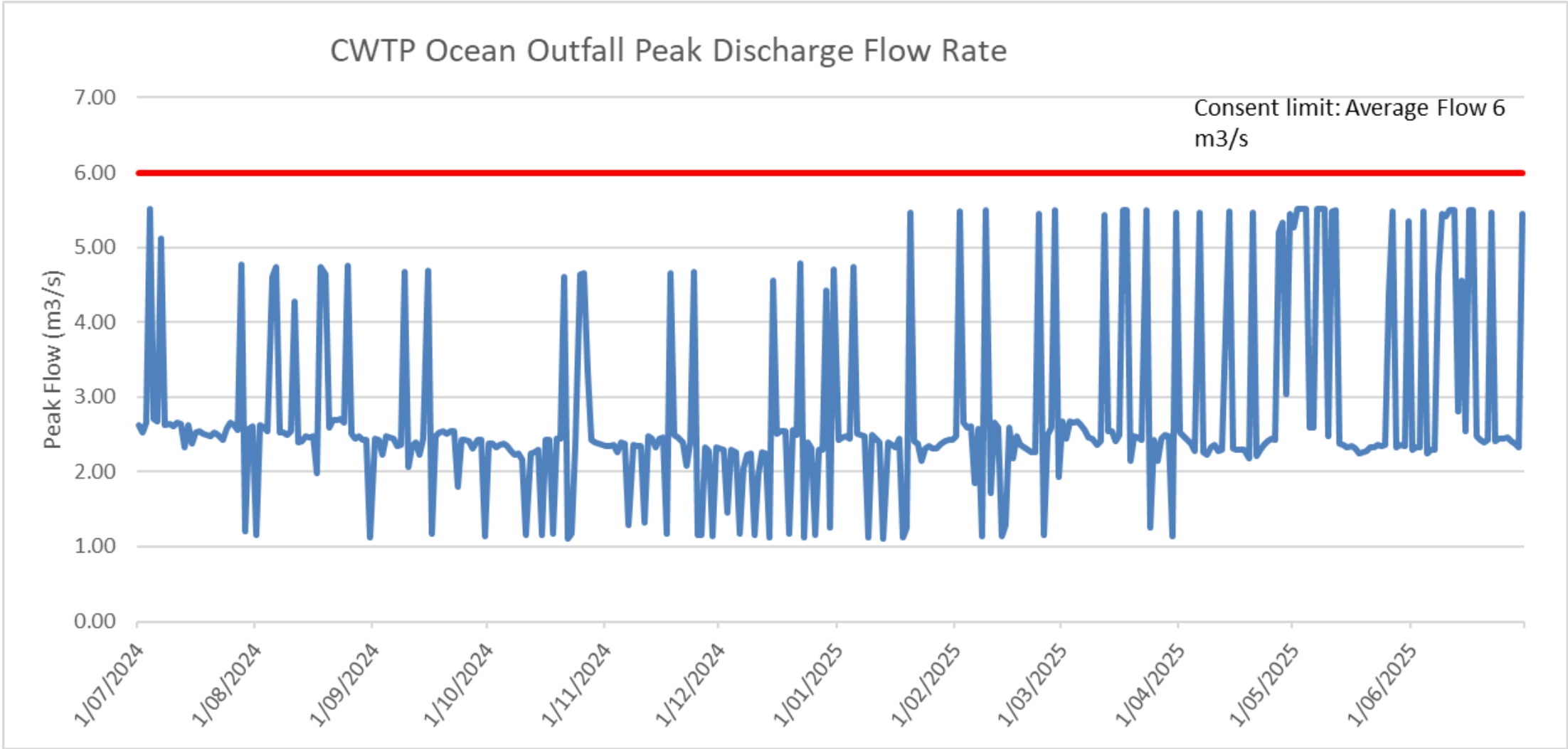
Consent Condition	Parameter	Frequency	Compliance Condition	Grade
23	Marine Sediments	5-yearly	Done 2022, next due 2027	😊
25	Benthic Invertebrates	5-yearly	Done 2022, next due 2027	😊
26	Epibenthic Fauna	5-yearly	Done 2022, next due 2027	😊
27	Shellfish/Tuatua	Ceased	Complied	😊
29	Complaints	As required	Recorded and reported	😊
31	Annual Report	Annually	Report and information lodged with ECan	😊
32	Quarterly Report	Quarterly	Report and information lodged with ECan	😊
34	Management Plan	4 Years post commissioning	Report and information lodged with ECan – done March 2012 - 12/140121	😊
36	Community Liaison Group	Annually	Scheduled for 8/10/2025	😊

Key: 😊 Full Compliance 😐 Minor, Isolated or Risk of Non-Compliance 😞 Major or Consistent Non-Compliance

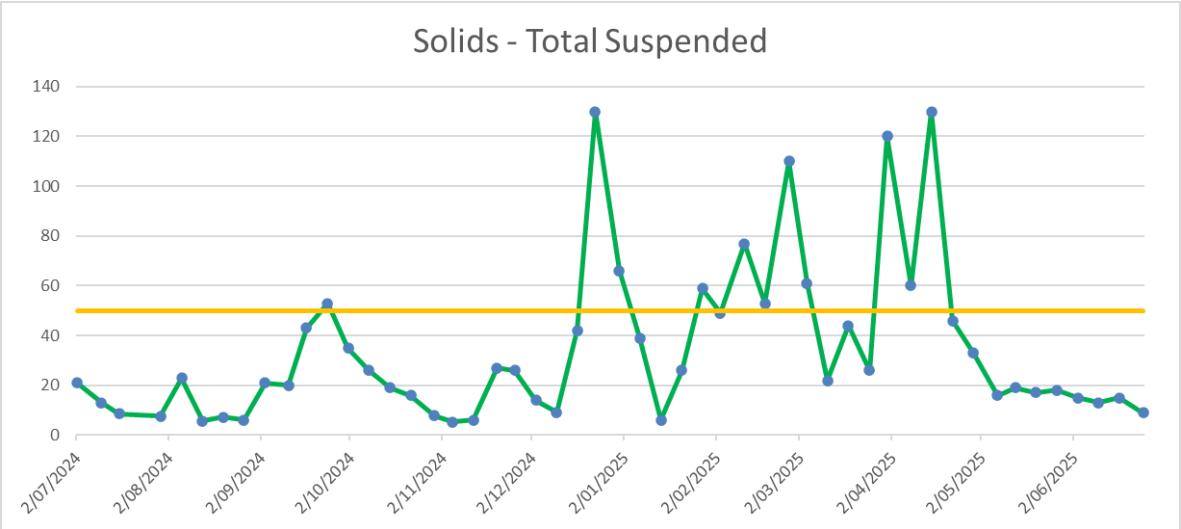
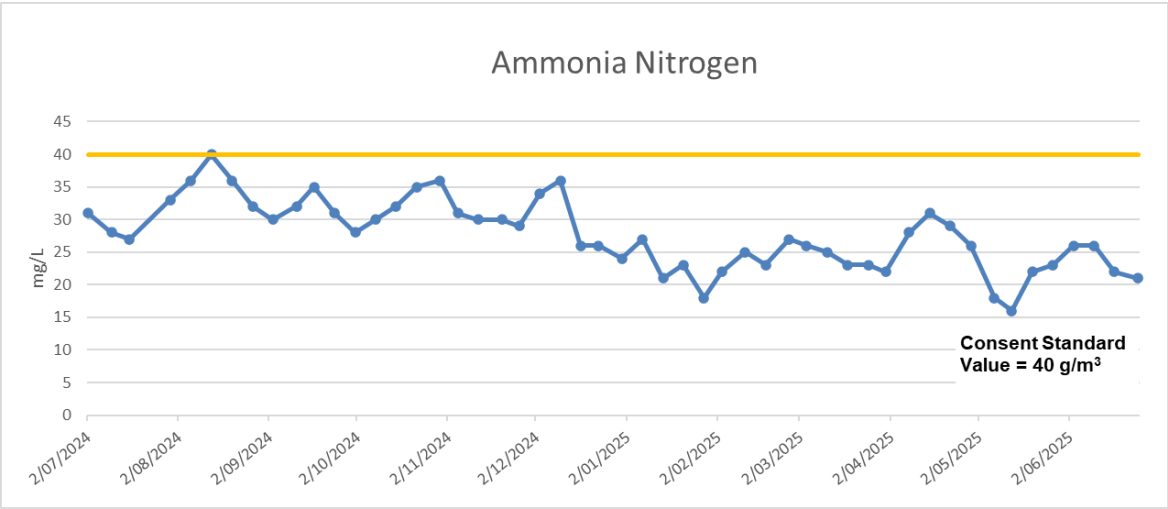
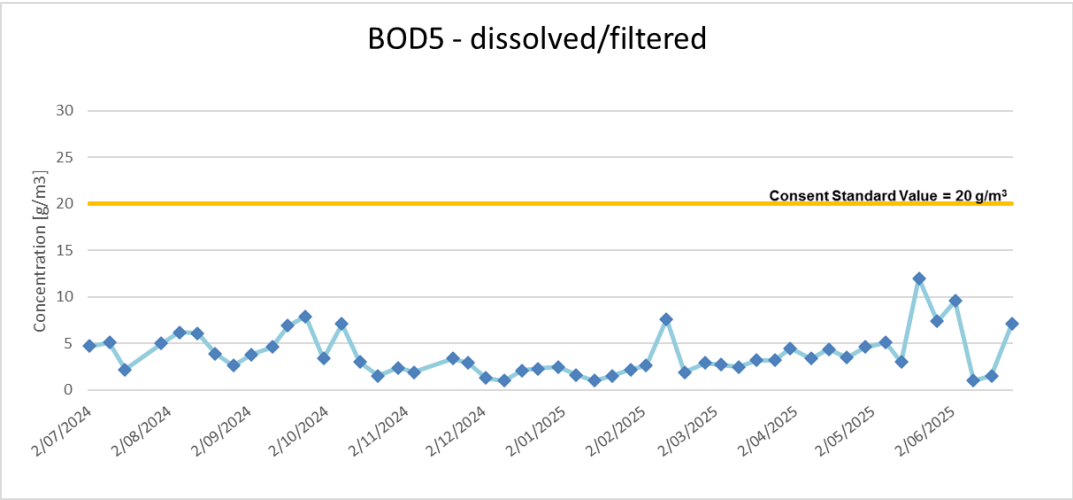
Condition 3 – discharge volume – FY25



Condition 4 – discharge flow rate - FY25



Condition 13c & 15a – Weekly Monitoring - FY 25



TSS vs algae growth

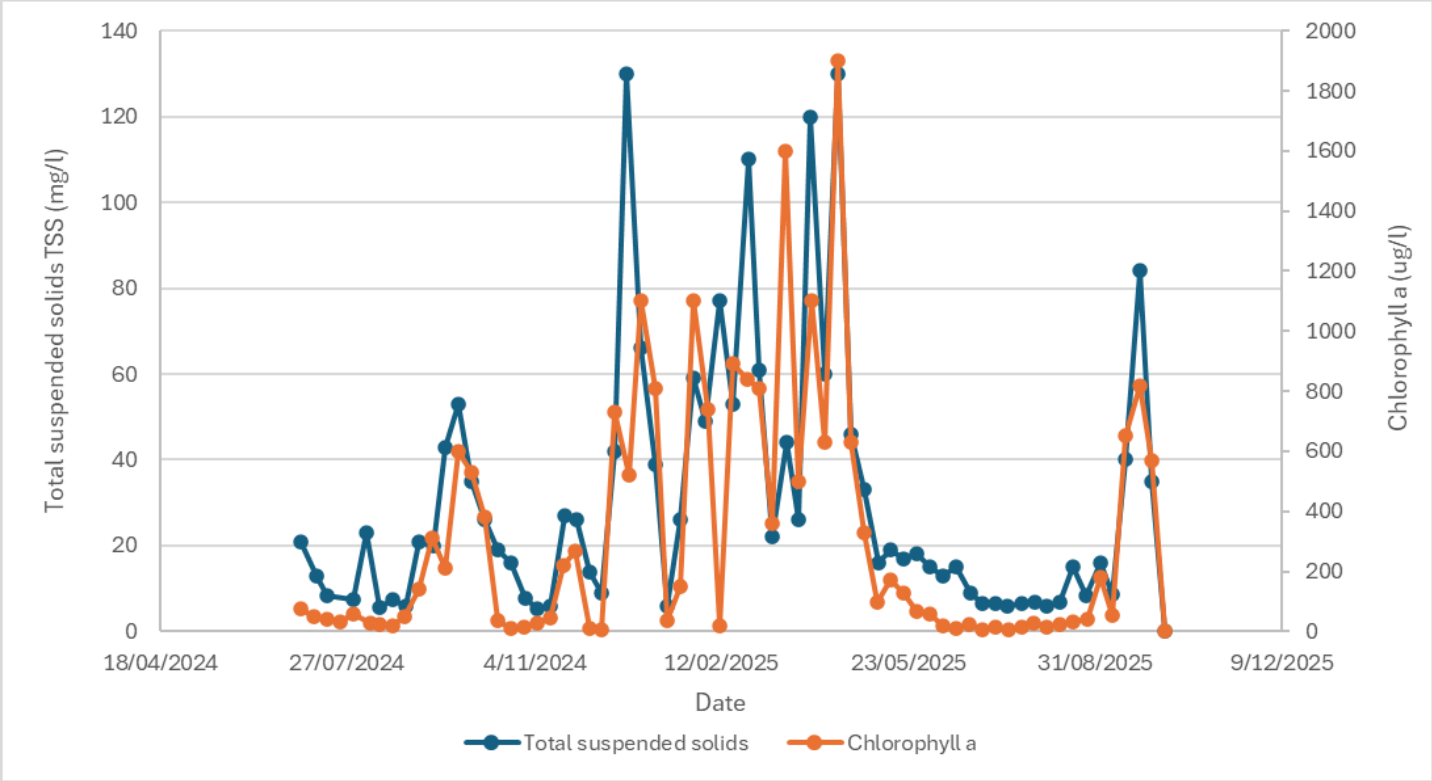
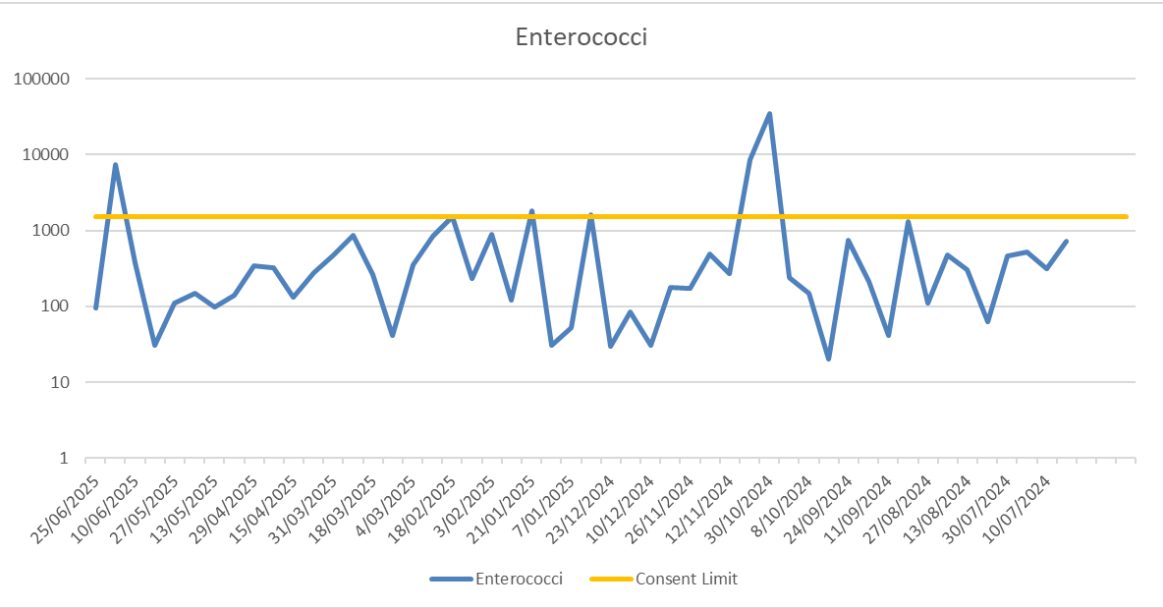
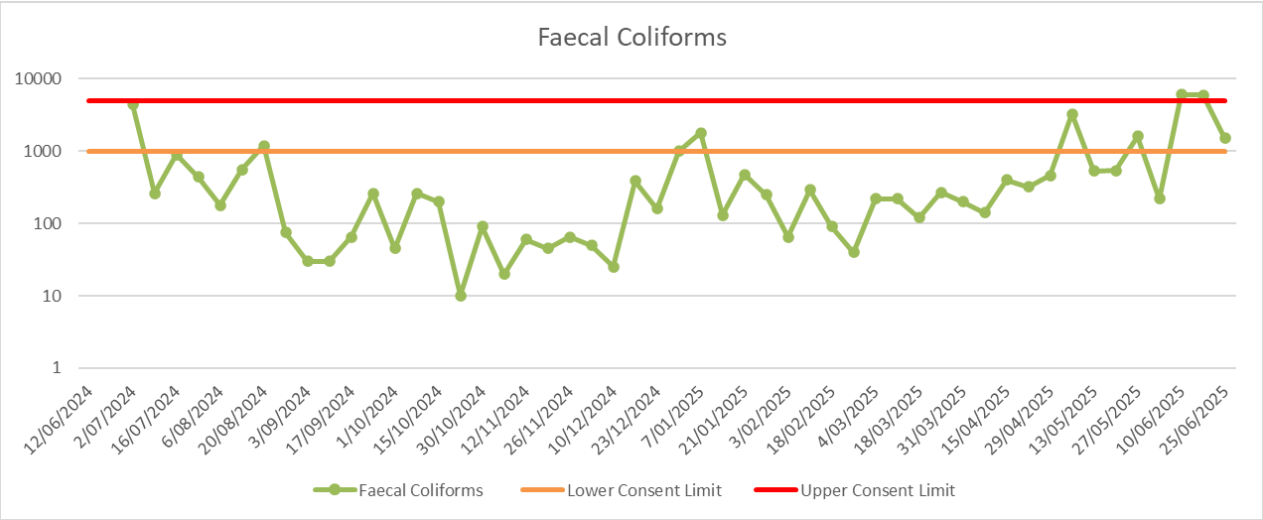


Image: Close up of pond algae

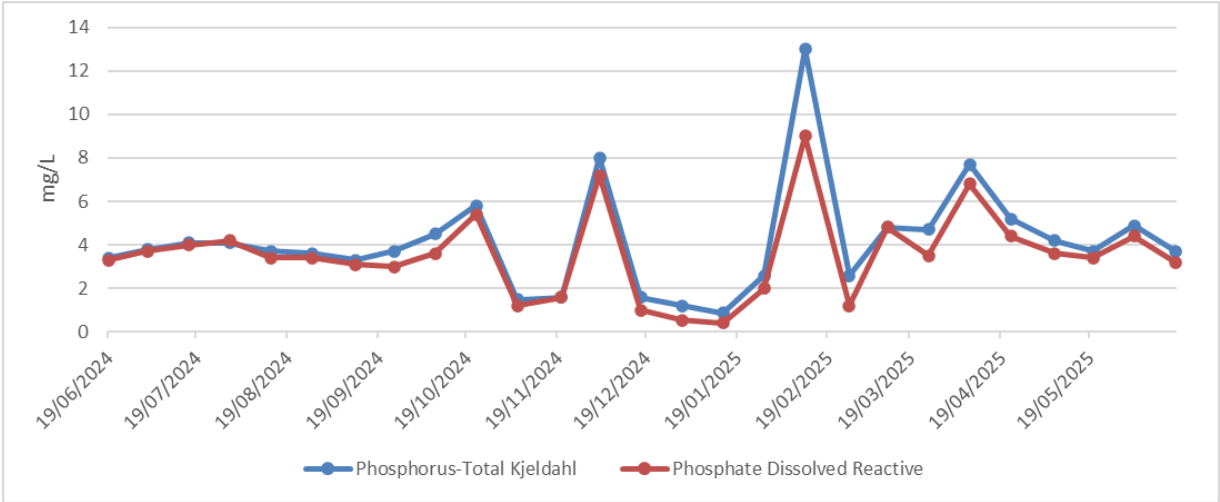
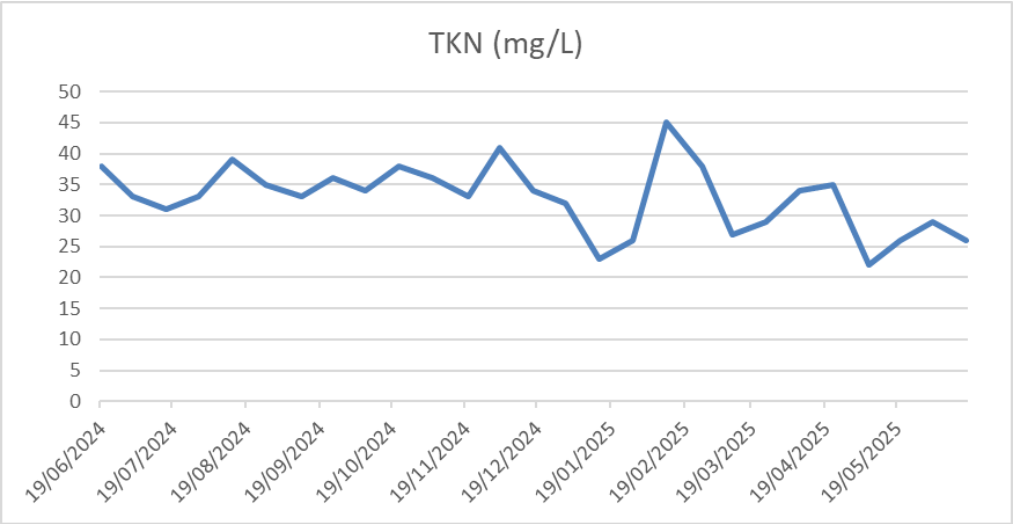
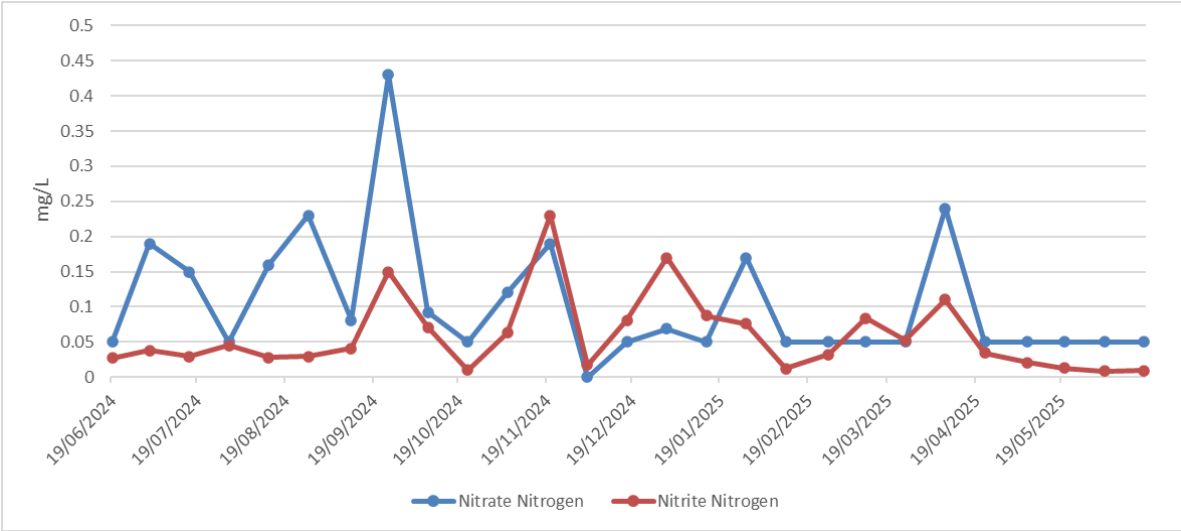


Image: Aerial of pond algae

Condition 13c/16a – Weekly Monitoring - FY 25



Condition 13d – Two Weekly Monitoring – FY 25



Condition 13e – Annual Monitoring

	Enterovirus Ox Ponds	Adenovirus Ox Ponds	Giardia Ox ponds	Cryptosporidium Ox ponds	Salmonella Ox ponds	Thermotolerant Campylobacter Ox ponds
Unit	pfu10/L	IU/10 L	confirmed cysts/L	confirmed oocysts/L	MPN/100ml	MPN/100ml
17/3/2020	170	4200	6	<0.67	0.9	<0.30
17/4/2023	0	80	<0.67	<0.67	<0.3	0.4
1/5/2024	0	5	<0.67	0.67	<0.3	43
10/4/2025	2	0	0	0	0.9	75

Condition 13f – Six Monthly Metals Monitoring

Date	Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc	Mercury
Unit	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	mg/m3
3/04/2025	0.0016	<0.001	0.0014	0.0015	<0.001	0.002	0.014	<0.001
30/01/2025	0.0031	<0.001	0.0021	0.0018	<0.001	0.0024	0.014	<0.00005
9/04/2024	0.0016	<0.001	0.0017	<0.001	<0.001	0.0022	0.0044	<0.00005
9/01/2024	0.0021	<0.001	0.0033	0.002	<0.001	0.0018	0.0084	<0.00005
2/10/2023	0.0031	<0.001	0.019	0.015	0.0042	0.0063	0.062	<0.00005
20/07/2023	0.0026	<0.001	0.0051	0.0034	<0.001	0.002	0.017	<0.00005

Condition 13g – Annual Monitoring

Test	Result
Organochlorine pesticides	All trace level
Organophosphate pesticides	All trace level
Polychlorinated biphenyls	All trace level
Polycyclic aromatic hydrocarbons	All trace level

Condition 21 Two Yearly Ocean Water Monitoring

Test	North of Diffuser	South of Diffuser	West of Diffuser	East of Diffuser
Temperature (°C)	18.1	18	17.9	18.1
Dissolved Oxygen (g/m3)	9.82	9.85	9.93	9.8
Salinity	33.3	33.5	33.0	33.6
TSS(g/m3)	4.57	3.58	4.56	2.13
Oxides of nitrogen(g/m3)	0.0306	0.0383	0.0205	0.032
Ammoniacal(g/m3)	0.0053	0.0049	0.0051	0.0046
DRP (g/m3)	0.0029	0.0022	0.0022	0.0017
Chlorophyll-a (mg/m3)	2	2	2	2
Faecal coliforms (CFU/100mL)	<1	1	<1	<1
Enterococci (MPN/100mL)	<10	<10	<10	<10

Collecting Ocean Water Samples, March 2025



Image: Ocean sample collection



Image: Ocean sample collection

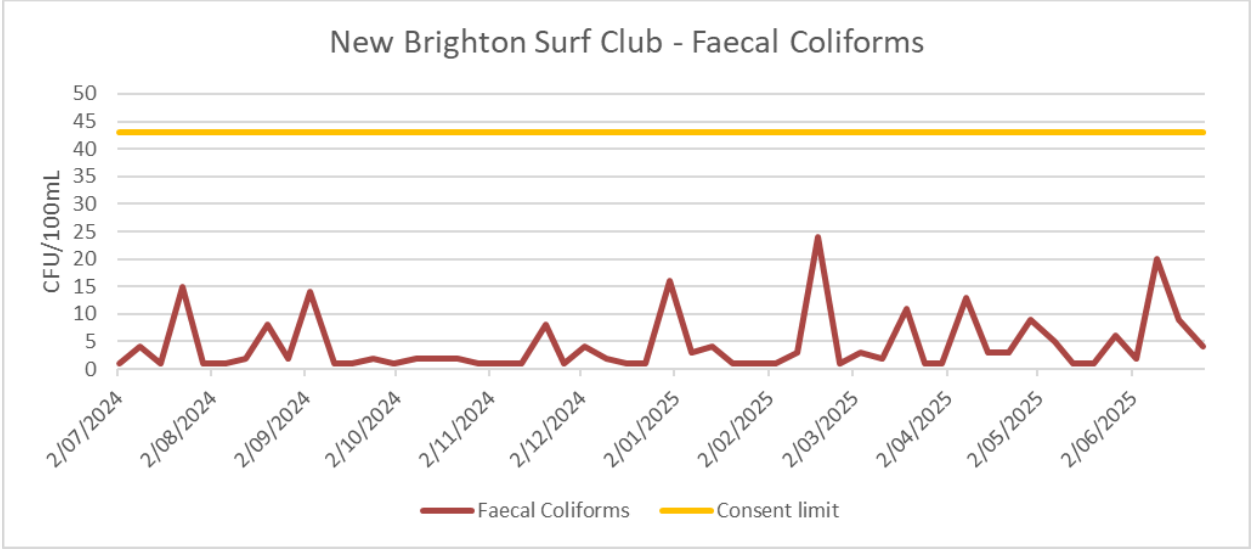
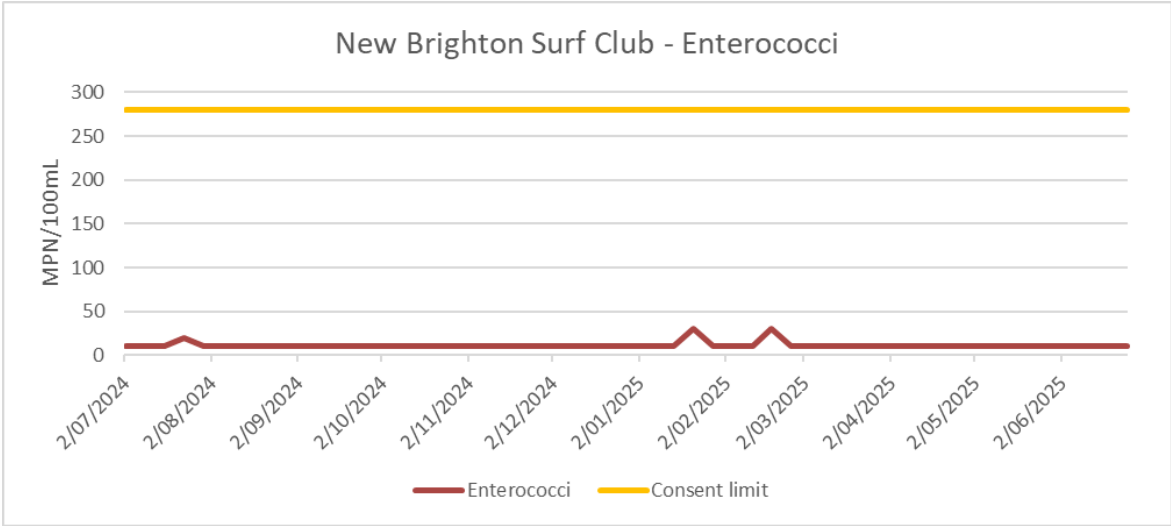
Condition 21 Two Yearly Ocean Water Monitoring

Test	North of Diffuser	South of Diffuser	West of Diffuser	East of Diffuser
Cadmium acid extractable (g/m3)	0.00027	0.00026	0.00026	0.00026
Arsenic acid extractable (g/m3)	0.00418	0.00299	0.00262	0.00236
Zinc acid extractable (g/m3)	0.00444	0.00628	0.00351	0.00475
Nickel acid extractable (g/m3)	0.00106	0.00137	0.00119	0.00114
Chromium acid extractable (g/m3)	0.00050	0.00070	0.00067	0.00047
Lead acid extractable (g/m3)	0.00076	0.00050	0.00040	0.00035
Copper acid extractable (g/m3)	0.00035	0.00022	0.00020	0.00044

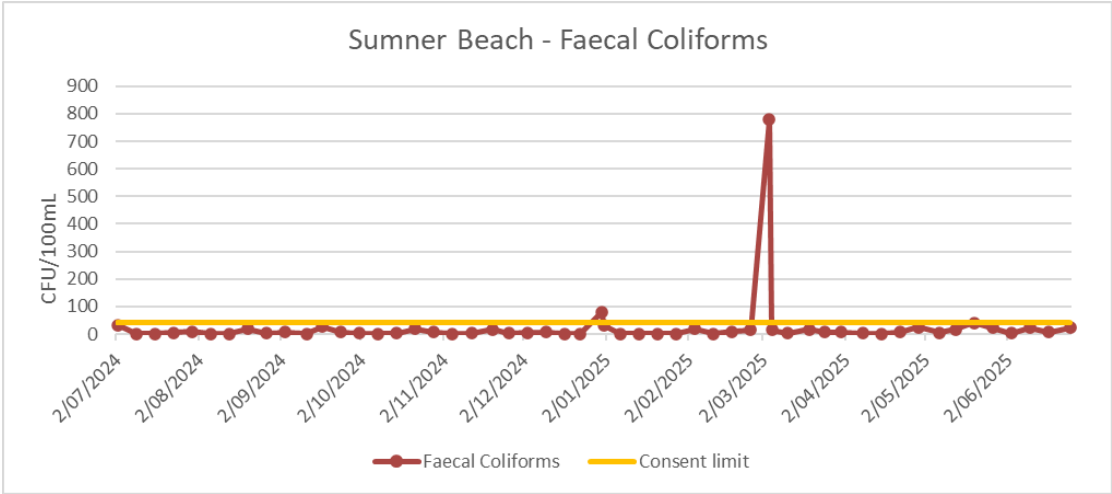
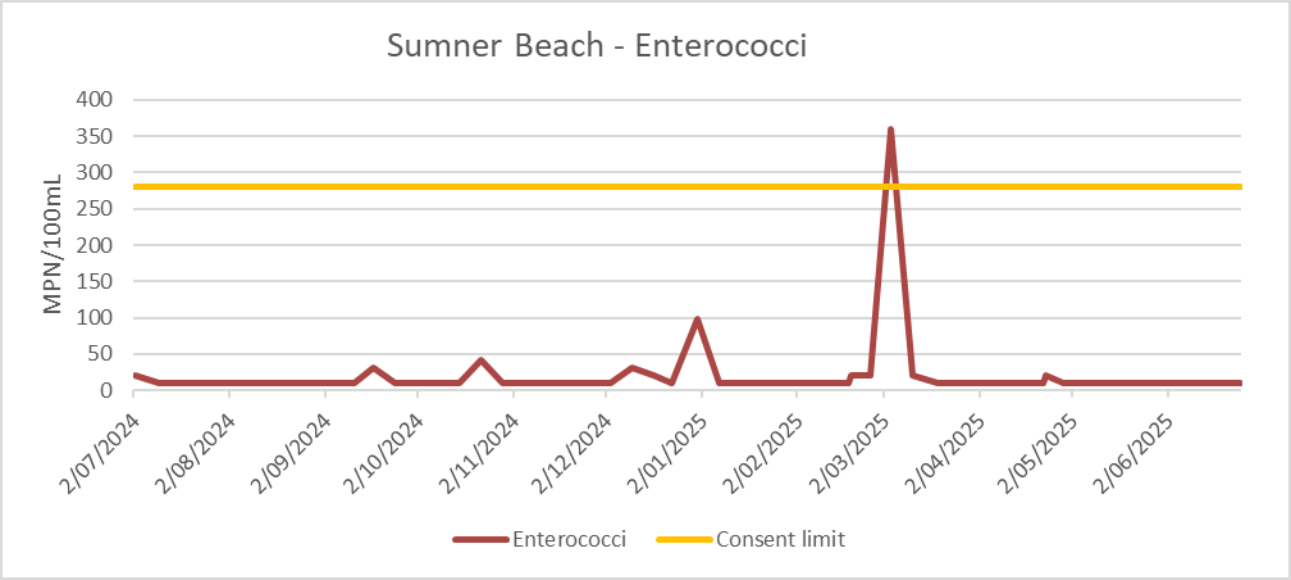
Condition 21 Two Yearly Ocean Water Monitoring

Test	North of Diffuser	South of Diffuser	West of Diffuser	East of Diffuser
Colour (field)	Colourless	Colourless	Colourless	Colourless
Clarity	Turbid	Turbid	Turbid	Turbid
Odour	Moderate	Moderate	Moderate	Moderate
Beaufort number	2	2	2	2
Cloud cover (0-8)	2	2	2	2
Wind direction	225	225	225	225
Site Appearance	Normal	Normal	Normal	Normal
Phytoplankton (S)	Print out available			

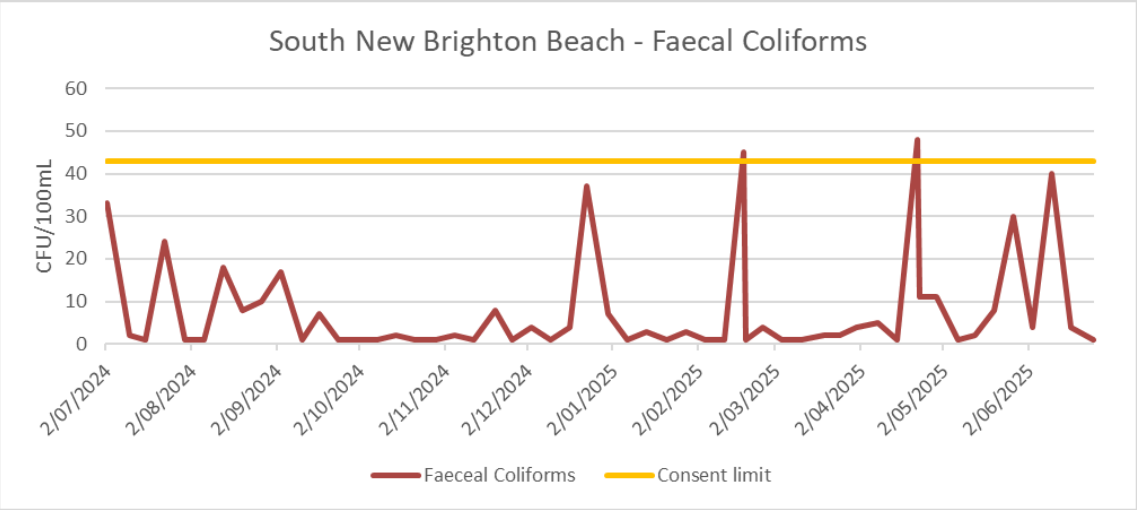
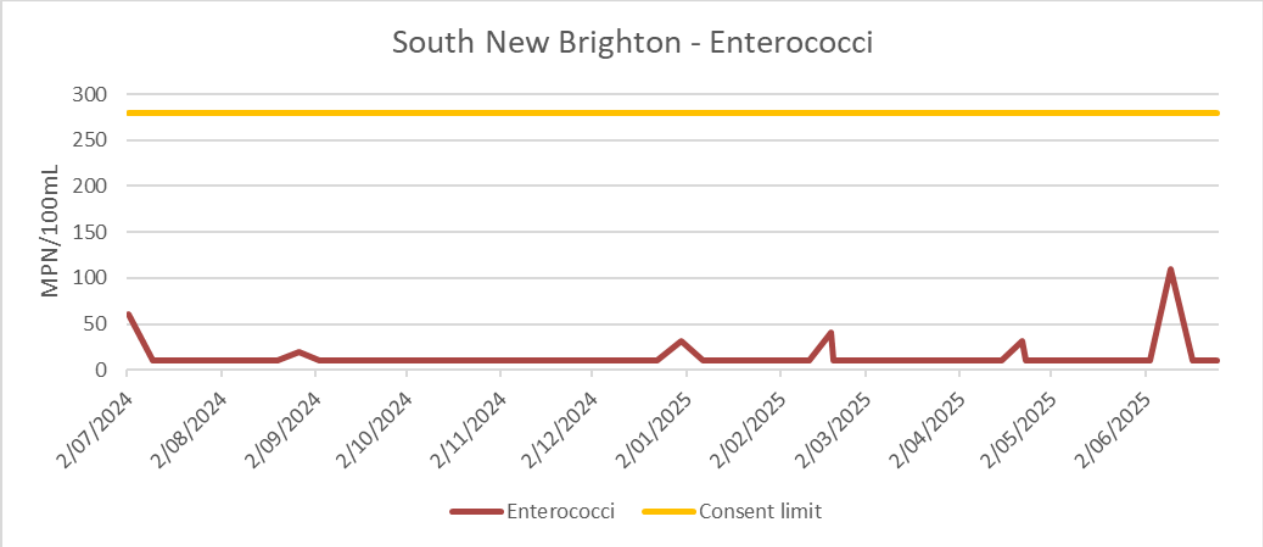
Condition 18 –Receiving Environment Monitoring New Brighton Surf Club



Condition 18 – Receiving Environment Monitoring Sumner Beach



Condition 18 – Receiving Environment Monitoring South New Brighton Beach



Current and anticipated compliance with the resource consents

- We are currently complying with all resource consent conditions of CRC051724
- We don't see any adverse environmental effect from our ocean outfall as the treated wastewater is discharged 3km offshore



Image: Aerial image of ponds 4 & 5

Thank you for your time & attendance

- Questions?



Image: Christchurch Wastewater Treatment Plant