



# Rosedale Wastewater Treatment Plant 2024-2025 Annual Compliance Report

FINAL - September 2025

## QUALITY INFORMATION

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<b>Name and position of originator</b>	Matt Conley, Senior Environmental Scientist
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## Revision History

Rev	Revision Date	Name	Position	Signature
1	05/09/2025	Michiel Jonker	Environmental Care Manager	
2		Mai Hoque	Operations Controller - Rosedale WWTP	
3		Kenny Williamson	Production Manager Wastewater North	

## Approved

Date	Name	Position	Signature
	Michiel Jonker	Environmental Care Manager	

## CONSENT CHANGE AND MONITORING HISTORY

Change type	Description	Effective date	Reference / condition	Reporting / monitoring implications
Monitoring Management Plan	The Monitoring Management Plan (MMP) required by consent 23798 shall be reviewed prior to exercising this consent, and shall be approved by the Manager within 3 months of the exercising of the consent. MMP covers multiple site consents.	2003 (initial version). 2021 (last full review) 2023 (last update approved by AC – changes made to Section 4 (air quality))	Condition 6	Site must comply with the Plan which shall stipulate the precise technical details of monitoring programmes required for the compliance with the conditions of this consent.
Outfall health risk assessment	Undertake a detailed health risk assessment of the effects of the outfall, two years after the exercise of the consent and every five years thereafter.	2025	Condition 11	Report completed by ESR and submitted to AC. Next due 2030.
Trade waste programme review	Review the current Trade Waste Programme upon the exercise of this consent, and at five-yearly intervals in consultation with the ARC and any other reasonably affected parties the consent holder identifies through that review process.	2022	Condition 15	Rosedale Wastewater Treatment Plant BPO and Trade Waste Reviews – December 2022
Alternative disposal options	Investigate alternative disposal options and beneficial reuse trials in consultation with the council, Tangata Whenua, and the community within 6 months of the exercise of this consent, and at five-yearly intervals thereafter.	2022	Condition 16	Rosedale Wastewater Treatment Plant BPO and Trade Waste Reviews – December 2022

## EXECUTIVE SUMMARY

This Annual compliance report outlines the operational performance and regulatory compliance of the Rosedale Wastewater Treatment Plant (WWTP) for the period from 1 July 2024 to 30 June 2025. The plant operates under several resource consents for discharges to water, air, and land, along with stormwater management. The compliance assessment includes effluent quality, air quality, environmental monitoring, and incident reporting.

Key points from the 2024-2025 reporting period include:

- **Effluent discharge:** The plant discharged a total of 21,927,532 m<sup>3</sup> of treated effluent, a 5% reduction compared to the previous year. The effluent quality consistently met consent limits for parameters such as biochemical oxygen demand (BOD<sub>5</sub>), total suspended solids (TSS), nitrogen (TN), and pathogens.
- **Air quality:** No significant issues were reported by the independent peer review panel.
- Four incidents relating to the release of unburnt biogas occurred during the reporting period. These were reported to Auckland Council (AC) at the time. On all four occasions, causes were identified and corrective actions implemented. The peer review panel agreed that any effects of the discharge were likely to be minor.
- A number of odour complaints received between September and December 2024 from the Unsworth Heights residential area alleged odour disturbance from the plant. Extensive investigations and monitoring carried out onsite and within the community identified a series of unsealed manholes near Upper Harbour Highway that was the source of the odour, not the WWTP. The seals were repaired, and no further complaints have been received since. The site odour management system continues to function effectively.
- The community odour survey was completed in August 2025 and provided to AC. Whilst there was a reduction in response rate to the survey compared to previous surveys, the results found that the overall number of respondents that experienced odour effects was consistent with previous reporting years. The next survey is due in 2027.
- **Receiving environment monitoring:** Water quality samples taken from sites near the effluent outfall showed no adverse ecological effects, ensuring the plant's discharges do not impact the receiving environment.
- A 5-yearly microbiological health risk assessment in relation to the effluent outfall was undertaken during this reporting period and provided to AC. The assessment determined the WWTP was achieving the necessary virus removal to manage health risks in the receiving environment.
- **Compliance:** No significant environmental effects were noted during the reporting period. The plant achieved compliance with all monitored consent conditions, categorized as Category 1.

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## ABBREVIATIONS AND ACRONYMS

Abbreviation	Description
AC	Auckland Council
AUR	Asset Upgrades & Renewals
cBOD <sub>5</sub>	Carbonaceous 5-day biochemical oxygen demand
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
DAF	Dissolved Air Flotation
DO	Dissolved oxygen
DRP	Dissolved reactive phosphorus or dissolved soluble phosphorus (synonyms)
E. coli	<i>Escherichia coli</i>
g/m <sup>3</sup>	Grams per Cubic Meter
GBT	Gravity Belt Thickener
mg/L	Milligrams per Litre
MLE	Modified Ludzack Ettinger
MMP	Monitoring Management Plan
NFR	Non filterable residue
NH <sub>x</sub>	Ammonia and ammonium, reported in milligrams nitrogen
NO <sub>2</sub>	Nitrite, reported in milligrams nitrogen
NO <sub>3</sub>	Nitrate, reported in milligrams nitrogen
PRP	Peer Review Panel
PST	Primary sedimentation tanks
QMRA	Quantitative Microbial Risk Assessment
REMP	Receiving Environment Monitoring Plan
TN	Total nitrogen
TP	Total phosphorus
TSS	Total suspended solids
UPS	Uninterrupted Power Supply
UV	Ultra-violet
Watercare	Watercare Services Limited
WWTP	Wastewater treatment plant

## 1 INTRODUCTION

### 1.1 Outline

This report covers resource consent compliance for the Rosedale Wastewater Treatment Plant (WWTP) from 1 July 2024 to 30 June 2025. The report includes:

- Relevant consents and management plans
- Description of the WWTP
- Plant performance
- Summary of compliance.

### 1.2 Consents and plans

#### 1.2.1 Consents

Table 1-1 lists the active resource consents for the Rosedale WWTP.

The Red Bluff outfall is only used when the Mairangi Bay outfall cannot be used because of programmed maintenance. The Red Bluff outfall was not operational in this reporting period.

**Table 1-1 Rosedale WWTP resource consents**

Consent type	Consent number	Expiration date
Discharge to Water (Mairangi Bay outfall)	23799/ CST60260652	31/12/2030
Discharge to Water (Red Bluff outfall)	23798/ CST60260647	31/12/2030
Discharge to Air	30249/ 23792/ DIS80298643	31/12/2030
Discharge to Land	23801/ DIS60265035	01/07/2037
Discharge to Stormwater	24955	31/12/2030

#### 1.2.2 Plans

The Rosedale WWTP has one overarching management plan which contains five operational management sub-plans as required under the resource consents. Table 1-2 lists these plans.

**Table 1-2 Rosedale WWTP management plans**

Primary Management Plan	Revision date
Rosedale Wastewater Treatment Plant Auckland Council Operation Management Plan	November 2021
Secondary Plans	Consent number
Effluent Monitoring Plan	23798 & 23799
Monitoring Management Plan (Receiving Environment)	23798 & 23799
Plant Operations and Monitoring Management Plan (Air Quality)	30249
Rosedale Oxidation Dam Management Plan	38973
Plant Operations & Monitoring Management Plan (Discharges to Land)	23801

## 2 TREATMENT PLANT

### 2.1 Current operation

The Rosedale WWTP's treatment system includes:

- Preliminary treatment, including screening and grit removal.
- Primary Sedimentation Tanks (PSTs) to remove primary sludge and scum by settling and flotation respectively.
- Secondary treatment using activated sludge process in MLE configuration for biological nitrogen reduction with separate clarifiers.
- Anaerobic digestion to convert primary and waste activated sludge to a stable product, reducing odours and pathogens in the solids stream, and recovering energy via biogas generation.
- UV disinfection.
- Sludge thickening (upstream of digesters) using DAF and GBTs.
- Digested sludge dewatering using centrifuges.
- Biogas treatment plant to remove contaminants from the biogas i.e. hydrogen sulphide, moisture, siloxane and some particulates.
- Cogeneration plant that utilises the methane gas to generate electricity and heat.

### 2.2 Changes to the Treatment Plant

#### 2.2.1 2024-2025

- Refurbishment of Digester 3 was completed in June 2025. Watercare has continued work to refurbish the second of its four digesters.
- Work is ongoing on the refurbishment of the odour biofilters, including media replacement and improvements to irrigation. Rehabilitation of dewatering biofilter cells #3 and #5 has been completed this September 2025. The media used is Biofilm (Azwood), consistent with Stantec's design. The diffuser/drain layer material has been changed from concrete blocks to a plastic substitute to address corrosion.
- Refurbishment has begun on one of the four MLEs, including diffuser and valve replacement as well as concrete inspections and repairs. This work will continue successively throughout the year.
- Completed upgrades this year include the control systems to Emerson DeltaV and the upgrade of the MLE aeration blower local and control panels.

#### 2.2.2 Future changes

- Refurbishment of Digesters 1 and 2 will be carried out sequentially.
- The remaining four biofilters will be rehabilitated over approximately two years through the AUR programme.
- Other projects currently underway include the Northern Interceptor Integration (led by Watercare's Programme Delivery team) and Stage 2 of the Pond Link automation project.
- Although this does not represent a change to the site, it is noted that the DAFs and primary sedimentation tanks will be successively taken out of service for major maintenance. The COGEN engine will also undergo refurbishment, including a long-block replacement.
- The existing emulsion polymer system for the centrifuge will be upgraded and replaced with a bulk delivery system, moving away from the current IBC delivery method.

### 3 COMPLIANCE ASSESSMENT

#### 3.1 Introduction

The assessment of WWTP performance considers:

- Results of required WWTP monitoring
- Recorded incidents and complaints.

Watercare assesses compliance with consent using the same compliance rating system utilised by AC (Table 3-1).

**Table 3-1 Compliance assessment criteria**

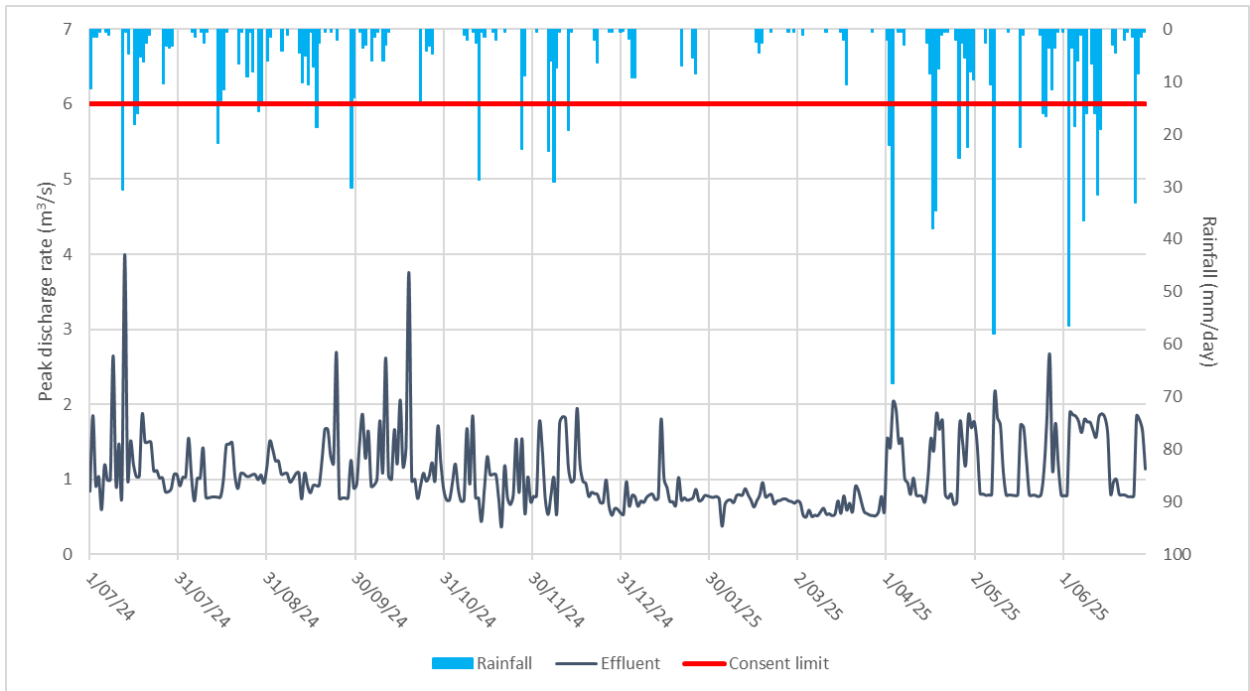
Rating	Detail
Category 1	Watercare has complied with the consent condition. Where a consent condition refers to a provision in a Management Plan, then the plan has been referred to in assessing consent compliance.
Category 2	Watercare has not complied with the consent condition. Watercare has assessed the non-compliance as technical or having no more than minor adverse effect.
Category 3	Watercare has not complied with the consent condition. Watercare has assessed the non-compliance having the potential to result in more than minor adverse effects on the environment. Alternatively, since the last audit, there is evidence of repeat Category 2 non-compliance.
Category 4	Watercare has not complied with the consent condition. Watercare has assessed the non-compliance as having the potential to cause significant adverse effects on the environment. Alternatively, since the last audit, there is evidence of repeat Category 3 non-compliance.

#### 3.2 Plant performance

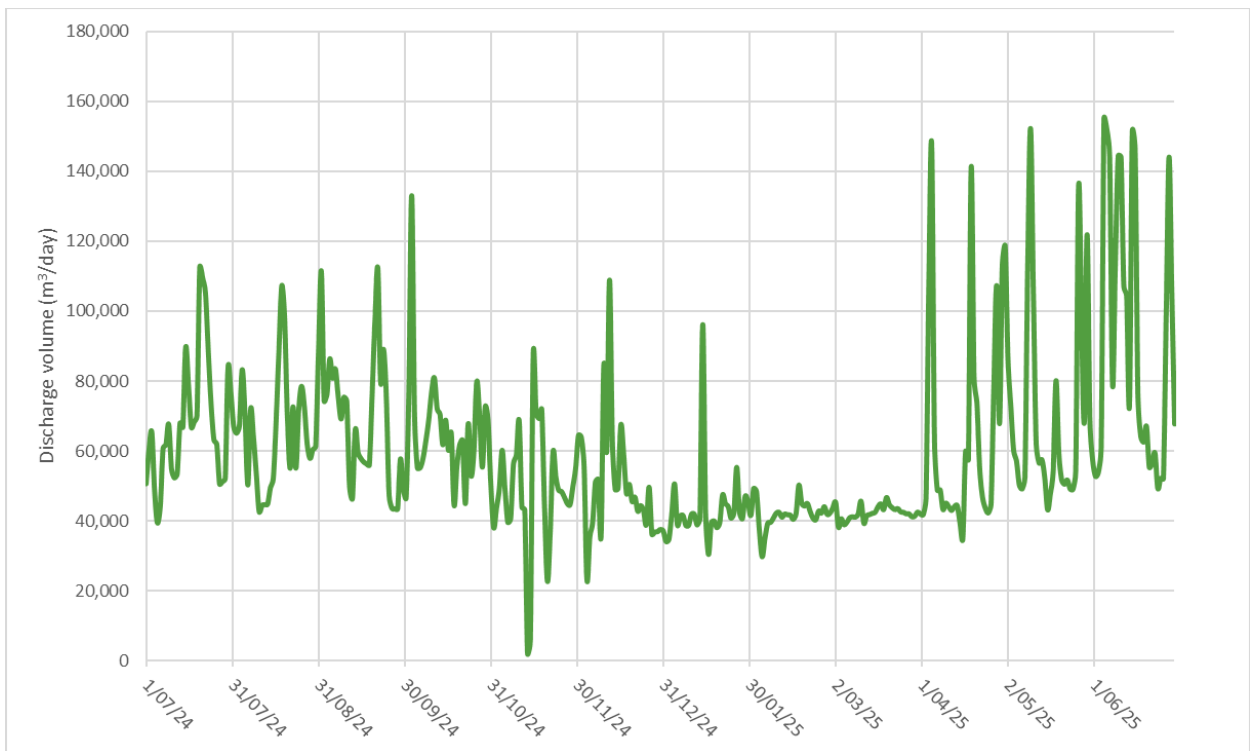
##### 3.2.1 Effluent volumes

Figure 3-1 provides rainfall data and peak discharge rates (i.e., maximum instantaneous flow rate each day) from the Mairangi Bay outfall over the 2024-2025 period. The plant was fully compliant with its instantaneous flow limit of 6 m<sup>3</sup>/s.

The total volume of effluent discharged during the reporting year was 21,927,532 m<sup>3</sup>. This is a decrease of approximately 5% in annual total compared to the previous reporting period (23,131,738m<sup>3</sup>). Figure 3-2 shows daily volumes of effluent discharged from the Mairangi Bay outfall across the reporting period.



**Figure 3-1 Rosedale WWTP rainfall and peak discharge rates for 2024-2025.**



**Figure 3-2 Daily discharge volumes for 2024-2025.**

### 3.2.2 Effluent quality

Table 3-2 provides a summary of effluent quality. Raw data is provided in Appendix A. Trace metals and pathogens are included in the Receiving Environment Monitoring Report (REMP) (refer Appendix B). The monitoring data and source tag references used for this assessment, together with those for REMP, are also provided in Appendix C (Data Sources).

As shown in Table 3-2, the WWTP was fully compliant with its discharge quality parameters in 2024-2025.

### 3.2.3 Air quality

Air quality matters are considered quarterly by an independent Peer Review Panel (PRP). The PRP did not raise any issues associated with air quality in 2024-2025 and will summarise their site assessment in their annual report. Summer odour discharge monitoring in accordance with Condition 41 of Consent 30249 was undertaken between January and May 2025. The monitoring was unable to be completed entirely in summer, as required by the consent, due to an unexpected olfactometer instrument failure at the air quality lab. The report is attached as Appendix D.

A Community Liaison Group (CLG) Meeting was held on 15 November 2024. No complaints or concerns were raised by the community members present. The next CLG meeting will be held in late 2025.

A number of odour complaints were attributed to the plant across the 2024-2025 reporting period. Additionally, four incidents relating to the release of unburnt biogas from the flare were recorded. Complaints and incidents are explained further in Section 3.5. Weekly site-based and monthly community odour scouting continued throughout the reporting period, with no obvious or offensive odours detected offsite.

A community odour survey was completed in 2025 in accordance with Conditions 39 and 40 of the air discharge consent (Permit No. 30249). The survey report was provided to AC on 11 August 2025. Analysis of survey responses found an increase in the proportion of respondents being affected by odour; although the total number of those impacted was consistent with previous surveys. The total number of responses was significantly less compared to previous survey periods; therefore, the increased proportion was attributed to sampling bias (i.e. people that are affected by odour are more likely to respond to the survey than those that are not). The next survey is due in 2027.

## 3.3 Receiving environment monitoring

Watercare undertakes routine water quality samples from sites north and south of the outfall. Results for receiving environmental monitoring are summarised and discussed in a report included in Appendix B. A summary of the main findings from the receiving environment monitoring report (2024-2025) include:

- The effluent discharged from the WWTP was well below the consent limits for key contaminants such as total suspended solids, biochemical oxygen demand, nitrogen, and phosphorus. The heavy metals copper and zinc were elevated above point source guideline values for marine environments, but their concentrations are unlikely to have significant ecological effects due to the dilution within the receiving environment.
- Long-term effluent data indicates reducing trends for multiple parameters and increasing trends for phosphorus (total and dissolved reactive) and chemical oxygen demand. These trends are not thought to be of significance.

- A localised increase in total oxidised nitrogen was observed near the outfall diffuser. However, this effect did not extend beyond the immediate area of the diffuser; with many surveillance sites away from the diffuser displaying long-term decreasing nitrogen trends.
- Localised elevated phosphorus was also evident when sites were grouped as diffuser and sentinel (surveillance) sites. However, the differences were not significant when sites were analysed individually; indicating the differences are small and/or there is insufficient monitoring data to analyse further.
- The concentrations of faecal bacteria indicators were low at all monitored sites.
- Chlorophyll-a concentrations, which serve as a proxy for primary productivity, were similar at all sites, indicating that the plant's discharge is not causing eutrophication or harmful algal growth.
- A reducing pH trend at the Red Bluff sentinel site is not believed to be related to the wastewater discharge.
- Overall, water quality in the monitored areas of the Hauraki Gulf has remained stable over time.
- Ecological impact: The report concludes that the discharge from the WWTP is having minor localised effects on water quality near the outfall but there is no evidence the discharge is contributing to any significant ecological effects in the receiving environment.

Details of the monitoring data sources used for the REMP assessment are also included in Appendix C (Data Sources)

### 3.4 Quantitative Microbial Risk Assessment

Consent 23799 requires Watercare to undertake a 5-yearly risk assessment in relation to microbiological health risks associated with the outfall and effluent discharge. This review was completed in May 2025, and conservatively determined Rosedale WWTP is achieving sufficient viral removal during treatment to reduce health risks from contact recreation (swimming) and shellfish consumption within the receiving environment to a safe level.

### 3.5 Dam monitoring

The dam certificate and dam level monitoring report for 2024-2025 are included in Appendix E. The treatment ponds are fully compliant with their associated dam conditions.

**Table 3-2 Summary of effluent quality monitoring for the Rosedale WWTP 2024-2025.**

Parameter	Units	n	Average	Range	Median	Consented Median	95 <sup>th</sup> Percentile	Consented 95 <sup>th</sup> Percentile	Standard	Compliant
cBOD <sub>5</sub> (total)	mg/L	51	1.4	0.5 - 4.2	1.1	20	2.9		Over 1 year, no more than 16 exceedances above 20	Yes
TSS	g/m <sup>3</sup>	156	6.7	1.0 – 22.0	5.8	35	15	75	For any 3-month period, no more than 23 exceedances above 35 and no more than 4 exceedances above 75	Yes
TN	g/m <sup>3</sup>	12	8.8	6.3 – 12.0	8.6	30	11		Over 1 year, no more than 8 exceedances above 30	Yes
Ammoniacal Nitrogen	g/m <sup>3</sup>	12	0.53	0.03 - 1.40	0.41	10	1.3		Over 1 year, no more than 8 exceedances above 10	Yes
DRP	g/m <sup>3</sup>	12	3.60	2.41 - 5.10	3.60	10	4.8		Over 1 year, no more than 8 exceedances above 10	Yes
Faecal coliforms	cfu/100 mL	157	253.0	1.6 – 4,600.0	3.3	1,000	1,440	10,000	For any 3-month period, no more than 23 exceedances above 1,000 and no more than 4 exceedances above 10,000	Yes
Enterococci	cfu/100 mL	157	43.0	1.6 – 590.0	1.6	100	250	1,000	For any 3-month period, no more than 23 exceedances above 100 and no more than 4 exceedances above 1,000	Yes
Temperature	°C	216	19.0	6.8 - 25.6	19.0	N/A	23	N/A	N/A	N/A
pH	-	215	7.50	5.51 - 8.72	7.50	N/A	8.2	N/A	N/A	N/A
DO	mg O <sub>2</sub> /L	217	8.40	4.62 - 13.06	8.20	N/A	11.3	N/A	N/A	N/A
TP	mg/L	12	4.00	2.78 - 5.78	3.70	N/A	5.4	N/A	N/A	N/A

Note: Yellow indicates consent limits and green indicates compliance with the consent limits.

### 3.6 Complaints and incidents

The Rosedale WWTP received no noise-related complaints over the 2024-2025 reporting period.

Two complaints related to nuisance midge activity were received over the 2024-2025 reporting period; the complaints were lodged on the 24<sup>th</sup> and 25<sup>th</sup> of September 2024 from separate locations. Midge monitoring undertaken at this time from traps and community surveys did observe an increase in midge numbers. As a response, the frequency of contact spray insecticide application was increased from 3-weekly to 2-weekly. Both complainants were advised of the change via email. No further complaints were received.

Between 23 September and 22 December 2024, Watercare received a total of seventeen odour complaints from the Unsworth Heights residential area alleging odour disturbance from the WWTP. During this time there were no changes in treatment processes and no activities out of the ordinary occurring on site that could have attributed excessive odour. Weekly and monthly odour monitoring continued throughout this period with no excessive odours detected. Additional investigations carried out in response to the complaints between October 2024 and January 2025, which included site inspections and odour scouting downwind of the plant, identified a number of unsealed wastewater transmission manholes around the area of the Northern Corridor Improvement project that were the likely source of the odour disturbance. Commissioning of the East Coast Bay link in June-July 2024 changed the flows through the pipes in this area, which was causing stronger odour emissions from the manholes. Replacement of manhole seals was completed by March 2025, and no further complaints have been received since this work was completed. The community was updated of results of the investigation via a post on the Unsworth Heights Community Facebook Group.

Four incidents relating to the release of unburnt biogas occurred over the reporting period – these were reported to AC at the time:

- Saturday 30 November 2024:

An electrical issue with the uninterrupted power supply (UPS) circuit breaker resulted in a power loss to the entire cogeneration and flare systems. As a result of the power loss, the flare vent valves went to their fail-safe open position for a period of approximately 1 hour and 13 minutes, leading to the release of 1,200 Nm<sup>3</sup> of unburnt biogas.

As a resolution to prevent recurrence, the circuit breaker was replaced in May 2025.

- Monday 2 December 2024: Lasted approximately 1 hour, with a total release of 321 Nm<sup>3</sup>.

During the routine flare exercise, it was noticed that the flare was shutting down due to low flow. The low flow was caused by one of the main shut-off valves not opening. Instrument technicians were called out to repair, and they found that a solenoid needed replacement. To carry out the repair, the power to the flare electrical panel was turned off, causing the flare vent valves to go to the open fail-safe position. Vent valves were open for approximately 1 hour and 3 minutes, with the engine running for most of that duration releasing 321 Nm<sup>3</sup> of unburnt biogas.

- Sunday 18 May 2025: Lasted approximately 9 hours, with a total release of 3,132 Nm<sup>3</sup>.
- Friday 23 May 2025: Lasted 40 minutes, with a release of 232 Nm<sup>3</sup>.

In both May 2025 instances, duty operators in the Control Room were alerted to a significant reduction in the biogas flow to the flare. Investigations by the Operations and Maintenance teams

concluded that emergency maintenance was required to prevent a potentially sustained and uncontrolled release. This maintenance work required a temporary shutdown of the flare system, which, due to limited biogas storage capacity available within the treatment process, resulted in release of unburnt biogas to the atmosphere.

Post-incident investigations identified a blockage in the flare flame arrester caused by sand-like particulate matter, which restricted flow to the flare. Further tracing identified the source of the material as a blower unit that had not been in service for several years. This blower was recently exercised as part of a control system testing activity under an automation upgrade project. It is likely that operating the rarely used blower dislodged residual particulates, which were subsequently entrained into the flare flame arrester, resulting in flow obstruction.

The flare line, blower and flame arrester were cleaned, and the suspected source of the particulate material was addressed. Measures have been implemented to prevent recurrence, including enhanced monitoring and more frequent preventive maintenance and inspection routines for the flare system and associated equipment.

The main risk from the release of unburnt biogas is its flammability (i.e., before dispersion into the atmosphere), which was managed during the incidents above. As biogas is predominantly methane, which is non-toxic but an asphyxiant in confined spaces, the releases did not result in any localised or short-term adverse environmental or health effects. Preventive measures, including enhanced monitoring and more frequent maintenance of the flare system, have been implemented to reduce the likelihood of recurrence.

There are no other incidents to report which required corrective action.

### **3.7 Summary of compliance**

Appendix F lists a condition-by-condition assessment of compliance for the Rosedale WWTP.

## 4 CONCLUSION

The 2024–2025 reporting period demonstrated consistent and effective compliance at the Rosedale WWTP with all relevant discharge limits in the consent conditions. The plant successfully managed both effluent quality and discharge volumes, remaining within the consented limits for all key parameters, including biochemical oxygen demand, total suspended solids, and nitrogen compounds.

Air quality and environmental monitoring reports also confirmed that emissions from the plant were controlled and did not adversely impact the surrounding environment. A spike in odour complaints in late 2024 from around the Unsworth Heights residential area, that were attributed to the plant, were found to be related to the wastewater transmission network and corrective works resolved the issue.

The 2-yearly community odour survey was completed during this reporting period and the report was provided to council previously. The survey found that, whilst there was an increase in the proportion of respondents that were impacted by odour compared to previous surveys, the total number affected was consistent with previous surveys. Therefore, the increase in proportion was attributed to sampling bias (i.e. those that were affected were more likely to respond to the survey). The majority of respondents impacted came from the Unsworth Heights area and it is considered the recent transmission line odour issues could have impacted survey responses from this area.

Two complaints in September 2024 related to disturbance from midges were resolved through increased frequency of insecticide spraying at the time. There were no major environmental incidents during the reporting period.

In addition, four incidents involving the release of unburnt biogas from the flare system occurred during the reporting period. These were promptly reported to AC, investigated, and corrective measures implemented. The incidents did not result in any adverse environmental or health effects, and preventive actions have been adopted to minimise the risk of recurrence.

A 5-yearly microbial risk assessment of the area surrounding the discharge outfall was undertaken during this reporting period and provided to council previously. The assessment conservatively determined Rosedale WWTP is achieving sufficient viral removal through treatment to reduce health risks from contact recreation (swimming) and shellfish consumption within the receiving environment to a safe level.

## **Appendix A.    Supplementary Data**

## **Appendix B. Receiving Environment Report**

## Appendix C. Data Sources

**Storage location and data tags of environmental monitoring data used in this report.**

Category	Parameter	Source platform	Tag/ID	Report
Environmental Monitoring	Rainfall	Pi	DTROS_00_NIT_X01/RAIN_PDAY.CV	Compliance
Effluent Volume	Pond 2 Outlet Flow & Volume	Pi	DTROS55FCALC_X01/PV.CV	Compliance
Reservoir Level Monitoring	Pond 1 Level	Pi	DTROS_53_LIT_012/PV.CV	Dam Certificate
Effluent Quality	Dissolved Oxygen	Pi	DTRLE_55_15.3_FE_DO	Compliance & REMP
Effluent Quality	Enterococci	Pi	DTRLE_55_15.3_FE_EB	Compliance & REMP
Effluent Quality	Faecal Coliforms	Pi	DTRLE_55_15.3_FE_FC	Compliance & REMP
Effluent Quality	Dissolved Reactive Phosphorus	Pi	DTRLE_55_15.3_FE_P	Compliance & REMP
Effluent Quality	pH	Pi	DTRLE_55_15.3_FE_pH	Compliance & REMP
Effluent Quality	Temperature (9:00am)	Pi	DTRLE_55_15.3_FE_TEMP	Compliance & REMP
Effluent Quality	Total Nitrogen	Pi	DTRLE_55_15.3_FE_TN	Compliance & REMP
Effluent Quality	Ammonia Nitrogen (NH3 + NH4)	Pi	DTRLE_55_15.3_FE_TNH3N	Compliance & REMP
Effluent Quality	Total Phosphorus	Pi	DTRLE_55_15.3_FE_TP	Compliance & REMP
Effluent Quality	Total Suspended solids	Pi	DTRLE_55_15.3_FE_TSS	Compliance & REMP
Effluent Quality	Arsenic - Total	Pi	DTRLE_55_15.3_FE_As-tot	REMP
Effluent Quality	MPN Campylobacter	Pi	DTRLE_55_15.3_FE_CAMP	REMP
Effluent Quality	Cadmium - Total	Pi	DTRLE_55_15.3_FE_Cd-tot	REMP
Effluent Quality	Chlorophyll-a	Pi	DTRLE_55_15.3_FE_CHLA	REMP
Effluent Quality	Chemical Oxygen Demand	Pi	DTRLE_55_15.3_FE_COD	REMP
Effluent Quality	Chromium - Total	Pi	DTRLE_55_15.3_FE_Cr-tot	REMP
Effluent Quality	Copper - Total	Pi	DTRLE_55_15.3_FE_Cu-tot	REMP
Effluent Quality	Giardia	Pi	DTRLE_55_15.3_FE_GIARDIA	REMP
Effluent Quality	Mercury - Total	Pi	DTRLE_55_15.3_FE_Hg-tot	REMP
Effluent Quality	Nickel - Total	Pi	DTRLE_55_15.3_FE_Ni-tot	REMP
Effluent Quality	Nitrite Nitrogen	Pi	DTRLE_55_15.3_FE_NO2	REMP
Effluent Quality	Nitrate Nitrogen	Pi	DTRLE_55_15.3_FE_NO3	REMP
Effluent Quality	Lead - Total	Pi	DTRLE_55_15.3_FE_Pb-tot	REMP
Effluent Quality	Bacteriophages	Pi	DTRLE_55_15.3_FE_PHAGE	REMP
Effluent Quality	Salmonella	Pi	DTRLE_55_15.3_FE_SALM	REMP
Effluent Quality	Biological Oxygen Demand	Pi	DTRLE_55_15.3_FE_TBOD	REMP
Effluent Quality	Zinc - Total	Pi	DTRLE_55_15.3_FE_Zn-tot	REMP
Effluent Quality	Arsenic - Dissolved	Pi	DTRLE_55_15.3_FE_As-sol	REMP
Effluent Quality	Cadmium - Dissolved	Pi	DTRLE_55_15.3_FE_Cd-sol	REMP
Effluent Quality	Chromium - Dissolved	Pi	DTRLE_55_15.3_FE_Cr-sol	REMP
Effluent Quality	Copper - Dissolved	Pi	DTRLE_55_15.3_FE_Cu-sol	REMP
Effluent Quality	Mercury - Dissolved	Pi	DTRLE_55_15.3_FE_Hg-sol	REMP
Effluent Quality	Nickel - Dissolved	Pi	DTRLE_55_15.3_FE_Ni-sol	REMP
Effluent Quality	Lead - Dissolved	Pi	DTRLE_55_15.3_FE_Pb-sol	REMP
Effluent Quality	Zinc - Dissolved	Pi	DTRLE_55_15.3_FE_Zn-sol	REMP
Influent Quality	Dissolved Reactive Phosphorus	Pi	DTRLE_20_1_RS_P	REMP
Influent Quality	Total Phosphorus	Pi	DTRLE_20_1_RS_TP	REMP
Influent Quality	Biological Oxygen Demand	Pi	DTRLE_20_1_RS_CBOD	REMP
Influent Quality	Chemical Oxygen Demand	Pi	DTRLE_20_1_RS_COD	REMP

Category	Parameter	Source platform	Tag/ID	Report
Harbour Water Quality	Black Rock - Chlorophyll-a	Pi	DTRLE_55_SEA_BLACKROCK_CHLA	REMP
Harbour Water Quality	Black Rock - Enterococci	Pi	DTRLE_55_SEA_BLACKROCK_EB	REMP
Harbour Water Quality	Black Rock - Faecal Coliforms	Pi	DTRLE_55_SEA_BLACKROCK_FC	REMP
Harbour Water Quality	Black Rock - Nitrite Nitrogen	Pi	DTRLE_55_SEA_BLACKROCK_NO2	REMP
Harbour Water Quality	Black Rock - Nitrate Nitrogen	Pi	DTRLE_55_SEA_BLACKROCK_NO3	REMP
Harbour Water Quality	Black Rock - NO2 and NO3	Pi	DTRLE_55_SEA_BLACKROCK_NOx	REMP
Harbour Water Quality	Black Rock - DRP	Pi	DTRLE_55_SEA_BLACKROCK_P	REMP
Harbour Water Quality	Black Rock - pH	Pi	DTRLE_55_SEA_BLACKROCK_pH	REMP
Harbour Water Quality	Black Rock - Salinity	Pi	DTRLE_55_SEA_BLACKROCK_Sal	REMP
Harbour Water Quality	Black Rock - Temp	Pi	DTRLE_55_SEA_BLACKROCK_TEMP	REMP
Harbour Water Quality	Black Rock - Total Nitrogen	Pi	DTRLE_55_SEA_BLACKROCK_TN	REMP
Harbour Water Quality	Black Rock - Ammoniacal-N	Pi	DTRLE_55_SEA_BLACKROCK TNH3N	REMP
Harbour Water Quality	Black Rock - Total Phosphorus	Pi	DTRLE_55_SEA_BLACKROCK_TP	REMP
Harbour Water Quality	Black Rock - Turbidity	Pi	DTRLE_55_SEA_BLACKROCK_TUR	REMP
Harbour Water Quality	Outfall Site G1 - Chlorophyll-a	Pi	DTRLE_55_SEA_G1_CHLA	REMP
Harbour Water Quality	Outfall Site G1 - Enterococci	Pi	DTRLE_55_SEA_G1_EB	REMP
Harbour Water Quality	Outfall Site G1 - Faecal Coliforms	Pi	DTRLE_55_SEA_G1_FC	REMP
Harbour Water Quality	Outfall Site G1 - Nitrite Nitrogen	Pi	DTRLE_55_SEA_G1_NO2	REMP
Harbour Water Quality	Outfall Site G1 - Nitrate Nitrogen	Pi	DTRLE_55_SEA_G1_NO3	REMP
Harbour Water Quality	Outfall Site G1 - NO2 and NO3	Pi	DTRLE_55_SEA_G1_NOx	REMP
Harbour Water Quality	Outfall Site G1 - DRP	Pi	DTRLE_55_SEA_G1_P	REMP
Harbour Water Quality	Outfall Site G1 - pH	Pi	DTRLE_55_SEA_G1_pH	REMP
Harbour Water Quality	Outfall Site G1 - Salinity	Pi	DTRLE_55_SEA_G1_Sal	REMP
Harbour Water Quality	Outfall Site G1 - Temp	Pi	DTRLE_55_SEA_G1_TEMP	REMP
Harbour Water Quality	Outfall Site G1 - Total Nitrogen	Pi	DTRLE_55_SEA_G1_TN	REMP
Harbour Water Quality	Outfall Site G1 - Ammoniacal-N	Pi	DTRLE_55_SEA_G1 TNH3N	REMP
Harbour Water Quality	Outfall Site G1 - Total Phosphorus	Pi	DTRLE_55_SEA_G1_TP	REMP
Harbour Water Quality	Outfall Site G1 - Turbidity	Pi	DTRLE_55_SEA_G1_TUR	REMP
Harbour Water Quality	Outfall Site G2 - Chlorophyll-a	Pi	DTRLE_55_SEA_G2_CHLA	REMP
Harbour Water Quality	Outfall Site G2 - Enterococci	Pi	DTRLE_55_SEA_G2_EB	REMP
Harbour Water Quality	Outfall Site G2 - Faecal Coliforms	Pi	DTRLE_55_SEA_G2_FC	REMP
Harbour Water Quality	Outfall Site G2 - Nitrite Nitrogen	Pi	DTRLE_55_SEA_G2_NO2	REMP
Harbour Water Quality	Outfall Site G2 - Nitrate Nitrogen	Pi	DTRLE_55_SEA_G2_NO3	REMP
Harbour Water Quality	Outfall Site G2 - NO2 and NO3	Pi	DTRLE_55_SEA_G2_NOx	REMP
Harbour Water Quality	Outfall Site G2 - DRP	Pi	DTRLE_55_SEA_G2_P	REMP
Harbour Water Quality	Outfall Site G2 - pH	Pi	DTRLE_55_SEA_G2_pH	REMP
Harbour Water Quality	Outfall Site G2 - Salinity	Pi	DTRLE_55_SEA_G2_Sal	REMP
Harbour Water Quality	Outfall Site G2 - Temp	Pi	DTRLE_55_SEA_G2_TEMP	REMP
Harbour Water Quality	Outfall Site G2 - Total Nitrogen	Pi	DTRLE_55_SEA_G2_TN	REMP
Harbour Water Quality	Outfall Site G2 - Ammoniacal-N	Pi	DTRLE_55_SEA_G2 TNH3N	REMP
Harbour Water Quality	Outfall Site G2 - Total Phosphorus	Pi	DTRLE_55_SEA_G2_TP	REMP
Harbour Water Quality	Outfall Site G2 - Turbidity	Pi	DTRLE_55_SEA_G2_TUR	REMP
Harbour Water Quality	Mairangi Bay - Chlorophyll-a	Pi	DTRLE_55_SEA_MAIRANGIBAY_CHLA	REMP

Category	Parameter	Source platform	Tag/ID	Report
Harbour Water Quality	Mairangi Bay - Enterococci	Pi	DTRLE_55_SEA_MAIRANGIBAY_EB	REMP
Harbour Water Quality	Mairangi Bay - Faecal Coliforms	Pi	DTRLE_55_SEA_MAIRANGIBAY_FC	REMP
Harbour Water Quality	Mairangi Bay - Nitrite Nitrogen	Pi	DTRLE_55_SEA_MAIRANGIBAY_NO2	REMP
Harbour Water Quality	Mairangi Bay - Nitrate Nitrogen	Pi	DTRLE_55_SEA_MAIRANGIBAY_NO3	REMP
Harbour Water Quality	Mairangi Bay - NO2 and NO3	Pi	DTRLE_55_SEA_MAIRANGIBAY_NOx	REMP
Harbour Water Quality	Mairangi Bay - DRP	Pi	DTRLE_55_SEA_MAIRANGIBAY_P	REMP
Harbour Water Quality	Mairangi Bay - pH	Pi	DTRLE_55_SEA_MAIRANGIBAY_pH	REMP
Harbour Water Quality	Mairangi Bay - Salinity	Pi	DTRLE_55_SEA_MAIRANGIBAY_Sal	REMP
Harbour Water Quality	Mairangi Bay - Temp	Pi	DTRLE_55_SEA_MAIRANGIBAY_TEMP	REMP
Harbour Water Quality	Mairangi Bay - Total Nitrogen	Pi	DTRLE_55_SEA_MAIRANGIBAY_TN	REMP
Harbour Water Quality	Mairangi Bay - Ammoniacal-N	Pi	DTRLE_55_SEA_MAIRANGIBAY_TNH3N	REMP
Harbour Water Quality	Mairangi Bay - Total Phosphorus	Pi	DTRLE_55_SEA_MAIRANGIBAY_TP	REMP
Harbour Water Quality	Mairangi Bay - Turbidity	Pi	DTRLE_55_SEA_MAIRANGIBAY_TUR	REMP
Harbour Water Quality	Rahopara Point - Chlorophyll-a	Pi	DTRLE_55_SEA_RAHO PARA_CHLA	REMP
Harbour Water Quality	Rahopara Point - Enterococci	Pi	DTRLE_55_SEA_RAHO PARA_EB	REMP
Harbour Water Quality	Rahopara Point - Faecal Coliforms	Pi	DTRLE_55_SEA_RAHO PARA_FC	REMP
Harbour Water Quality	Rahopara Point - Nitrite Nitrogen	Pi	DTRLE_55_SEA_RAHO PARA_NO2	REMP
Harbour Water Quality	Rahopara Point - Nitrate Nitrogen	Pi	DTRLE_55_SEA_RAHO PARA_NO3	REMP
Harbour Water Quality	Rahopara Point - NO2 and NO3	Pi	DTRLE_55_SEA_RAHO PARA_NOx	REMP
Harbour Water Quality	Rahopara Point - DRP	Pi	DTRLE_55_SEA_RAHO PARA_P	REMP
Harbour Water Quality	Rahopara Point - pH	Pi	DTRLE_55_SEA_RAHO PARA_pH	REMP
Harbour Water Quality	Rahopara Point - Salinity	Pi	DTRLE_55_SEA_RAHO PARA_Sal	REMP
Harbour Water Quality	Rahopara Point - Temp	Pi	DTRLE_55_SEA_RAHO PARA_TEMP	REMP
Harbour Water Quality	Rahopara Point - Total Nitrogen	Pi	DTRLE_55_SEA_RAHO PARA_TN	REMP
Harbour Water Quality	Rahopara Point - Ammoniacal-N	Pi	DTRLE_55_SEA_RAHO PARA_TNH3N	REMP
Harbour Water Quality	Rahopara Point - Total Phosphorus	Pi	DTRLE_55_SEA_RAHO PARA_TP	REMP
Harbour Water Quality	Rahopara Point - Turbidity	Pi	DTRLE_55_SEA_RAHO PARA_TUR	REMP
Harbour Water Quality	Red Bluff - Chlorophyll-a	Pi	DTRLE_55_SEA_REDBLUFF_CHLA	REMP
Harbour Water Quality	Red Bluff - Enterococci	Pi	DTRLE_55_SEA_REDBLUFF_EB	REMP
Harbour Water Quality	Red Bluff - Faecal Coliforms	Pi	DTRLE_55_SEA_REDBLUFF_FC	REMP
Harbour Water Quality	Red Bluff - Nitrite Nitrogen	Pi	DTRLE_55_SEA_REDBLUFF_NO2	REMP
Harbour Water Quality	Red Bluff - Nitrate Nitrogen	Pi	DTRLE_55_SEA_REDBLUFF_NO3	REMP
Harbour Water Quality	Red Bluff - NO2 and NO3	Pi	DTRLE_55_SEA_REDBLUFF_NOx	REMP
Harbour Water Quality	Red Bluff - DRP	Pi	DTRLE_55_SEA_REDBLUFF_P	REMP
Harbour Water Quality	Red Bluff - pH	Pi	DTRLE_55_SEA_REDBLUFF_pH	REMP
Harbour Water Quality	Red Bluff - Salinity	Pi	DTRLE_55_SEA_REDBLUFF_Sal	REMP
Harbour Water Quality	Red Bluff - Temp	Pi	DTRLE_55_SEA_REDBLUFF_TEMP	REMP
Harbour Water Quality	Red Bluff - Total Nitrogen	Pi	DTRLE_55_SEA_REDBLUFF_TN	REMP
Harbour Water Quality	Red Bluff - Ammoniacal-N	Pi	DTRLE_55_SEA_REDBLUFF_TNH3N	REMP
Harbour Water Quality	Red Bluff - Total Phosphorus	Pi	DTRLE_55_SEA_REDBLUFF_TP	REMP
Harbour Water Quality	Red Bluff - Turbidity	Pi	DTRLE_55_SEA_REDBLUFF_TUR	REMP
Harbour Water Quality	Tatarata Point - Chlorophyll-a	Pi	DTRLE_55_SEA_TATARATA_CHLA	REMP
Harbour Water Quality	Tatarata Point - Enterococci	Pi	DTRLE_55_SEA_TATARATA_EB	REMP

Category	Parameter	Source platform	Tag/ID	Report
Harbour Water Quality	Tatarata Point - Faecal Coliforms	Pi	DTRLE_55_SEA_TATARATA_FC	REMP
Harbour Water Quality	Tatarata Point - Nitrite Nitrogen	Pi	DTRLE_55_SEA_TATARATA_NO2	REMP
Harbour Water Quality	Tatarata Point - Nitrate Nitrogen	Pi	DTRLE_55_SEA_TATARATA_NO3	REMP
Harbour Water Quality	Tatarata Point - NO2 and NO3	Pi	DTRLE_55_SEA_TATARATA_NOx	REMP
Harbour Water Quality	Tatarata Point - DRP	Pi	DTRLE_55_SEA_TATARATA_P	REMP
Harbour Water Quality	Tatarata Point - pH	Pi	DTRLE_55_SEA_TATARATA_pH	REMP
Harbour Water Quality	Tatarata Point - Salinity	Pi	DTRLE_55_SEA_TATARATA_Sal	REMP
Harbour Water Quality	Tatarata Point - Temp	Pi	DTRLE_55_SEA_TATARATA_TEMP	REMP
Harbour Water Quality	Tatarata Point - Total Nitrogen	Pi	DTRLE_55_SEA_TATARATA_TN	REMP
Harbour Water Quality	Tatarata Point - Ammoniacal-N	Pi	DTRLE_55_SEA_TATARATA TNH3N	REMP
Harbour Water Quality	Tatarata Point - Total Phosphorus	Pi	DTRLE_55_SEA_TATARATA_TP	REMP
Harbour Water Quality	Tatarata Point - Turbidity	Pi	DTRLE_55_SEA_TATARATA_TUR	REMP
Harbour Water Quality	Tipau Point - Chlorophyll-a	Pi	DTRLE_55_SEA_TIPAU_CHLA	REMP
Harbour Water Quality	Tipau Point - Enterococci	Pi	DTRLE_55_SEA_TIPAU_EB	REMP
Harbour Water Quality	Tipau Point - Faecal Coliforms	Pi	DTRLE_55_SEA_TIPAU_FC	REMP
Harbour Water Quality	Tipau Point - Nitrite Nitrogen	Pi	DTRLE_55_SEA_TIPAU_NO2	REMP
Harbour Water Quality	Tipau Point - Nitrate Nitrogen	Pi	DTRLE_55_SEA_TIPAU_NO3	REMP
Harbour Water Quality	Tipau Point - NO2 and NO3	Pi	DTRLE_55_SEA_TIPAU_NOx	REMP
Harbour Water Quality	Tipau Point - DRP	Pi	DTRLE_55_SEA_TIPAU_P	REMP
Harbour Water Quality	Tipau Point - pH	Pi	DTRLE_55_SEA_TIPAU_pH	REMP
Harbour Water Quality	Tipau Point - Salinity	Pi	DTRLE_55_SEA_TIPAU_Sal	REMP
Harbour Water Quality	Tipau Point - Temp	Pi	DTRLE_55_SEA_TIPAU_TEMP	REMP
Harbour Water Quality	Tipau Point - Total Nitrogen	Pi	DTRLE_55_SEA_TIPAU_TN	REMP
Harbour Water Quality	Tipau Point - Ammoniacal-N	Pi	DTRLE_55_SEA_TIPAU TNH3N	REMP
Harbour Water Quality	Tipau Point - Total Phosphorus	Pi	DTRLE_55_SEA_TIPAU_TP	REMP
Harbour Water Quality	Tipau Point - Turbidity	Pi	DTRLE_55_SEA_TIPAU_TUR	REMP
Harbour Water Quality	Black Rock - Salinity @ 5m	Pi	DTRLE_55_SEA_5M.BLACKROCK_Sal	REMP
Harbour Water Quality	Black Rock - Temp @ 5m	Pi	DTRLE_55_SEA_5M.BLACKROCK_TEMP	REMP
Harbour Water Quality	Outfall Site G1 - Salinity @ 5m	Pi	DTRLE_55_SEA_5M.G1_Sal	REMP
Harbour Water Quality	Outfall Site G1 - Temp @ 5m	Pi	DTRLE_55_SEA_5M.G1_TEMP	REMP
Harbour Water Quality	Outfall Site G2 - Salinity @ 5m	Pi	DTRLE_55_SEA_5M.G2_Sal	REMP
Harbour Water Quality	Outfall Site G2 - Temp @ 5m	Pi	DTRLE_55_SEA_5M.G2_TEMP	REMP
Harbour Water Quality	Mairangi Bay - Salinity @ 5m	Pi	DTRLE_55_SEA_5M.MAIRANGIBAY_Sal	REMP
Harbour Water Quality	Mairangi Bay - Temp @ 5m	Pi	DTRLE_55_SEA_5M.MAIRANGIBAY_TEMP	REMP
Harbour Water Quality	Rahopara Point - Salinity @ 5m	Pi	DTRLE_55_SEA_5M.RAHOPARA_Sal	REMP
Harbour Water Quality	Rahopara Point - Temp @ 5m	Pi	DTRLE_55_SEA_5M.RAHOPARA_TEMP	REMP
Harbour Water Quality	Red Bluff - Salinity @ 5m	Pi	DTRLE_55_SEA_5M.REDBLUFF_Sal	REMP
Harbour Water Quality	Red Bluff - Temp @ 5m	Pi	DTRLE_55_SEA_5M.REDBLUFF_TEMP	REMP
Harbour Water Quality	Tatarata Point - Salinity @ 5m	Pi	DTRLE_55_SEA_5M.TATARATA_Sal	REMP
Harbour Water Quality	Tatarata Point - Temp @ 5m	Pi	DTRLE_55_SEA_5M.TATARATA_TEMP	REMP
Harbour Water Quality	Tipau Point - Salinity @ 5m	Pi	DTRLE_55_SEA_5M.TIPAU_Sal	REMP
Harbour Water Quality	Tipau Point - Temp @ 5m	Pi	DTRLE_55_SEA_5M.TIPAU_TEMP	REMP

## **Appendix D. Summer Odour Discharge Report**

## **Appendix E. Dam Certificate**

## **Appendix F. Compliance Assessment**

**Appendix D-1 Assessment of Compliance with Consent Conditions Rosedale WWTP Discharge to Water – Hauraki Gulf of Mairangi Bay (#23799)**

Condition Number	Consent Conditions Rosedale WWTP Discharge to Water – Hauraki Gulf of Mairangi Bay (#23799)	Compliance Rating	Comment
01	ARC agents may access the property at reasonable times to carry out inspections, surveys, tests, or measurements, or to take samples.	1	
02	That the Consent Holder shall, as far as practicable, install and operate the works and associated processes in accordance with the documentation submitted to the ARC as part of application number 23799. No alterations shall be made to the plant or processes that do not, or are not likely to, comply with the provisions of this consent, a regional rule, or regulations under the Resource Management Act 1991.	1	
03	As allowed for under section 127 (1)(a) of the Resource Management Act 1991, the Consent Holder may apply for a change or cancellation of any condition of this consent other than the duration of consent, in October 2002 and every year thereafter, for the following purposes: a) to modify any monitoring requirement; and/or b) to change any date given in the consent (other than the duration of the consent).	1	
04	The maximum discharge rate of treated effluent shall be 6m <sup>3</sup> /s.	1	
05	The quality of the effluent to be discharged shall be equal to or better than the following parameter concentrations before discharge: Total BOD <sub>5</sub> (gO/m <sup>3</sup> ) - median 20, over 1 year no more than 16 exceedances above 20; non-filterable residue (g/m <sup>3</sup> ) - median 35, 95th percentile 75, for any three month period, no more than 23 exceedances above 35 and no more than 4 exceedances above 75; total nitrogen (gN/m <sup>3</sup> ) - from 1 July 2001, median 30, over one year no more than 8 exceedances above 30; ammoniacal nitrogen (gN/m <sup>3</sup> ) - median 10, over 1 year no more than 8 exceedances above 10; DRP (gP/m <sup>3</sup> ) - median 10, over 1 year no more than 8 exceedances above 10; faecal coliforms (cfu/100mL) - median 1,000, 95th percentile 10,000, for any 3 month period no more than 23 exceedances above 1,000 and no more than 4 exceedances above 10,000; enterococci (cfu/100mL) - median 100, 95th percentile 1,000, for any 3 month period no more than 23 exceedances above 100 and no more than 4 exceedances above 1,000.	1	

Condition Number	Consent Conditions Rosedale WWTP Discharge to Water – Hauraki Gulf of Mairangi Bay (#23799)	Compliance Rating	Comment
06	<p>The above parameters, and any others, are to be monitored, analysed and reported generally in accordance with Technical Report 33 submitted in support of this application. The Monitoring Management Plan required by consent 23798 shall be reviewed prior to exercising this consent, and shall be approved by the Manager within 3 months of the exercising of the consent. The Consent Holder shall comply with the Plan which shall stipulate the precise technical details of monitoring programmes required for the compliance with the conditions of this consent, in particular: a) effluent monitoring requirements; b) specific monitoring locations; c) parameters to be monitored; d) methods and frequency of monitoring; e) "Alert" and "Response" trigger levels defining further contingency actions by the Consent Holder.</p>	1	
07	<p>The Consent Holder shall, to the satisfaction of the Manager, record and report the frequency and duration of plant bypass flows and shall analyse for all parameters and by the methods listed in the Monitoring Management Plan, with the exception of trace metals, persistent organic compounds, each time such a discharge occurs. The Consent Holder shall inform the Manager within 24 hours of use of the by-pass system, and report monitoring data to the Manager within 3 weeks.</p>	1	
08	<p>A zone of non-compliance shall exist within a radius of 150 m of the diffuser ports within which exceedances of water quality parameters for contact recreation (median and alert level 2, MFE 1999) shall be confined. The zone of non-compliance may be reviewed by the Manager, in consultation with the Consent Holder, in the Monitoring Management Plan.</p>	1	
09	<p>The Consent Holder shall, at the least, monitor the receiving environment generally as specified in Technical Report 34 submitted in support of this application. The environmental monitoring, as part of the Monitoring Management Plan is to be approved by the Manager within 6 months of the exercising of this consent. The Consent Holder shall complete and comply with the Monitoring Management Plan which shall stipulate the precise technical details of monitoring programmes required for the compliance with the conditions of this consent, in particular: a) environment monitoring requirements; b) specific monitoring locations; c) parameters to be monitored; d) methods and frequency of monitoring; e) "Alert" and "Response" trigger levels defining further actions by the Consent Holder.</p>	1	

Condition Number	Consent Conditions Rosedale WWTP Discharge to Water – Hauraki Gulf of Mairangi Bay (#23799)	Compliance Rating	Comment
10	Signage shall be erected if considered necessary by the Manager following consultation with the Medical Officer of Health to warn of public health concerns regarding shellfish gathering from occasional or regular effects from the exercise of this consent, within 3 months of the exercise of this consent. The signage wording and location shall be to the satisfaction of the Manager, in consultation with the Medical Officer of Health. A review of the wording, placement of and need for, the signage may be instigated from time to time, by the Manager, in consultation with the Medical Officer of Health and the Consent Holder.	1	
11	The Consent Holder shall provide a detailed health risk assessment of the effects of the outfall, to the satisfaction of the Manager, two years after the exercise of this consent and every five years thereafter. The purpose of the assessment shall be to provide information of the microbiological impacts of the discharge under all flow conditions and include monitoring data from actual discharges at time of high flows.	1	Completed in 2025. Next due 2030.
12	In addition to condition 17, the Consent Holder shall review the treatment plant discharges of contaminants to water with the Manager in 2020. In order to determine if the discharges from the plant and treatment processes remain the best practicable option the review shall commence no later than 1 February 2020 and shall include: a) a health risk assessment of the potential adverse effects of the outfall discharge. The health risk assessment shall consider all flow and discharge data and environmental conditions and any other relevant matters; b) an assessment of alternative disposal options, including disposal to land; and c) the outcomes of public consultation and consultation with Tangata Whenua relating to the discharge of contaminants to water from the outfall. The Consent Holder may be required by the Manager to submit an updated assessment of effects and may be required to provide further information to the Manager in order for the Manager to determine, or recommend to the Minister of Conservation, whether the proposal is currently the best practicable option, or whether the conditions of consent 23799 should be amended in accordance with condition 17(d). This review shall be completed as soon as practicable and in any event no later than 31 December 2022. See consent condition for further detail.	1	
13	The Consent Holder shall provide written notice no less than two weeks (and preferably longer) previous to any programmed unavailability of the Mairangi Bay outfall to the Manager and the Medical Officer of Health.	1	

Condition Number	Consent Conditions Rosedale WWTP Discharge to Water – Hauraki Gulf of Mairangi Bay (#23799)	Compliance Rating	Comment
14	The treatment plant shall be optimised to avoid, as far as practicable, any untreated effluent from entering the ponds. Except in circumstances beyond the reasonable control of the Consent Holder wastewater flows shall not enter the ponds without prior treatment process. When faecal coliform and enterococci levels set out in condition 6 are not achieved through the main treatment process or peak flow treatment and naturally in the ponds, artificial disinfection shall be used to ensure the levels are met. If any test for enterococci or faecal coliforms exceeds the 95 percentile level, it shall be repeated within 24 hours and artificial disinfection shall be used at up to its maximum design capacity so that the level reduces to below the median level at the earliest practicable opportunity.	1	
15	The Consent Holder shall review the current Trade Waste Programme upon the exercise of this consent, and at five yearly intervals in consultation with the ARC and any other reasonably affected parties the consent holder identifies through that review process. The review shall include, amongst other matters, a risk assessment regarding contaminants of relevance to sustainable biosolids reuse.	1	Next due 2027.
16	The Consent Holder shall investigate and report on alternative disposal options and beneficial reuse trials in consultation with the ARC, Tangata Whenua and the community. The report shall include results of irrigation trials at the treatment plant site, results of any other irrigation trials, results and progress of reuse of treated effluent and other matters the Consent Holder considers practicable or appropriate. The report shall be submitted, to the satisfaction of the Manager, 6 months after the exercise of this consent and shall be resubmitted at five yearly intervals thereafter.	1	Next due 2027.
17	Conditions of this consent may be reviewed by the Manager pursuant to Section 128 of the RMA 1991, by the giving of notice pursuant to Section 129, on 31 December 2012 and every three years thereafter in order to: a) Deal with any significant adverse effect on the environment arising from the exercise of the consent and which is appropriate to deal with at the time of the review; or b) Alter the monitoring requirements, including requiring further monitoring, or increasing or reducing the frequency of monitoring; or c) Implement the rules of any relevant regional plan that is proposed or becomes operative; or d) Require the Consent Holder to adopt the best practicable option to prevent or minimise any adverse effect of any discharge on the environment that may arise from the exercise of this consent, including to take into account any recommendations of the Manager or the Minister of Conservation arising from the review required by condition 12.	1	

**Appendix D-2 Assessment of Compliance with Consent Conditions Rosedale WWTP Discharge to Air – Rosedale Road, Albany (#30249)**

Condition Number	Consent Conditions Rosedale WWTP Discharge to Air – Rosedale Road, Albany (#30249)	Compliance Rating	Comment
01	ARC agents may access the property at reasonable times to carry out inspections, surveys, tests, or measurements, or to take samples.	1	
02	That the Consent Holder shall, as far as practicable, install and operate the plant and associated processes in accordance with the documentation submitted to the ARC in support of application numbers 23792 and 30249. No alterations shall be made to the plant or processes that do not, or are not likely to, comply with the provisions of this consent, a regional rule, or regulations under the Resource Management Act 1991.	1	
03	As allowed for under section 127 (1)(a) of the Resource Management Act 1991, the Consent Holder may apply for a change or cancellation of any condition of this consent other than the duration of consent, in October 2002 and every year thereafter, for the following purposes: a) To modify any monitoring requirement; and/or b) To change any date given in the consent (other than the duration of consent); and/or c) To increase the processing capacity of the plant or to add additional major plant beyond that shown in Drawing X.	1	
04	That the Consent Holder shall maintain an Air Quality Operations and Monitoring Management Plan which accurately records all monitoring, management and operational procedures, methodologies and contingency plans necessary to comply with the conditions of this consent. The Management Plan shall set out a programme for controlling minor odour sources on site within four years of the commencement of the consent. All subsequent substantial changes shall be submitted to the Manager for review prior to becoming operational. The Manager will advise the Consent Holder in writing if any aspects of the Plan are considered to be inconsistent with achieving the provisions of this consent.	1	
05	The Consent Holder shall retain at its cost an independent Peer Review Panel, suitably qualified and knowledgeable in odour assessment and control and wastewater treatment development and operational procedures. The composition of the panel shall be subject to the written approval of the Manager. The Peer Review Panel will be briefed by and report to the Manager and will have no approval rights. The objective of the Peer Review Panel is to review and advise whether all engineering works, operations and related activities associated with the wastewater treatment plant are designed and maintained in accordance with good odour minimisation and control techniques and good engineering practice and whether the plant is operated and managed in accordance with accepted best, practice and in accordance with the intent of the consent conditions.	1	

Condition Number	Consent Conditions Rosedale WWTP Discharge to Air – Rosedale Road, Albany (#30249)	Compliance Rating	Comment
06	The primary function of the Peer Review Panel is to advise the Manager whether the following matters are sufficiently addressed to ensure that the conditions relating to the design, construction and operations are met. These matters are: a) Process design of the wastewater treatment system; b) Odour control; c) Peak flow management and treatment; and d) Contingency Plans.	1	
07	The Consent Holder shall provide the Peer Review Panel with all records, plans, designs and other information that the Peer Review Panel requires to be able to undertake the peer review.	1	
08	Apart from other activities undertaken by the Peer Review Panel, it shall undertake six monthly reviews of treatment plant operations for the first four years of the consent duration and annually thereafter.	1	
09	The Peer Review Panel may, with the written approval of the Manager, seek specialist advice from others on matters panel members are not able to address because these matters are outside their areas of expertise.	1	
10	The Consent Holder shall ensure that record of any investigations and/or test results associated with this consent are kept and that these are forwarded to the Peer Review Panel.	1	
11	Prior to commencing the construction of any works associated with odour control the Consent Holder shall submit all relevant final design calculations, drawings and operational procedures for review by the Peer Review Panel. The Peer Review Panel shall report any findings and recommendations to the Manager.	1	
12	The Consent Holder shall comply with any changes required by the Manager, in design and/or construction and/or operational techniques which may be required at any time based on advice by the Peer Review Panel, if in the Manager's opinion this is necessary to achieve the satisfactory operation of the site and compliance with the conditions of consent.	1	
13	The Consent Holder shall consult with representatives of the local community, including but not limited to, a representative of: a) The local community, including any appropriate local community groups; and b) Users of Rosedale Park; to facilitate the establishment and maintenance of a Treatment Plant Community Liaison Group (TPCLG). The TPCLG should comprise of: no fewer than 5 representatives from those given above, of whom one should ideally be a representative nominated by Tangata Whenua and three should have a clear association with the area in the general vicinity of the treatment plant; and two of the Consent Holder's senior officers to represent it.	1	

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14	The role of the TPCLG is to provide a forum: a) To facilitate communication and dialogue between the Consent Holder, the ARC, and the community; and b) To facilitate communication and dialogue between the Consent Holder and the local community on effects on the community arising from treatment plant operations, in particular matters relating to odour.	1	
15	The Consent Holder shall use its best endeavours to ensure that formal meetings of the TPCLG are held at least every twelve months. The Consent Holder shall provide an appropriate venue for the meetings of the TPCLG. In addition, extraordinary meetings may be called as circumstances warrant. The Consent Holder shall inform all relevant parties and ARC of any meeting of the TPCLG a minimum of 10 working days in advance of that meeting.	1	
16	The Consent Holder shall ensure that the minutes of the TPCLG meeting are forwarded to all relevant parties within two weeks of the meeting being held.	1	
17	The Consent Holder shall assist the TPCLG to fulfil its purpose including by the: a) Provision of information about any treatment plant odours, concerns and complaints of the local community, aspects of non-compliance and remedial actions or proposals; and b) Dissemination of information about the treatment plant and about any future proposals for the plant.	1	
18	That the Consent Holder shall at all times operate, maintain, supervise, monitor and control all processes on site so that emissions authorised by this consent are maintained at the minimum practicable level.	1	
19	That beyond the boundary of the site there shall be no particulate (including dust, aerosol or fume) caused by discharges from the site which, in the opinion of an enforcement officer, is noxious, offensive or objectionable.	1	
20	That beyond the area designated as the "Odour Buffer Zone", there shall be no odour caused by discharges from the site including the treatment plant and associated ponds which, in the opinion of an enforcement officer, is noxious, offensive or objectionable.	1	
21	That the Consent Holder shall at all times operate, maintain, supervise, monitor and control all operations and activities associated with the oxidation ponds to ensure that discharges of odour from the ponds are maintained at the minimum practicable level.	1	
22	That no discharges from any activity on site shall give rise to visible emissions, other than water vapour and steam, to an extent which, in the opinion of an enforcement officer, is noxious, offensive or objectionable.	1	

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23	That beyond the boundary of the site there shall be no hazardous air pollutant, caused by discharges from the site, which is present at a concentration that is likely to be detrimental to human health or the environment.	1	Discussion with Peer Review Panel determined any effects of unburnt gas incidents would be minor.
24	That the Consent Holder shall ensure that the design, construction and operation of all plant and processes undertaken on site shall be in accordance with currently recognised good practice for wastewater treatment plants. In particular, the design of the plant shall ensure compliance with the provisions of this consent any regional rule or regulations under the Resource Management Act 1991. Furthermore, all plant shall be designed, constructed, and operated so as to ensure that discharges of contaminants to air, in particular odour, are kept to a practicable minimum.	1	
25	That all operations which have the potential for dust emissions, including construction activities, shall be carried out in a manner which ensures that dust emissions are maintained at the minimum practicable level. Without prejudice to the generality of this condition, the Consent Holder shall suppress dust emissions by the application of water whenever weather conditions and activities are such that significant visible dust emissions may or do occur.	1	
26	That no part of the process shall be operated without the associated emissions control equipment being fully operational and functioning correctly.	1	
27	That all ducting and emissions control equipment shall be maintained in good condition and as far as practicable be free from leaks in order to prevent the escape of fugitive emissions.	1	
28	That all relevant fans and ducting to air emission control equipment shall draw sufficient negative pressure to ensure that fugitive emissions are kept to a practicable minimum.	1	
29	That any flares on site shall be operated in such a manner as to prevent visible emissions and to have a flame present at all times the flare is in operation. The pilot flame and flame ionisation detector shall be maintained and operated in accordance with best practice.	2	Four incidents relating to a release of unburnt biogas following issues with the flare. The PRP agreed any effects would be minor.
30	That all sludge digesters shall be sealed to prevent, as far as practicable, fugitive discharges to atmosphere and any contaminated or odorous gases not used to generate electricity or burned in a flare shall be extracted to a biofilter prior to discharging to atmosphere.	1	

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31	That only aged biosolids and pond sludge shall be disposed of on site. All biosolids generated within the sludge dewatering/biosolids building (new biosolids) shall be disposed of off site to an appropriately authorised facility. Furthermore, composting of new biosolids or any other treatment of new biosolids on site (except preconditioning or dewatering) is not permitted under this consent.	1	
32	That no solid or liquid waste materials shall be disposed of on the site by open burning.	1	
33	That any peak flow storage tanks storing effluent that is not at least secondary treated shall be covered and odorous gases extracted to a biofilter prior to discharge to atmosphere.	1	
34	That any peak flow treatment system shall be operated so as to ensure that discharges of contaminants to air, in particular odour, are kept to a practicable minimum. Any contaminated, odorous gases shall be extracted to a biofilter prior to discharge to atmosphere.	1	
35	That the activated sludge reactors and secondary clarifiers shall be operated and managed so as to ensure that discharges of contaminants to air, in particular odour, from these sources are kept to a practicable minimum.	1	
36	That all loading of biosolids onto trucks shall occur within the biosolids building.	1	
37	That all odorous air from the biosolids building shall be collected and treated in a scrubber and/or biofilter prior to discharging to atmosphere. The method of treatment shall be designed to achieve at least 95% odour removal efficiency. If a scrubber is utilised it shall be operated and maintained to comply with the following criteria: a) The most appropriate liquor shall be selected for the nature and concentration of the contaminants present in the waste gas stream; and b) The liquor shall be maintained in such a manner so as to achieve effective and efficient removal of the contaminants present in the waste stream.	1	
38	That, unless agreed otherwise in writing by the Manager, all biofilters shall be designed, operated and maintained to comply with the following criteria: a) The filter media shall be no less than 1 metre in depth; b) The inlet temperature of any gases entering the bed shall not exceed 35°C; c) The maximum ratio of gas volume to bed cross sectorial area shall not exceed 50m <sup>3</sup> /M <sup>2</sup> /hr; d) The bed moisture content shall be maintained at a level which ensures that there is no breakthrough or bypassing of untreated or partially treated air; e) The distribution system shall ensure even dispersal of gases throughout the filter bed; f) The sides of the filter bed shall ensure there is no breakthrough of untreated air; and g) The beds shall be capable of running with part of the bed isolated from the incoming gas flow for maintenance purposes.	1	

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39	That the Consent Holder shall undertake a community based odour survey within three months of the commencement of the consent and every two years thereafter for the term of the consent for the purpose of assessing the effectiveness of odour control at the plant and the levels of off-site odour. The survey shall be undertaken to the satisfaction of the Manager and shall be carried out in accordance with procedures set out in the Air Quality Operations and Monitoring Management Plan.	1	
40	The results of the survey including a discussion as to the implication of these results shall be provided to the Manager within 2 months of the survey being undertaken.	1	
41	That the Consent Holder shall undertake monitoring of odour discharge rates every six months until 1 April 2005 and thereafter every 12 months for the term of the consent. The monitoring shall take place during the summer on: a) All biofilters, unless the Manager agrees otherwise in writing; b) The exit point of any other air pollution control equipment; c) At least one chemically assisted sedimentation tank (if operational and uncovered at the time of testing); d) One representative activated sludge reactor tank; and; e) One representative activated sludge clarifier.	1	Most recently completed in May 2025 for monitoring undertaken Jan – March 25. Report attached as Appendix F.
42	That, if the Manager has reason to believe that sources other than those in Condition 41 above are sources of significant odour, the Manager may, in writing, require odour emission rates to be determined for that source.	1	
43	The monitoring shall be carried out in accordance with the procedures set out in the Air Quality Operations and Monitoring Management Plan. The monitoring shall be by Dynamic Dilution Olfactometry and shall include sufficient samples to fully quantify odour discharge rates from each source.	1	
44	That, if the results of odour emission monitoring specified in Conditions 41 and 42 show that the odour emission rates from a source or sources are significantly greater than those used in the atmospheric dispersion modelling supporting the application for this consent (in particular the activated sludge reactors or the activated sludge clarifiers) further atmospheric dispersion modelling may be required by the Manager to better evaluate the actual or potential effects of these emissions. This modelling shall be carried out by the Consent Holder to the satisfaction of the Manager and the results provided to the Manager within 20 working days of receipt of written notification from the Manager. Note: If the results of the monitoring and any modelling specified above demonstrate significant differences with the information presented with the consent application the Manager may review the provisions of the consent in accordance with Section 128(1)(c) of the Resource Management Act 1991.	1	

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45	That the Consent Holder shall undertake a walkover inspection of the treatment plant and surrounding neighbourhood no less frequently than weekly until 30 June 2005 and fortnightly thereafter until at least 31 December 2005. Monthly walkover inspections may proceed from 1 January 2006 subject to review and approval by the Peer Review Panel and the Manager. Any evidence of actual odour shall be recorded and investigated. Where necessary remedial action shall be undertaken as soon as practicable. The procedures for the walkover, recording of the results and remedial actions shall be detailed in the Air Quality Operations and Monitoring Management Plan.	1	
46	That in the event that regular or frequent complaints regarding dust from the site are received and validated by an enforcement officer, the Consent Holder shall undertake monitoring of total suspended particulate (TSP) to the satisfaction of the Manager.	1	
47	That all monitoring and testing shall be carried out to the satisfaction of the Manager.	1	
48	That the results of all tests, relevant operating parameters, raw data, all calculations, assumptions and an interpretation of the results (including a comparison with previous monitoring) shall be submitted to the Manager within 20 working days of the samples being taken.	1	
49	That on site weather conditions shall be continuously measured and recorded. The parameters measured shall include: a) Wind velocity and direction; b) Rainfall; and c) Temperature.	1	
50	That all records, monitoring and test results that are required by the conditions of this consent shall be made available on request, during operating hours, to an enforcement officer and shall be kept for a minimum period of 24 months from the date of each entry.	1	
51	That the Consent Holder shall notify an enforcement officer as soon as practicable in the event of any significant increase in the discharge of contaminants to air, which has resulted or may result in adverse effects on the environment. In the event of an incident occurring the Consent Holder shall provide a written report to the Manager within 10 days of the occurrence. The report shall give reasons for the incident, mitigation measures taken and any measures taken to prevent its reoccurrence.	1	
52	That the Consent Holder shall log all air quality complaints received. The complaint details shall include: a) The date, time, position and nature of the complaint; b) The name, phone number and address of the complainant, unless the complainant refuses to supply these details; and c) Any remedial actions undertaken.	1	
53	Details of any complaints received shall be provided to the Manager as soon as practicable and at least within 24 hours of receipt of the complaint/s.	1	

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54	Conditions of this consent may be reviewed by the Manager pursuant to Section 128 of the RMA 1991, by the giving of notice pursuant to Section 129, in June 2002 and every 2 years thereafter, for the purpose of anything listed in (a) to (j) of the consent condition.	1	