Army Bay Wastewater Treatment Plant
Annual Report

Final - September 2025

Watercare

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REVISION HISTORY

Rev	Revision Date	Name	Position	Signature
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APPROVED

Date	Name	Position	Signature
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CONSENT CHANGE AND MONITORING HISTORY

Change type	Description	Effective date	Reference / condition	Reporting / monitoring implications
Discharge consent	Consent to discharge contaminants from Army Bay WWTP		34088	Monitoring discharge volumes, discharge quality, shellfish quality. Prepare annual reports and management plan.
Consent reissue	To replace resource consents for the discharge of contaminants from Army Bay WWTP, and to enable staged upgrades to be constructed on site	Dec 2019 valid till Dec 2054	DIS60331146 & DIS60331113 under bundle BUN60331144	Different conditions apply and cease as staged upgrades are completed. Flow amendment CLGs to be held annually.
Reporting deadlines	Annual performance report Report summarising results of the REMP Review of the REMP	Dec 2019 valid till Dec 2054	DIS60331146 & DIS60331113 under bundle BUN60331144	Annual report submitted by 30 September each year Submit REMP in 2020 Following 2nd year of sampling and then at 5 yearly intervals, submit independent review of the REMP
REMP	REMP document revised and re-submitted in April 2020	April 2020	Condition 18 of DIS60331146 & DIS60331113 under bundle BUN60331144	Revised for certification
REMP review	Suggest improvements following two years of sampling	Submitted Sep 2022	Condition 21 of DIS60331146 & DIS60331113 under bundle BUN60331144	To include DO measurements, assess nutrient data in winter months and chlorophyll-a data in summer
Consent variation	To extend duration of the existing short term discharge standards for 4 years	Submitted June 2025	S127 consent variation	Would include continued operation and reporting under existing short term discharge conditions until Dec 2030
Stage 1 conditions	First stage of upgrades require certain standards		DIS60331146 & DIS60331113 under bundle BUN60331144	Ave dry weather flow limit is 22,500m^3/d Peak dry weather flow limit is 65,400 m^3/d Max instantaneous flow (wet weather) limit is 1,010 L/s UV dose increases to 35 mJ/cm^2

				Tighter limits of $cBOD_5$, TSS and ammonia standards Additional total N limit Emerging contaminants risk assessment prepared within 6 months Technology & growth report prepared within 1 year, then at 5 yearly intervals
Stage 2 conditions	Second stage of upgrades require certain standards		DIS60331146 & DIS60331113 under bundle BUN60331144	Ave dry weather flow limit is 31,500m^3/d Peak dry weather flow limit is 92,000 m^3/d Max instantaneous flow (wet weather) limit is 1,417 L/s Emerging contaminants risk assessment prepared within 6 months
Stage 3 conditions	Third stage of upgrades require certain standards		DIS60331146 & DIS60331113 under bundle BUN60331144	Ave dry weather flow limit is 42,410m^3/d Peak dry weather flow limit is 129,000 m^3/d Max instantaneous flow (wet weather) limit is 1,964 L/s Emerging contaminants risk assessment prepared within 6 months and at 5 yearly intervals

EXECUTIVE SUMMARY

This annual report for the Army Bay Wastewater treatment Plant (WWTP) outline's the plant's operational performance, incidents, compliance with consent conditions, and environmental impacts for the 2024-2025 reporting period. The report fulfils the requirements under consents DIS60331113 and DIS60331146, which oversee the discharge of wastewater and air emissions, respectively.

Key findings include:

Treatment plant overview

The WWTP is an activated sludge facility, discharging treated effluent to the Hauraki Gulf. No operational incidents were recorded during the reporting period. Upgrades are underway, including inlet screen improvements and reassessment of the staged upgrade plans.

Discharge flow compliance

The plant remained fully compliant with discharge flow conditions with annual, daily and instantaneous discharge volumes within consented limits. A positive trend in daily flow volumes over five years suggests increasing demand or inflow and infiltration.

UV treatment

The current UV disinfection system, consisting of one channel with four UV banks, is unable to meet dosing requirements during high flow events. As a result the plant was non-compliant with the consented UV dose (25 mJ/cm² for 99% of the time) for six months of the year. Installation of two additional UV banks is planned to begin in August 2026, followed by an additional UV channel the following year. Furthermore, despite this non-compliance, there have been no indication of the reduced disinfection affecting the receiving environment, as indicated by the 2025 REMP report.

Discharge quality compliance

Effluent quality consistently met consented limits for $cBOD_5$, ammoniacal nitrogen, and total suspended solids. Weekly sampling confirmed that rolling 12-month medians and 92nd percentiles remained within required thresholds.

Odour management: Six-monthly odour monitoring reports indicated minimal odour, and no complaints were received during the reporting period.

Receiving environment monitoring

Water quality in the receiving environment remains generally stable, with only localised effects observed in nitrate and total oxidised nitrogen. Shellfish microbiological monitoring indicates other sources rather than the WWTP is responsible for elevated levels observed at some sites.

Future actions

The planned upgrades for 2025 and 2026 are expected to address issues related to solids carryover and UV dosing, improving overall plant performance.

Overall, the Army Bay WWTP has performed relatively well, despite UV dose compliance issues that are being addressed. There were no significant environmental or community impacts observed. Planned upgrades will continue to improve the plant's operational efficiency and environmental performance.

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LIST OF ABBREVIATIONS AND ACRONYMS

Abbreviation	Description
$cBOD_5$	5-day carbonaceous biochemical oxygen demand
DO	Dissolved oxygen
DRP	Dissolved reactive phosphorus (synonym: dissolved soluble phosphorus)
E. coli	Escherichia coli
NH_4-N	Ammoniacal nitrogen (ammonia + ammonium, reported as mg N/L)
NO_2	Nitrite, reported in milligrams nitrogen
NO_3	Nitrate, reported in milligrams nitrogen
TIN	Total inorganic nitrogen (NH_4-N + NO_2 + NO_3)
TN	Total nitrogen
TP	Total phosphorus
TSS	Total suspended solids
UV	Ultraviolet disinfection (dose, expressed in mJ/cm^2)
Watercare	Watercare Services Limited
WWTP	Wastewater treatment plant

1 INTRODUCTION

1.1 Outline

The Army Bay Wastewater Treatment Plant (WWTP) is on the eastern edge of the Whangaparāoa Peninsula (Figure 1-1). The WWTP is an activated sludge plant that uses the following treatment devices and processes for the treatment of wastewater and management of biosolids:

- Screening and grit removal
- Sequencing batch reactors
- Sludge dewatering (gravity belt thickener and centrifuge)
- Biofilters
- Balancing ponds (to control the rate of effluent discharge)
- UV disinfection

Treated effluent discharges via an outfall to the Whangaparāoa Passage in the Hauraki Gulf. All dewatered biosolids go to a permitted worm farm.

Figure 1-1 Aerial image of the Army Bay WWTP

1.2 Report purpose and outline

This report aims to fulfil the annual reporting requirements of condition 36 in consent DIS60331146 and DIS60331113 (Table 1-1). These consents are part of a bundle consent (BUN60331144) which enables the staged upgrades to the plant whilst continuing to service its communities. This report covers compliance for the reporting period 1 July 2024 – 30 June 2025.

Table 1-1 Annual report requirements as per condition 36

Requirement	Details to include	Consent condition	Report section
Treated wastewater quality	All monitoring results for treated wastewater discharges; assessment against median and 92nd percentile limits for $cBOD_5$, TSS, NH_4-N, TN, TP; confirmation of UV dose compliance (≥25 mJ/cm² short-term, ≥35 mJ/cm² post-Stage 1); MBR turbidity results once upgrades are commissioned	Conditions 6–7, 9–12	Section 3.5
Additional parameters	Weekly/monthly/6-monthly monitoring of pH, temperature, salinity, turbidity, nutrients, faecal coliforms, Enterococci, DRP, metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Hg), organic compounds (PAHs, PCBs, pesticides), oil and grease	Conditions 8, 11	Section 3.6
Flow and volume	Daily inflows to the WWTP; daily discharge volume to outfall; compliance with ADWF, PDWF, PWWF and instantaneous flow limits	Conditions 6, 9, 15	Section 3.3
Receiving environment monitoring (REMP)	Monthly water quality at coastal sites (DO, temp, cond, pH, TSS, bacteria, chlorophyll-a, nutrients); shellfish quality; marine ecological and benthic surveys; interpretation of trends	Conditions 18–20	Section 3.9
Odour monitoring	Six-monthly odour field assessments; record of odour complaints, investigations, and outcomes	DIS60331113 (air discharge), general conditions	Section 3.7
Incidents and non-compliance	Summary of exceedances, non-compliances, spills or incidents; investigation findings; remedial actions; assessment of environmental effects	General condition, Condition 14	Sections 2.2 and 3.10
Works and upgrades	Progress on Stage 1–3 upgrades; confirmation of as-built certification if works completed; updates on interim works to maintain compliance	Conditions 5, 9	Section 2.1
Overall compliance statement	Clear statement on overall compliance for the reporting year; note any risks to future compliance	Condition 36	Section 3.10

2 TREATMENT PLANT

2.1 Changes to the treatment plant

2.1.1 Inlet screen upgrades

The business case for upgrading the inlet screens has been approved. The detailed design is being reviewed, and construction should commence in October 2025.

2.1.2 Staged upgrades

The concept plans for the staged upgrades specified in the consent are being reassessed. Works relating to the staged upgrades are yet to commence.

2.2 Incidents

There were no incidents at the WWTP recorded during this reporting period.

3 COMPLIANCE

3.1 Introduction

The consent states that the following conditions apply, until the Stage 1 upgrade has been commissioned:

a) Annual average dry weather flow shall not exceed 13,500 m^3 per day
b) The maximum daily treated wastewater discharge volume from the WWTP to the coastal marine area shall not exceed a maximum daily discharge of 39,825 m^3 per day (at peak dry weather flow), and a maximum instantaneous flow of 750 L/s (at peak wet-weather flow).
c) The Consent Holder shall ensure that a validated Ultraviolet (UV) dose of 25 mJ/cm^2 is delivered by the UV disinfection facility for 99% of the time (calculated based on a 15-minute average) over each calendar month.

In addition to the above, reporting is undertaken to demonstrate compliance with the conditions of consents DIS60331146 (treated wastewater discharge) and DIS60331113 (air discharge). These consents require:

- Treated wastewater quality monitoring (weekly to six-monthly sampling of physical, chemical, and microbiological parameters, assessed against short-term standards and, in future, staged upgrade limits).
- Air quality and odour monitoring (six-monthly odour field surveys and a log of any community complaints).
- Receiving environment monitoring (REMP) to assess water quality, shellfish quality, and marine ecology in the coastal environment around the Army Bay outfall.
- Complaints management including recording and reporting of any odour or discharge-related complaints.

This section presents the monitoring results for the reporting year, along with an assessment of compliance with consent limits. Watercare assesses compliance with the consent using the same compliance rating system utilised by the Auckland Council (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 a 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 Methods- data processing and statistics

Monitoring data for treated wastewater quality, flow and receiving environment parameters were compiled from Watercare's operational monitoring records and laboratory certificates. (Appendix D details specific data tags used in preparing this report). Laboratory analyses were undertaken by IANZ-accredited provider using standard methods for the examination of water and wastewater.

All data were quality-checked for transcription errors and completeness prior to analysis. For parameters with consent limits expressed as rolling medians or percentiles, results were processed using the following approaches:

- Median values: calculated over a rolling 12-month period using all valid samples.
- 92nd percentiles: calculated annually, based on a rolling 12-month dataset where 11 of 12 monthly values must comply with the stipulated limit.
- UV compliance: assessed as the proportion of 15-minute average SCADA records meeting or exceeding the validated dose requirement. Monthly compliance percentages were calculated to demonstrate performance against the 99% standard.
- Flow compliance: daily inflow and discharge records from calibrated flow meters were processed into daily totals and rolling averages. These were compared with consent thresholds for average dry weather flow (ADWF), peak dry weather flow (PDWF), and peak wet weather flow (PWWF). Rainfall records were also included to illustrate the influence of wet weather on flows (Figure 3).

Where relevant, statistical trend analyses (e.g. Kendall's Tau) were applied to long-term monitoring datasets to identify significant changes over time. Data below analytical detection limits were reported as "<DL" and included in summary statistics at half the detection limit, consistent with standard environmental monitoring practice.

3.3 Discharge volumes

The annual average dry weather flow for the 2024-2025 reporting period was 11,996.69 m^3 /day, and is therefore compliant against the consented limit of 13,500 m^3 /day. There were also no instances during the reporting period, of the total daily treated effluent discharge volumes reaching or exceeding the consented dry weather flow limit of 39,825 m^3/day (Figure 3-1). Additionally, the instantaneous flow never exceeded the 750 L/s maximum flow rate limit for peak wet weather, during the reporting period, with highest flows aligning with high rainfall (Figure 3-2).

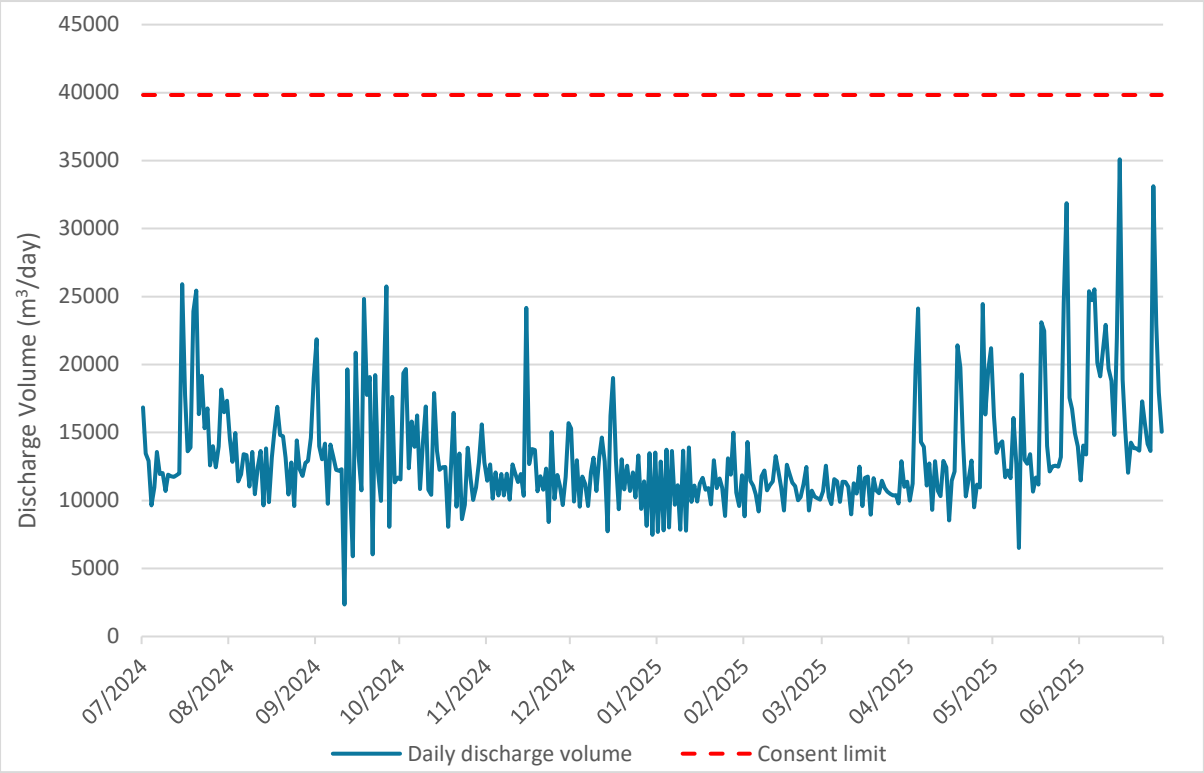

Figure 3-1 Total daily treated effluent discharge volumes for the Army Bay WWTP, for the reporting period July 2024 - June 2025.

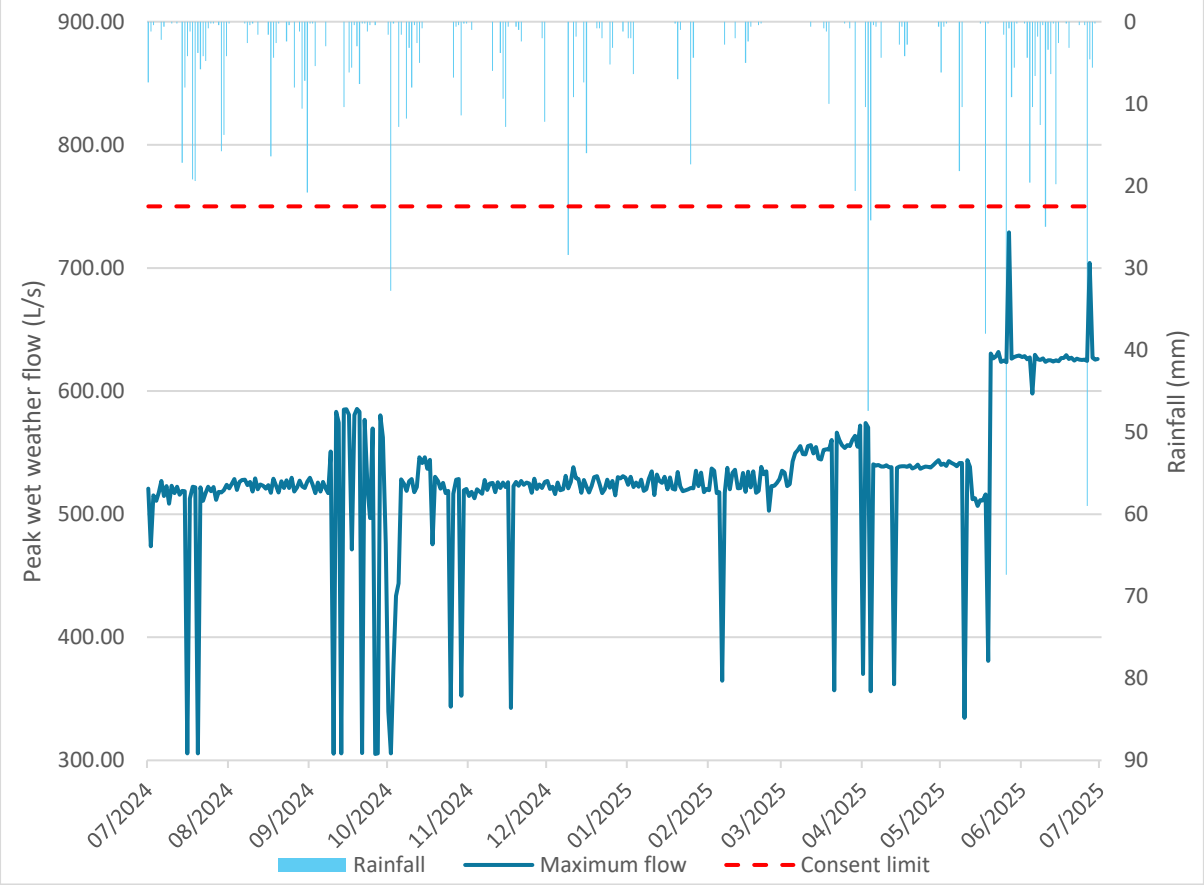

Figure 3-2 Maximum instantaneous discharge flow rates and total daily rainfall for the reporting period July 2024- June 2025.

3.3.1 Discharge volume trends

Based on the past five reporting periods, a relationship between daily flow patterns and annual rainfall has been observed with highest and lowest annual rainfall coinciding with the maximum and 92nd percentiles of daily flow volumes for the same reporting periods (Figure 3-3). Additionally, the winter months, particularly June and July have consistently higher flow volumes, and the drier months, particularly January, March and April have consistently low flow volumes, compared to the long-term average (Figure 3-4).

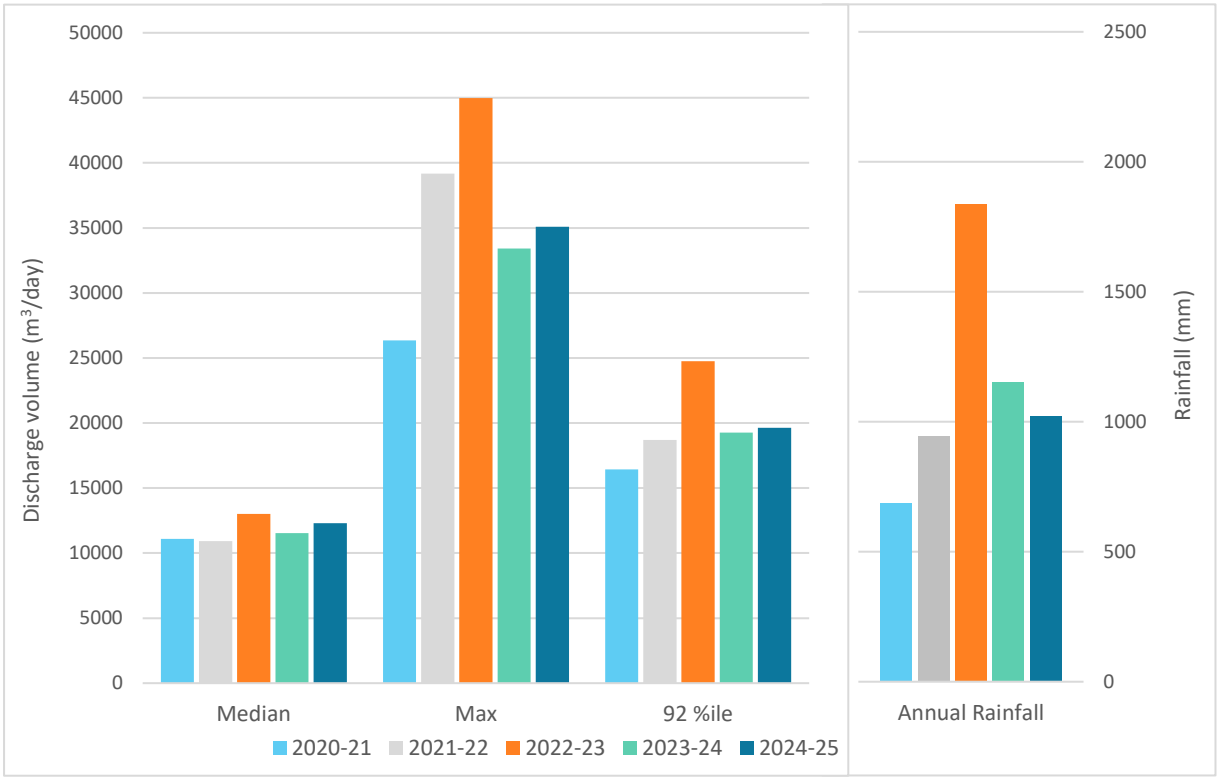

Figure 3-3 Daily flow rate patterns for current and previous reporting periods since 2020 and the total annual rainfall for the five reporting periods.

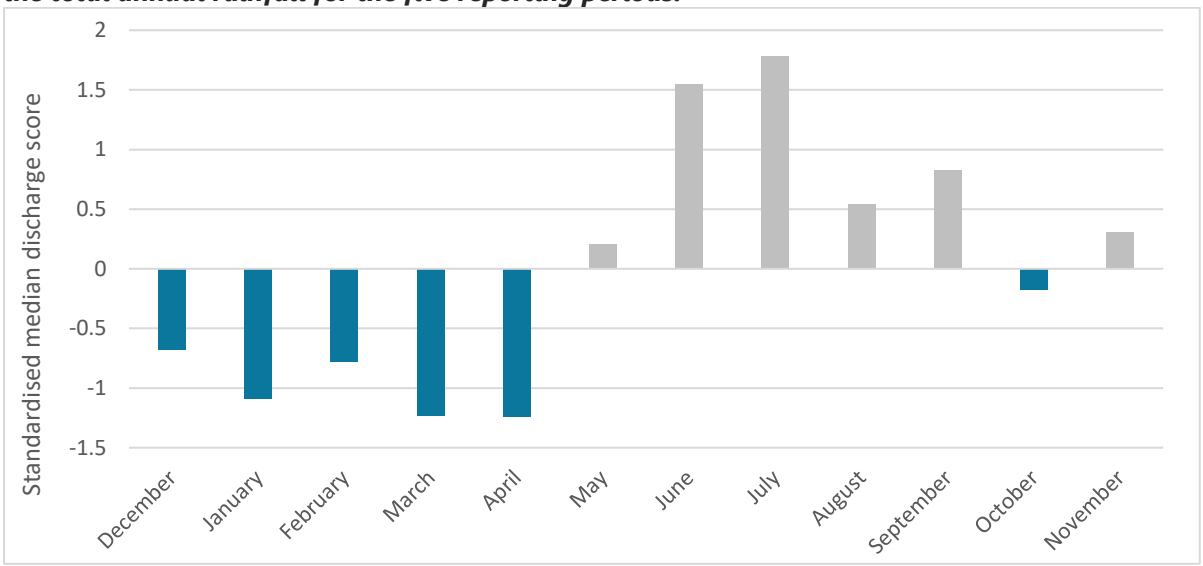

Figure 3-4 Chart presenting standardised scores of the median discharge volumes for each calendar month over the 5-year period. (Scores are calculated using z-scores, indicating deviation from overall average).

A Kendall Tau test was also conducted on daily flow data for the past 5 reporting periods and a weak but statistically significantly positive correlation was identified over time (Tau[1] = 0.154, p-value < 0.001). This increasing trend in daily flow suggests a gradual increase in either or both the population size/ demand, or in inflow and infiltration within the wastewater network.

3.4 UV dosing

Currently the Army Bay WWTP has one channel with four UV banks to dose the treated water. This UV disinfection system cannot meet UV dosing requirements when flow rates are above approximately 550 L/sec. As such, when the wastewater network is surcharging because of high inflows and infiltration during wet weather events or pump station failures, the flow volumes delivered to the WWTP and through the UV channel is too high to allow for the required dosing.

During the 2024-2025 reporting period, the consented limit of 25 mJ/cm^2 for 99% of the time for each month, was only met for 6 months of the year. As presented in Table 3-2, during the wetter months of May through to October, the UV dose rate of 25 mJ/cm^2 was delivered between 86.9% to 98.8% of the time, and thus we are non-compliant against condition 6c.

Due to the limitations of the current UV disinfection system and the resulting non-compliance, the upgrade works to the UV disinfection system has been prioritised with works scheduled to begin by next winter (August 2026). The first project involves installing two new UV banks into the current channel, then the following year, an additional UV channel with another six banks will be constructed. This will more than double the UV dosing capacity, to ensure no further non-compliance in the future.

There is no evidence of environmental effects to the marine environment resulting from this: refer to Section 3.9 for a summary of the REMP, and Section 4 of the 2020-2025 REMP report.

Table 3-2 Monthly average applied UV dose above 25 mJ/cm^2 for the reporting period July 2024 - June 2025

Month	UV dose above 25 mJ/cm^2 (%)	Month	UV dose above 25 mJ/cm^2 (%)
Jul 2024	88.5	Jan 2025	100.0
Aug 2024	98.8	Feb 2025	100.0
Sept 2024	91.4	Mar 2025	99.9
Oct 2024	86.9	Apr 2025	100.0
Nov 2024	99.9	May 2025	94.1
Dec 2024	99.8	Jun 2025	96.7

[1] Kendall's Tau is a non-parametric correlation coefficient ranging from –1 to +1. Values close to 0 indicate very weak correlation, while values approaching ±1 indicate strong correlation. As a general guide: |Tau| < 0.2 = very weak; 0.2–0.4 = weak; 0.4–0.6 = moderate; 0.6–0.8 = strong; >0.8 = very strong.

3.5 Treated wastewater discharge quality

The raw treated wastewater quality results sampled each week during the 2024-2025 reporting period are presented in Table 3-3 along with the rolling 12 month median and 92nd percentile, which are calculated using data from the previous 2023-2024 reporting period as well. At no point during this reporting period have the water quality results exceeded the standards set in condition 7 of the consent. As such, these results indicate the plant is performing well at treating effluent, despite the limitations with the current UV dosing bank.

Table 3-3 Summary of effluent quality results for cBOD5, ammonia and total suspended solids, presenting range in calculated rolling 12-month median and 92nd percentile values for the 2024-2025 reporting period, compared to the corresponding consented limit

Parameters	n	Median Range	Consent Limit-Median	92nd%tile Range	Consent Limit-92nd %ile
$cBOD_5$ (mg O_2/L)	51	1.7-2.0	20	4.4-7.5	35
Ammonia (mg/L)	52	0.23-10.0	15	-	-
TSS (mg/L)	52	3.4-4.6	35	11.9-19.0	75

3.6 Trace metals and additional parameters

In accordance with Condition 8, a suite of trace metals (arsenic, cadmium, copper, chromium, lead, zinc, nickel and mercury), additional nutrient parameters (nitrate, nitrite, total nitrogen, total phosphorous and dissolved reactive phosphorus), bacterial indicators, organic compounds and also total oil and grease are monitored at the discharge point.

The consent does not impose specific compliance limits for these parameters, but it does require ongoing monitoring to track trends and ensure that any potential accumulation of contaminants is detected.

Trace metals monitoring results for the 2024–2025 reporting period showed very low concentrations, well below relevant guideline thresholds. Nutrient levels were mostly consistent throughout the reporting period with a slight decreasing trend over the year. A few small peaks were observed, namely nitrate and total nitrogen during October 2024, in line with UV dosing requirement failures. Bacterial indicators, enterococci and faecal coliforms, were low for most of the year, with the median calculated at 20 and 94 CFU/100mL respectively. However, there were large peaks observed during the wetter months, which also coincide with the months that the UV dosing requirements were not met. This indicates the failure to meet the required levels of disinfection prevented the removal of bacterial contamination.

Organic compounds and oil and grease monitoring is conducted once in summer and again in winter, with all results showing very low levels, and the majority below detectable levels.

All treated effluent quality results are provided in Appendix A.

Figure 3-5 Summary of Army Bay WWTP treated effluent quality for the 2024-2025 reporting period, arrows indicate change from 2023-24 reporting period based on median & 92nd %ile values

Parameters	Unit	n	Median	Min	92nd %ile	Max
Physicochemistry						
Temperature	˚C	55	19.7 ↓	17.4	24.38 ↑	24.7
pH	-	52	6.8 ↓	6.5	7.1 ↓	14
Nutrients						
Nitrite	mg N/L	52	0.48 ↑	0.05	0.8364 ↑	1.28
Nitrate	mg N/L	47	15.0 ↑	8.63	17.67 ↑	24
Total N	mg N/L	52	21.1 ↑	17.4	43.30 ↑	63.6
DRP	mg P/L	52	5.36 ↑	2.41	7.43 ↑	9.8
Total P	mg P/L	52	5.7 ↑	2.52	8.79 ↑	9.51
Bacterial indicators						
Enterococci	cfu/100 mL	43	20 ↑	1.6	3056 ↑	8,900
Faecal coliforms	cfu/100 mL	52	94 ↑	1.6	7888 ↑	58,000
Heavy metals (total)						
Arsenic	µg/L	2				0.0021 ↓
Cadmium	µg/L	2				0.00005 ↓
Lead	µg/L	2				0.0002 ↓
Mercury	µg/L	2				0.00005 ↓

3.7 Air quality

The six-monthly odour reports did not record any distinct or strong odours, with only very weak or weak odours detected at the grit bin on both monitoring occasions, and at the biofilter, centrifuge room and sludge tanks recording on one of the two monitoring occasions. Copies of the odour reports can be found in Appendix C.

3.8 Complaints

No complaints were reported against the Army Bay WWTP during the reporting period.

3.9 Receiving environmental monitoring

Attached to the Army Bay WWTP annual report, is the 2024 -2025 REMP report. This report covers receiving water quality and shellfish monitoring during the period from July 2024 to June 2025 along with trend analysis for the 2020-2025 reporting period. The main findings of the REMP were:

- Most of the receiving water quality parameters were stable across sampling sites, however; significant spatial differences in total oxidised nitrogen (TON) and nitrate were revealed at the inner sites
- Decreasing trend in cBOD5 levels were observed in both treated effluent and inner sites of the receiving environment
- There is no evidence of the outfall causing eutrophication or seasonal nutrient build-up
- Spatial analysis of shellfish microbiology suggests contamination sources are unrelated to the outfall
- Shellfish heavy metal analysis suggests the observed cadmium contamination is also unrelated to the outfall

3.10 Summary of compliance

Appendix B lists a condition-by-condition assessment of compliance for the Army Bay WWTP. The overall compliance rating is a **Category 2**. To summarise, there was one condition that was non-compliant, and is detailed below in Table 3-4.

Table 3-4 Presents the non-compliant conditions and the associated plans and timeframes to rectify these issues for the 2024-2025 reporting period

Condition	Issue	Mitigation	Timeframe
6c: Ultraviolet dose of 25 mJ/cm2 is delivered by the UV disinfection facility for 99% of the time	When effluent flow is too high, the required UV dosing is not met for 99% of the time	New UV banks and then the following year, a new UV channel is planned, to improve dosing capacity	2026-2027
20e: Shellfish / Kaimoana Monitoring, to understand the risks to human health of the discharge, using oysters. The programme requires annual monitoring and sampling of oyster tissue for E. coli arsenic (inorganic), cadmium, lead and mercury, and water for E. coli and faecal coliforms, initially at five sites as specified in the REMP	Due to a lab error, the heavy metals testing was not conducted on the collected shellfish in Dec 2024	Lab has been made aware and schedule checked to ensure all testing required is conducted	For next testing round, Dec 2025

Appendix A. Effluent quality summary

Weekly discharge quality sampling conducted during the 2024-2025 reporting period

Date	Conductivity (mS/m 25°C)	Enterococci (cfu/100 mL)	F.Coliforms (cfu/100 mL)	Nitrate (mg/L)	Nitrite (mg/L)	DRP (mg P/L)	pH	Temp (°C)	Total N (mg/L)	Total P (mg/L)	Turbidity (NTU)	Salinity (ppt)
2/07/24	64.40	470.00	4300.00	17.10	0.46	6.78	6.80	18.20	27.00	9.37	2.80	0.30
9/07/24	65.40	5300.00	26000.00	17.30	0.73	5.88	6.70	18.50	28.00	6.91	19.00	0.30
16/07/24	62.60	31.00	260.00	15.40	0.10	5.51	6.70	18.20	23.00	7.01	4.30	0.30
23/07/24	56.00	1.60	6.50	12.00	0.14	3.44	6.90	18.30	18.00	3.63	5.70	0.30
30/07/24	58.00	1.60	40.00	15.00		4.17	6.80	18.10	19.00	4.47	1.10	0.30
6/08/24	59.00	4.90	54.00	15.00	0.05	4.40	6.70	17.90	21.00	4.88	1.70	0.30
13/08/24	60.00	31.00	48.00	14.00		6.26	6.80		23.00	7.10	5.90	0.30
20/08/24	59.00	60.00	420.00	15.00	0.13	5.88	6.70	18.40	20.00	7.14	1.50	0.30
27/08/24	61.00	200.00	330.00	16.00	0.15	5.83	6.60	19.10	18.00	6.55	2.30	0.30
3/09/24	54.00	3900.00	11000.00	10.00	0.25	2.50	6.90	17.40	18.00	2.81	4.70	0.30
10/09/24	60.00	28.00	84.00	17.00	0.05	6.14	6.60	18.10	26.00	6.76	3.70	0.30
17/09/24	61.00	1.60	1.60	16.00		8.33	6.70	18.10	24.00	8.95	2.70	0.30
24/09/24	65.00		18.00	18.00	0.06	7.19	6.50	18.60	26.00	7.68	2.40	0.30
1/10/24	66.00	240.00	830.00	24.00	0.34	8.34	6.50	35.90	34.00	9.51	31.00	0.30
8/10/24	54.00	4.90	100.00	12.00	0.11	4.14	6.80	36.20	21.00	4.44	4.80	0.30
15/10/24	63.00		90.00	15.00	0.17	5.51	7.00	38.60	29.00	5.70	2.50	0.30
22/10/24	66.00	13.00	310.00	14.00	0.18	5.66	7.10	38.80	37.00	6.22	12.00	0.30

Date	Conductivity (mS/m 25°C)	Enterococci (cfu/100 mL)	F.Coliforms (cfu/100 mL)	Nitrate (mg/L)	Nitrite (mg/L)	DRP (mg P/L)	pH	Temp (°C)	Total N (mg/L)	Total P (mg/L)	Turbidity (NTU)	Salinity (ppt)
29/10/24	64.00	3200.00	8200.00	17.00	0.36	5.29	6.90	39.40	26.00	5.92	7.30	0.30
5/11/24	59.00	27.00	74.00	14.00	0.08	5.52	6.80	38.60	17.00	5.58	0.55	0.30
12/11/24	60.00		8.20	18.00		6.98	6.60	38.20	24.00	7.71	0.95	0.30
19/11/24	58.20	56.00	520.00	13.40	0.48	6.52	7.00	21.10	22.00	7.54	1.60	0.30
26/11/24	63.90	13.00	76.00	16.10	0.57	7.04	6.70	21.10	21.00	8.52	1.10	0.30
3/12/24	61.30	430.00	670.00	16.20	0.68	7.94	6.70	63.60	25.00	8.87	2.00	0.30
10/12/24	68.40	310.00	680.00	18.80	1.00	7.46	7.00	21.20	26.00	7.92	1.90	0.30
17/12/24	65.10	1.60	130.00	12.10	0.67	4.20	7.10	22.80	20.00	4.76	1.30	0.30
24/12/24	73.20		23.00	12.70	0.69	3.96	7.10	23.10	18.00	4.71	0.55	0.40
31/12/24	35.40	25.00	110.00	12.10	0.60	2.70	7.10	23.20	21.00	3.35	0.85	0.30
7/01/25	66.60	350.00	1600.00	15.20	0.32	2.93	6.90	21.20	21.00	4.70	3.50	0.30
14/01/25	65.30	8.20	110.00	15.10	1.19	3.23	6.90		20.00	3.74	0.60	0.30
21/01/25	76.90	20.00	140.00	14.50	0.85	5.85	7.00		20.00	5.84	1.00	0.40
28/01/25	69.40	400.00	2600.00	17.70	0.51	5.82	14.00		22.00	6.64	4.10	0.30
4/02/25	63.90	20.00	72.00	16.40	0.54	6.24	6.80	24.40	20.00	8.82	0.55	0.40
11/02/25	71.00	15.00	98.00	17.00	0.78	4.87	6.90		20.00	5.04	0.45	0.30
18/02/25	67.30	3.30	42.00	17.30	0.69	6.45	7.10		21.00	6.58	0.60	0.30
25/02/25	65.50		44.00	16.80	0.70	5.99	6.90		22.00	6.66	0.50	0.30

Date	Conductivity (mS/m 25°C)	Enterococci (cfu/100 mL)	F.Coliforms (cfu/100 mL)	Nitrate (mg/L)	Nitrite (mg/L)	DRP (mg P/L)	pH	Temp (°C)	Total N (mg/L)	Total P (mg/L)	Turbidity (NTU)	Salinity (ppt)
4/03/25	64.80	48.00	540.00	17.40	0.65	5.13	7.00	22.70	19.00	5.34	0.50	0.30
11/03/25	68.60	1.60	31.00	14.80	0.44	2.65	7.10	47.00	20.00	2.61	1.90	0.30
18/03/25	60.90		26.00	15.10		3.26	6.60	46.50	18.00	3.40	0.45	0.30
25/03/25	61.80	1.60	25.00	16.20	0.38	5.12	6.70	46.60	20.00	5.35	0.30	0.30
1/04/25	62.60	1.60	15.00	14.50	0.39	4.87	6.80		16.00	5.70	0.30	0.30
8/04/25	65.30		8.20	13.50	0.48	4.32	6.80	21.20	19.00	5.39	0.30	0.30
15/04/25	61.50	15.00	100.00	16.10	0.24	5.44	6.70	41.80	19.00	6.65	2.70	0.30
22/04/25	65.60	13.00	210.00	12.20	1.28	4.45	6.70	41.60	20.00	5.63	1.50	0.30
29/04/25	69.10	4.90	42.00	14.00	0.62	4.91	7.00	20.10	19.00	5.07	0.50	0.30
6/05/25	69.60		20.00	10.20	0.49	4.49	6.90	18.60	13.00	4.89	0.20	0.30
13/05/25	56.10	3.30	48.00	10.70	0.48	4.48	6.90	18.60	14.00	5.18	0.35	0.30
20/05/25	62.20	6.60	86.00	13.40	0.61	5.54	6.90	18.40	17.00	5.90	0.65	0.30
27/05/25	54.30	1.60	16.00	8.94	0.15	2.41	6.80	17.90	12.00	2.52	0.30	0.30
3/06/25	62.40		11.00	14.10	0.83	9.80	6.80	18.10	15.00	5.93	3.40	0.40
10/06/25	53.00	8900.00	58000.00	8.63	0.64	3.13	6.80	18.00	15.00	3.28	6.40	0.20
17/06/25	51.90	82.00	410.00	9.78	0.36	2.57	6.80	18.10	14.00	2.72	1.40	0.30
24/06/25	57.20	2800.00	12000.00	14.90	0.68	4.23	6.60	17.90	16.00	5.14	2.60	0.30

Effluent quality results for cBOD5, ammonia and total suspended solids with calculated rolling 12-month median and 92nd percentile values for the 2024-2025 reporting period

Date	$cBOD_5$ (mg O_2/L)	$cBOD_5$ 12mo median	$cBOD_5$ 12mo 92nd %ile	Ammonia (mg/L)	Ammonia 12mo median	TSS (mg/L)	TSS 12mo median	TSS 12mo 92nd %ile
2/07/24	4.00	1.70	4.37	5.34	1.59	3.40	4.10	11.87
9/07/24	4.70	1.70	4.65	4.69	1.64	38.00	4.30	12.92
16/07/24	11.00	1.70	4.87	4.21	1.73	30.00	4.30	18.52
23/07/24	2.90	1.70	4.87	4.57	1.75	6.20	4.40	18.52
30/07/24	1.30	1.70	4.87	2.88	1.76	8.40	4.40	19.00
6/08/24	1.70	1.70	4.87	2.99	1.77	4.60	4.40	18.52
7/08/24		1.70	4.87		1.77	0	4.40	18.52
13/08/24	1.60	1.70	4.87	4.64	1.80	9.20	4.40	18.52
20/08/24	2.40	1.70	4.65	3.36	1.85	11.00	4.40	12.92
21/08/24		1.70	4.65		1.85	0	4.40	12.92
27/08/24	1.90	1.80	4.65	3.20	1.86	0	4.40	13.00
3/09/24	8.50	1.80	4.87	2.70	1.88	13.00	4.60	13.00
10/09/24	2.60	1.80	4.65	2.90	1.88	1.80	4.40	13.00
14/09/24		1.80	4.68		1.89	0	4.50	13.48
17/09/24	3.30	1.80	4.65	4.00	1.89	5.60	4.60	13.00
24/09/24	1.80	1.80	4.65	5.40	1.90	8.40	4.60	13.00
1/10/24	13.00	1.90	4.87	5.90	1.91	4.00	4.60	13.00
7/10/24		1.85	4.68		1.91		4.60	13.48
8/10/24	2.40	1.90	4.65	6.30	1.91	6.20	4.60	13.00
15/10/24	2.60	1.90	4.65	10.00	1.94	0	4.60	13.48
22/10/24	4.00	1.90	4.65	9.90	1.96	4.60	4.60	13.48
29/10/24	9.90	1.90	6.63	5.80	1.97	18.00	4.60	13.40
5/11/24	1.00	1.80	6.63	3.60	1.98	0	4.60	13.80
12/11/24	1.50	1.80	6.63	1.70	1.98	4.00	4.60	13.00
13/11/24		1.80	6.63		1.98	0	4.60	13.00
19/11/24	5.20	1.80	6.71	5.20	1.99	3.80	4.60	13.00
20/11/24		1.80	6.71		1.99	0	4.60	13.00

Date	$cBOD_5$ (mg O_2/L)	$cBOD_5$ 12mo median	$cBOD_5$ 12mo 92nd %ile	Ammonia (mg/L)	Ammonia 12mo median	TSS (mg/L)	TSS 12mo median	TSS 12mo 92nd %ile
26/11/24	3.50	1.80	6.71	3.10	2.22	0	4.60	13.00
3/12/24	3.60	1.80	6.71	3.40	2.34	1.80	4.30	13.00
10/12/24	4.40	1.80	6.71	4.40	2.37	1.20	4.00	13.00
17/12/24	1.70	1.80	6.71	4.40	2.37	0	4.00	13.00
20/12/24		1.80	6.86		2.48		4.00	13.00
24/12/24	1.40	1.80	6.71	1.60	2.37	0	4.00	13.00
31/12/24	1.40	1.80	6.71	2.30	2.34	1.00	4.00	13.00
7/01/25	6.90	1.80	6.98	3.50	2.59	4.80	4.00	13.00
10/01/25		1.80	6.99		2.65		4.00	13.00
14/01/25	1.70	1.80	6.98	2.00	2.59	4.00	4.00	13.00
21/01/25	3.20	1.80	6.98	1.00	2.59	5.40	4.00	13.00
28/01/25	3.60	1.80	6.98	2.80	2.70	4.80	4.00	13.00
4/02/25	1.20	1.80	6.98	0.97	2.70	0	4.30	13.00
11/02/25	0.60	1.80	6.98	0.99	2.70	2.40	4.30	13.00
18/02/25	2.10	1.80	6.98	0.97	2.70	4.20	4.10	13.00
25/02/25	0.90	1.80	6.98	2.00	2.70	3.20	4.00	13.00
4/03/25	0.55	1.80	6.98	0.76	2.70	5.20	4.10	13.00
11/03/25	1.10	1.80	6.98	0.99	2.70	2.80	4.00	13.00
18/03/25	1.80	1.80	6.98	0.50	2.70	1.40	4.00	13.00
25/03/25	0.76	1.80	6.98	0.41	2.70	0	4.00	13.00
1/04/25	0.52	1.80	6.98	1.30	2.70	0	4.10	13.00
8/04/25	0.72	1.80	6.98	1.50	2.70	3.20	4.10	13.00
15/04/25	2.50	1.80	6.98	0.23	2.70	6.40	4.40	13.00
22/04/25	1.50	1.80	6.98	2.30	2.70	0	4.60	13.00
29/04/25	0.74	1.80	6.98	2.10	2.70	3.60	4.60	13.00
6/05/25	0.78	1.80	6.98	0.76	2.70	0	4.60	13.00
13/05/25	0.73	1.80	6.98	1.40	2.70	0	4.60	13.00
20/05/25	3.10	1.90	6.98	1.30	2.70	2.40	4.60	13.00
27/05/25	1.30	1.90	6.98	0.85	2.70	0	4.60	13.00

Date	$cBOD_5$ (mg O_2/L)	$cBOD_5$ 12mo median	$cBOD_5$ 12mo 92nd %ile	Ammonia (mg/L)	Ammonia 12mo median	TSS (mg/L)	TSS 12mo median	TSS 12mo 92nd %ile
3/06/25	2.00	1.90	6.63	0.45	2.70	2.40	4.40	13.00
10/06/25	7.50	2.00	7.40	3.40	2.74	14.00	4.60	13.88
17/06/25	1.80	1.90	7.40	2.20	2.74	0	4.60	13.96
24/06/25		1.85	7.45	2.40	2.74	6.40	4.60	13.96

Annual trace metal results from the 2024-2025 reporting period

Metals in mg/L	Summer values	Winter values
Arsenic (Dissolved)	0.00067	0.001
Arsenic (Total)	0.00058	0.002
Cadmium (Dissolved)	0.00005	0.000
Cadmium (Total)	0.00005	0.000
Chromium (Dissolved)	0.00057	0.001
Chromium (Total)	0.0012	0.002
Copper (Dissolved)	0.0012	0.002
Copper (Total)	0.0037	0.005
Lead (Dissolved)	<0.0001	0.000
Lead (Total)	0.00021	0.000
Mercury (Dissolved)	0.00005	0.000
Mercury (Total)	0.00005	0.000
Nickel (Dissolved)	0.002	0.002
Nickel (Total)	0.0025	0.002
Zinc (Dissolved)	0.017	0.037
Zinc (Total)	0.032	0.040

Bi-annual discharge quality results for organic compounds and oil and grease for the 2024-2025 reporting period

Parameter	Unit	Summer	Winter
Oil and grease	mg/L	<5.0	<5.0
4,4'-DDD, Trace level	mg/L	<0.00008	<0.00004
4,4'-DDE, Trace level	mg/L	<0.00008	<0.00004
4,4'-DDT, Trace level	mg/L	<0.00008	<0.00004
Aldrin, Trace level	mg/L	<0.00008	<0.00004
Alpha-Chlordane, Trace level	mg/L	<0.00008	<0.00004
BHC alpha, Trace level	mg/L	<0.00008	<0.00004
BHC beta, Trace level	mg/L	<0.00008	<0.00004
BHC delta, Trace level	mg/L	<0.00008	<0.00004
Dieldrin, Trace level	mg/L	<0.00008	<0.00004
Endosulfan I, Trace level	mg/L	<0.00008	<0.00004
Endosulfan II, Trace level	mg/L	<0.00008	<0.00004
Endosulfan sulfate, Trace level	mg/L	<0.00008	<0.00004
Endrin aldehyde, Trace level	mg/L	<0.00008	<0.00004
Endrin, Trace level	mg/L	<0.00008	<0.00004
Gamma-chlordane, Trace level	mg/L	<0.00008	<0.00004
Heptachlor epoxide, Trace level	mg/L	<0.00008	<0.00004
Heptachlor, Trace level	mg/L	<0.00008	<0.00004
Indeno(1,2,3,c,d)pyrene	mg/L	<0.00004	<0.00002
Lindane (BHC gamma), Trace level	mg/L	<0.00008	<0.00004
Methoxychlor, Trace level	mg/L	<0.0004	<0.0002
Acenaphthene	mg/L	<0.00004	<0.00002
Acenaphthylene	mg/L	<0.00004	<0.00002
Anthracene	mg/L	<0.00004	<0.00002
BAP Equivalent	mg/L	<0.0002	<0.00008
Benzo(a)anthracene	mg/L	<0.00004	<0.00002
Benzo(a)pyrene	mg/L	<0.0001	<0.00005
Benzo(b)fluoranthene	mg/L	<0.00004	<0.00002

Parameter	Unit	Summer	Winter
Benzo(ghi)perylene	mg/L	<0.00004	<0.00002
Benzo(k)fluoranthene	mg/L	<0.00006	<0.00003
Chrysene	mg/L	<0.00004	<0.00002
Dibenzo(ah)anthracene	mg/L	<0.00004	<0.00002
Fluoranthene	mg/L	<0.00004	<0.00002
Fluorene	mg/L	<0.00004	<0.00002
Naphthalene	mg/L	<0.00004	<0.00002
Phenanthrene	mg/L	<0.00004	<0.00002
Pyrene	mg/L	<0.00004	<0.00002
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl PCB206	ng/L	<2.0	<1.0
2,2',3,3',4,4',5,5'-Octachlorobiphenyl PCB194	ng/L	<2.0	<1.0
2,2',3,3',4,4',5-Heptachlorobiphenyl PCB170	ng/L	<2.0	<1.0
2,2',3,3',4,4'-Hexachlorobiphenyl PCB128	ng/L	<2.0	<1.0
2,2',3,4,4',5,5'-Heptachlorobiphenyl PCB180	ng/L	<2.0	<1.0
2,2',3,4,4',5'-Hexachlorobiphenyl PCB138	ng/L	<2.0	<1.0
2,2',3,4,5,5'-Hexachlorobiphenyl PCB141	ng/L	<2.0	<1.0
2,2',3,4',5',6-Hexachlorobiphenyl PCB149	ng/L	<2.0	<1.0
2,2',3,4,5-Pentachlorobiphenyl PCB86	ng/L	<2.0	<1.0
2,2',3,5,5',6-Hexachlorobiphenyl PCB151	ng/L	<2.0	<1.0
2,2',3,5'-Tetrachlorobiphenyl PCB44	ng/L	<2.0	<1.0
2,2',4,4',5,5'-Hexachlorobiphenyl PCB153	ng/L	<2.0	<1.0
2,2',4,5,5'-Pentachlorobiphenyl PCB101	ng/L	<2.0	<1.0
2,2',4,5'-Tetrachlorobiphenyl PCB49	ng/L	<2.0	<1.0
2,2',5,5'-Tetrachlorobiphenyl PCB52	ng/L	<2.0	<1.0
2,3,3',4,4',5,5'-Heptachlorobiphenyl PCB189	ng/L	<2.0	<1.0
2,3,3',4,4',5-Hexachlorobiphenyl PCB156	ng/L	<2.0	<1.0
2,3,3',4,4',5'-Hexachlorobiphenyl PCB157	ng/L	<2.0	<1.0
2,3,3',4,4'-Pentachlorobiphenyl PCB105	ng/L	<2.0	<1.0
2,3,3',4,5,5'-Hexachlorobiphenyl PCB159	ng/L	<2.0	<1.0
2,3,3',4',6-Pentachlorobiphenyl PCB110	ng/L	<2.0	<1.0

Parameter	Unit	Summer	Winter
2,3',4,4',5,5'-Hexachlorobiphenyl PCB167	ng/L	<2.0	<1.0
2,3,4,4',5-Pentachlorobiphenyl PCB114	ng/L	<2.0	<1.0
2,3',4,4',5-Pentachlorobiphenyl PCB118	ng/L	<2.0	<1.0
2,3',4,4',5'-Pentachlorobiphenyl PCB123	ng/L	<2.0	<1.0
2,3,4,4'-Tetrachlorobiphenyl PCB60	ng/L	<2.0	<1.0
2,3',4,5',6-Pentachlorobiphenyl PCB121	ng/L	<2.0	<1.0
2,4,4'-Trichlorobiphenyl & 2,4',5-Trichlorobiphenyl PCB28 & PCB31	ng/L	<4.0	<2.0
2,4,6-Trichlorobiphenyl PCB30	ng/L	<2.0	<1.0
3,3',4,4',5,5'-Hexachlorobiphenyl PCB169	ng/L	<2.0	<1.0
3,3',4,4',5-Pentachlorobiphenyl PCB126	ng/L	<2.0	<1.0
3,3',4,4'-Tetrachlorobiphenyl PCB77	ng/L	<2.0	<1.0
3,4,4',5-Tetrachlorobiphenyl PCB81	ng/L	<2.0	<1.0
cis-permethrin, Trace level	mg/L	<0.0004	<0.0002
trans-permethrin, Trace level	mg/L	<0.0004	<0.0002

Appendix B. Compliance commentary

Condition Number	Consent condition Army Bay Discharge to air (#DIS60331113)	Compliance Rating	Comments
1	The activities shall be carried out in accordance with the plans and information submitted with the application, detailed below, and all material referenced by the Council as consent numbers DIS60331146 (Wastewater discharge permit), DIS60331113 (Air Discharge Permit) and LUC60331145 (Land use Consent).	1	
2	The Consent Holder shall ensure that all staff and contractors undertaking works on site are aware of, and adhere to, all conditions of this consent.	1	
3	The agents of the Auckland Council shall be permitted to have access to the Wastewater Treatment Plant and discharge facilities at all reasonable times for the purpose of carrying out monitoring procedures, inspections, surveys, investigations, tests, measurements or take samples while adhering to the Consent Holder's health and safety policies.	1	
4	Discharge permits DIS6031146 and DIS60331113 shall expire 35 years from the date of commencement, unless they have lapsed, been surrendered or been cancelled at an earlier date pursuant to the Resource Management Act 1991.	1	
5	Within one month of the completion of the each of the staged upgrades to the Army Bay Wastewater Treatment Plant (WWTP) identified in Condition 9(a), (c) and (e), or of any interim works required to meet treated wastewater quality requirements in this consent, the Consent Holder shall notify Auckland Council in writing that the works are completed and shall provide ‘as-built certification’ from a suitably qualified engineer that the WWTP upgrades have been installed and are operating in accordance with industry standard and meeting the relevant discharge limits.	1	

Condition Number	Consent condition Army Bay Discharge to air (#DIS60331113)	Compliance Rating	Comments
6	From the date of the commencement of this consent, the requirements of this condition, and Conditions 7 and 8 below, apply to the ongoing operation of the existing Army Bay Wastewater Treatment Plant (WWTP) until the Army Bay WWTP - Stage 1 upgrade has been commissioned, but in any event for no longer than 7 years from commencement of this consent: (a) Annual average dry weather flow shall not exceed 13,500 m3 per day., and (b) The maximum daily treated wastewater discharge volume from the Wastewater Treatment Plant to the coastal marine area shall not exceed a maximum daily discharge of 39,825 m3 per day (at peak dry weather flow), and a maximum instantaneous flow of 750 L/s (at peak wet-weather flow). (c) The Consent Holder shall ensure that a validated (in accordance with USEPA UV Disinfection Guidance Manual 2006 or another suitable method as approved by Auckland Council) Ultraviolet (UV) dose of 25 mJ/cm2 is delivered by the UV disinfection facility for 99% of the time (calculated based on a 15-minute average) over each calendar month.	2	Condition 6(c) not compliant for six out of twelve months
7	Treated wastewater discharges from the existing Army Bay Wastewater Treatment Plant shall be equal to or less than the limit specified for that parameter as set out in Table 1 below. The collection of treated wastewater samples shall occur weekly (using a 24-hour composite sample) and take place following treatment and prior to discharging to the outfall pipeline.	1	
8	Further to those parameters identified in Table 1, the Consent Holder shall also undertake discharge quality monitoring prior to discharging to the outfall pipeline for the parameters identified in Table 2 below.	1	
9	Clauses (a) to (f) of this condition, and Conditions 10 and 11, below apply to the long- term operation of the Army Bay WWTP following the staged upgrades to the WWTP: (a) Prior to the Average Dry Weather Flows into the Army Bay Wastewater Treatment Plant (WWTP) reaching 13,500 m3 per day, the Consent Holder shall commission sufficient upgrades at the Army Bay WWTP to meet the Stage 1 discharge quality standards outlined in Table 3 below; (b) Under the Stage 1 operations, the discharge volume from the wastewater treatment system to the coastal marine area shall not exceed the flow rates outlined in Table 4 below.	NA	Upgrade stage 1 not completed
10	Treated wastewater discharges from the each of the staged upgrades to the Army Bay Wastewater Treatment Plant shall be equal to or less than the limit specified for that parameter as set out in Table 3. The collection of treated wastewater samples shall occur weekly and take place following Ultraviolet treatment and prior to discharge to the outfall pipeline.	NA	Upgrade stage 1 not completed

Condition Number	Consent condition Army Bay Discharge to air (#DIS60331113)	Compliance Rating	Comments
11	Further to those parameters identified in Table 3, the Consent Holder shall also undertake discharge quality monitoring prior to discharging to the outfall pipeline for the parameters identified in Table 5 below.	NA	Upgrade stage 1 not completed
12	Following the implementation of the Stage 1 upgrades, the Consent Holder shall: a. Ensure that a validated (in accordance with USEPA UV Disinfection Guidance Manual 2006 or another suitable method as approved by Auckland Council) Ultraviolet (UV) dose of 35 mJ/cm2 is delivered by the UV disinfection facility for 99% of the time (calculated based on a 15-minute average) over each calendar month. b. At 15 minutes intervals, measure the turbidity of the treated wastewater discharged from the MBR treatment train prior to entering the UV treatment. The MBR Turbidity monitoring shall demonstrate compliance with the following turbidity limits: -Median - 0.5 Nephelometric Turbidity Unit (NTU) -92nd percentile – 1 NTU	NA	Upgrade stage 1 not completed
13	The Consent Holder shall ensure that all chemical analyses and sampling techniques are carried out in accordance with the latest edition of “Standard Methods for the Examination of Water and Wastewater”, APHA AWWA WEF, or other standards approved in writing by the Auckland Council. All wastewater quality analyses shall be undertaken by an IANZ accredited or equivalent laboratory.	1	
14	The Consent Holder shall advise the Auckland Council in writing immediately if problems are detected in association with the exercise of this consent that could pose an environmental risk by affecting discharge quality and shall outline a schedule of action to remedy issues. If the 92nd percentile limit is exceeded in any single sample for any analyte shown in Tables 1 and 3 above, an additional composite sample shall be collected and tested for the analyte within 5 working days of receipt of the laboratory result. If the second composite sample returns an exceedance, an investigation shall also be undertaken into the cause of the exceedance, the significance of the effect of the exceedance on the receiving environment, and the remedial action undertaken (if required) in response to the exceedance and the findings of this investigation report to the Auckland Council within one month of the exceedance occurring.	1	
15	At all times during the term of this consent, the Consent Holder shall maintain flow meters to continuously measure the total daily inflow to the wastewater treatment plant and the total daily volume discharged to outfall pipeline prior to entering the coastal marine area. The discharge volume meter must be maintained to ensure an accuracy of plus or minus 5 percent. Records shall be kept of the daily inflow and volumes discharged to the outfall pipeline prior to entering the coastal marine area. Recorded data shall be reported in accordance with Condition 36.	1	

Condition Number	Consent condition Army Bay Discharge to air (#DIS60331113)	Compliance Rating	Comments
16	The Consent Holder shall ensure that no new trade, industrial, non-domestic or other strong wastes shall be permitted to be received into the existing or upgraded Wastewater Treatment Plant except in accordance with the Trade Waste Bylaw / Te Ture a Rohe Waiparui a Mahi 2013 or any Operative Trade Waste By-law that may supersede this.	1	All trade waste dischargers must abide by the conditions of the Trade Waste Bylaw – whether they are low risk (i.e. no TW agreement required) or whether they hold a TW agreement with conditions.
17	The Consent Holder shall ensure that for the duration of this consent, the wastewater treatment system is maintained and operated by a suitably qualified and experienced wastewater plant operator. This operator shall oversee the operation and management of the wastewater treatment system and perform the operational and maintenance responsibilities specified in the Operations Management Plan (Condition 33).	1	
18	The Consent Holder shall prepare and implement a Receiving Environment Monitoring Plan (REMP) for the coastal marine area surrounding the outfall discharge point of the Army Bay Wastewater Treatment Plant. Within 40 working days of the commencement of this consent, the REMP shall be submitted to the Auckland Council for certification that it has been prepared in general accordance with the requirements listed in Condition 20 and the Draft Receiving Environment Monitoring Plan, a copy of which is attached as Appendix 1	1	Completed June 2019, last revision done in April 2022
19	The purpose of the Receiving Environment Monitoring Plan is to provide the framework for the receiving environment monitoring and to measure water quality in the receiving and surrounding coastal environments to detect and delineate any obvious temporal trends/changes in water quality, shellfish quality and marine ecology attributable to the discharges from the Wastewater Treatment Plant and to confirm predictions on effects.	1	

Condition Number	Consent condition Army Bay Discharge to air (#DIS60331113)	Compliance Rating	Comments
20	The Receiving Environment Monitoring Plan, as a minimum, shall include / provide for: a. Coastal Water Quality Monitoring on a monthly basis, initially from 6 sites (specified in the REMP), for the parameters listed in Table 6 below b. Sub-tidal Benthic Ecology Monitoring c. Intertidal Macroalgae Monitoring d. Sediment Quality Monitoring e. Shellfish / Kaimoana Monitoring f. Spatial and temporal extent of macroalgal blooms; g. The procedure for modifying the REMP; and h. The reporting and review procedure.	2	Non-compliant against 20e due to lab error – metals testing was not conducted on shellfish samples collected in Dec 2024
21	Following the second year of sampling under the Receiving Environment Monitoring Plan (REMP), and subsequently at five yearly intervals or within each stage of upgrade (whichever comes first), the consent holder shall engage an independent suitably qualified person to review the REMP to confirm that the sampling provided for is 'fit for purpose. The review of the REMP shall, as a minimum, consider: a. monitoring results (particularly spatial and temporal patterns used to assess the effects of the outfall); b. whether the parameters measured are appropriate and/or actually required; c. the location and number of sampling sites and whether they are spatially appropriate; d. sampling frequencies; e. whether better methods are available for obtaining the information required (e.g. because of technological developments); f. the suitability of data analyses; and g. the adequacy of reporting. The review shall be forwarded to Auckland Council within one month of completion and where the findings of the review identify a need to amend the REMP, this shall be undertaken in accordance with the procedure for modifying the REMP as outlined in the REMP.	1	Completed in 2022, another review conducted 2025.
22	The Consent Holder shall engage a suitably qualified person to undertake an Emerging Contaminants Risk Assessment of the treated wastewater from the upgraded Army Bay Wastewater Treatment Plant (WWTP) within six months of each upgrade becoming operational and subsequently at five yearly intervals thereafter following the Stage 3 upgrade. The Emerging Contaminants Risk Assessment shall as a minimum include:	NA	Upgrade stage 1 not completed

Condition Number	Consent condition Army Bay Discharge to air (#DIS60331113)	Compliance Rating	Comments
23	The Emerging Contaminants Risk Assessment shall be forwarded to the Auckland Council by 30 September of each year that it is required for certification that it meets the requirements of Condition 22.	N/A	Upgrade stage 1 not completed
24	The Consent Holder shall ensure that all processes on site are operated, maintained, supervised, monitored and controlled to ensure that emissions to air authorised by this consent are maintained at the minimum practicable level.	1	
25	Beyond the boundary of the site, there shall be no odour or dust caused by discharges from the site which, in the opinion of an enforcement officer, is noxious, offensive or objectionable.	1	
26	All processes on site shall be operated in accordance with the certified Odour Management Plan submitted in accordance with Condition 30 of this consent.	1	
27	All sludge removal from the storage ponds, and the subsequent de-watering and disposal, shall be carried out in a manner that minimises odour to the extent practicable.	1	
28	No discharges from any activity on the site shall give rise to visible emissions, other than water vapour, to an extent which, in the opinion of an enforcement officer, is noxious, offensive or objectionable.	1	
29	No later than one month following the implementation of the Stage 1 upgrades to the Wastewater Treatment Plant, the Consent Holder shall install and operate a meteorological monitoring station to measure wind speed, wind direction, temperature and rainfall at the site. The monitor shall continuously log these meteorological conditions in real-time so that the readings are available to site staff and be of a type and in a location agreed to by the Auckland Council.	NA	Upgrade stage 1 not completed
30	The Consent Holder shall prepare and maintain an Odour Management Plan (OMP), the purpose of which is to describe measures to control and reduce the potential for odour generation to occur, which could give rise to off-site effects. The OMP shall, as a minimum, include the following: a. Identification of all fugitive and point sources for discharges of contaminants into air, including a site plan showing the locations of each point source and the specifications of all odour control devices; b. Details of procedures to minimise discharges of contaminants into air, including details of the inspection, maintenance, monitoring and contingency procedures in place; c. Monitoring and maintenance requirements for odour treatment equipment,	1	The Odour Management Plan (OMP) for the review and approval was sent to AC on 5 June 2020 by Operations Controller, Mai Hoque.

Condition Number	Consent condition Army Bay Discharge to air (#DIS60331113)	Compliance Rating	Comments
31	The Odour Management Plan (OMP) shall be submitted within three months from the date of commencement of this consent to the Auckland Council for certification that it meets the requirements of Condition 30.	1	The Odour Management Plan (OMP) for the review and approval was sent to AC on 5 June 2020 by Operations Controller, Mai Hoque.
32	Within one month of commissioning of each of the three staged upgrades to the Army Bay WWTP, the Consent Holder shall provide an updated Odour Management Plan (OMP) to the Auckland Council for approval, in a certification capacity, that the plan meets the requirements of Condition 30. The Consent Holder shall implement, and operate in accordance with, the certified OMP.	N/A	Upgrade stage 1 not completed
33	Within three months of the commencement of this consent, the Consent Holder shall prepare an Army Bay Operations Management Plan (ABOMP), the purpose of which is to provide a framework for the operation and management of the Wastewater Treatment Plant (WWTP) and discharge facilities to ensure compliance with the conditions of this consent. The ABOMP shall be submitted to the Auckland Council for certification that it meets the requirements of this condition and Condition 34.	1	Army Bay Operations Management Plan was sent to AC on 5 June 2020 by Operations Controller, Mai Hoque for the review and approval.
34	The Army Bay Operations Management Plan shall as a minimum include the following matters: a. An overview description of the Wastewater Treatment Plant (WWTP) and discharge facilities; b. A description and schedule of the routine inspection, monitoring and maintenance procedures to be undertaken to ensure operation of the WWTP and discharge facilities, complies with this consent; c. A description of the sampling location/s and methodology for sampling the treated wastewater discharge, including identification of the detection limits applicable for each parameter; d. A schedule of the critical aspects of the WWTP and the detailed response and contingency plans to remedy any possible variations from normal plant operation that could potentially affect discharge quality; e. Details of contingency plans and procedures to address a critical power or equipment failure at the WWTP; f. Procedures for recording routine maintenance and all major repairs that are undertaken; and g. The consent holders' chain of command, responsibility and notification protocols.	1	

Condition Number	Consent condition Army Bay Discharge to air (#DIS60331113)	Compliance Rating	Comments
35	The Consent Holder shall undertake the requirements of the Army Bay Operations Management Plan (ABOMP) once it has been finalised. All significant updates to the ABOMP throughout the term of this consent shall be submitted to the Auckland Council for certification that the updated ABOMP meets the requirements of Condition 34 prior to its implementation.		
36	An Annual Performance Report shall be submitted to the Auckland Council by September 30 of each year. The report shall include, but not be limited to: a. Collate, analyse and interpret all relevant data and information pertaining to this consent for the previous year from 1 July to 30 June; b. Report the calculated Average Dry Weather Flow, Peak Dry Weather Flow and Maximum Instantaneous Flow (Peak Wet Weather Flow) volumes, and the rainfall data for the previous year from 1 July to 30 June, and compare these values with the discharge volume requirements specified by Conditions 6 and 9 of this consent; c. Include comment on Wastewater Treatment Plant performance in relation to the quality of the treated wastewater discharge (including compliance with Ultraviolet dose requirements in accordance with Condition 12, and compliance with the MBR turbidity monitoring in Condition 12(b)), and any significant trends in changes in the discharge volume and/or the discharge quality over time; d. Comment on compliance with each consent condition; and e. Identify any actions required and submit a timetable to rectify any non- compliance.	1	
37	The Consent Holder shall engage a suitably qualified person(s) to review the collated receiving water quality and sediment quality data on the second anniversary of the commencement of this consent and subsequently at five yearly intervals thereafter. This assessment shall as a minimum: a. Summarise the results of the receiving environment monitoring programme; b. Report on any trends in the concentration of parameters measured; c. In combination with the results of coastal water quality monitoring undertaken by Auckland Council, assess whether there is any evidence that nutrients sourced from the Army Bay Wastewater Treatment Plant (WWTP) could breakthrough to the coastal marine area surrounding the outfall in sufficient quantities to cause deterioration of coastal water quality; and d. Review recorded concentrations of key contaminants of concern in treated wastewater (as per Tables 1, 2, 3 and 5) and assess whether the WWTP is operating efficiently and effectively. This assessment shall be forwarded to the Auckland Council by 30 September of each year that it is required.	1	

Condition Number	Consent condition Army Bay Discharge to air (#DIS60331113)	Compliance Rating	Comments
38	All complaints received by the Consent Holder about the treated wastewater discharges or odour discharges associated with the Wastewater Treatment Plant (WWTP) shall be logged immediately in the WWTP Complaints Register. The Register shall include: a. The date, time, location, duration and nature of the complaint; b. Name, phone number and address of the complainant unless the complainant wishes to remain anonymous; c. Any remedial action taken by the consent holder in response to the complaint and when it was undertaken, and if no remedial action was considered necessary by the consent holder, the reasons for taking no remedial action; d. The possible cause of the relevant event/ incident that lead to the complaint; e. The weather conditions at the time of the relevant event/ incident including estimates of wind direction, wind strength, temperature and cloud cover; f. The date and name of the person making the entry; and. g. Details of any complaints received shall be provided to the Auckland Council within 24 hours of receipt of the complaint(s) or on the next working day, if the complaint is associated with breaches to the performance standards set out in the above conditions. All other complaints shall be provided in the Annual Report required by Condition 36.	1	
39	All records, monitoring and test results that are required by the conditions of this consent shall be made available upon request by an enforcement officer and shall be kept for a minimum of two years from the date of each entry.	1	
40	The Consent Holder shall engage an independent suitably qualified person to prepare and submit a Technology and Growth Review Report for the Army Bay Wastewater Treatment Plant (WWTP), its catchment area and its contaminant discharges within one year of the commissioning of the Stage 1 WWTP upgrades, and at five yearly intervals thereafter. The Report shall be submitted to the Auckland Council for certification that it has been produced in accordance with the requirements of Condition 41, below by 30 September of each year that it is required.	NA	Upgrade stage 1 not completed
41	The Technology and Growth Review shall as a minimum include: a. A review of changes in the state of technology of wastewater treatment and discharge methods relevant to disposal options as they relate to land disposal and beneficial re-use options from the WWTP treated wastewater and other by-products either since the commencement of these consents or the previous Technology and Growth Review, whichever is more recent.	N/A	Upgrade stage 1 not completed

Condition Number	Consent condition Army Bay Discharge to air (#DIS60331113)	Compliance Rating	Comments
42	Within six months of the commencement of this consent, the consent holder shall invite representatives of Ngati Manuhiri, Ngati Whanaunga, Te Kawerau a Maki, Ngai Tai ki Tamaki, and Ngati Maru, to establish an Army Bay Mana Whenua Liaison Group (ABMWLG). If established, the consent holder shall provide reasonable organisation and administrative support to facilitate the development and ongoing role of the group for the duration of the consents. The Army Bay Mana Whenua Liaison Group shall establish its own meeting protocols having regard to relevant customary practices and shall operate in accordance with the principles of the Treaty of Waitangi (Te Tiriti o Waitangi), especially the principles of consultation, active participation and partnership.	1	Engagement has taken place and council has been informed that that ABMWLG has been formed
43	The purpose of the Army Bay Mana Whenua Liaison Group (ABMWLG) is to facilitate consultation and information sharing between the ABMWLG and the consent holder. To that end, the functions of the ABMWLG shall include, but not necessarily be limited to the following:		
44	Within three months of its formation, the consent holder shall invite the Army Bay Mana Whenua Liaison Group (ABMWLG) to a meeting to discuss the Receiving Environment Monitoring Plan (Condition 18). The plan shall be provided to the ABMWLG sufficiently in advance of the meeting so that the ABMWLG has time to review and consider it. Any amendments to the plan as a result of this meeting shall be submitted to the Council for certification that any changes meet the requirements of Condition 20.	1	Engagement has taken place and council has been informed that that ABMWLG has been formed
45	Prior to submitting the Mitigation Planting Plan (LUC60331145 Condition 17), the Lizard Management Plan (LUC60331145 Condition 21), and the Avifauna Management Plan (LUC60331145 Condition 25), the consent holder shall invite the Army Bay Mana Whenua Liaison Group (ABMWLG) to a meeting to discuss the plans. The plans shall be provided to the ABMWLG sufficiently in advance of the meeting so that the ABMWLG has time to review and consider it. Any amendments to the plans as a result of this meeting shall be submitted to the Council for certification that any changes meet the requirements of LUC60331145 Condition 17 (MMP), LUC60331145 Condition 21 (LMP), and LUC60331145 Condition 25 (AMP).	1	
46	The consent holder shall keep minutes of any Army Bay Mana Whenua Liaison Group (ABMWLG) meetings held in accordance with Condition 42 and shall forward them to all attendees and provide a copy to the Auckland Council upon request. These meetings do not need to occur if the ABMWLG notifies the consent holder that a meeting is not required at any time for the duration of the consent.	1	
47	The consent holder shall provide the Army Bay Mana Whenua Liaison Group with final copies of all management plans and reports required by the conditions of this consent concurrently with them being submitted to the Auckland Council.	1	

Condition Number	Consent condition Army Bay Discharge to air (#DIS60331113)	Compliance Rating	Comments
48	The consent holder shall within six months of the commencement of this consent, invite the stakeholders listed in (a) – (h) below, to establish a Community Liaison Group (CLG). A general invitation shall be made by way of public notice in the New Zealand Herald, the Hibiscus Matters and the Rodney Times, direct notice (where practicable), and on the consent holder's website, to the following parties: a. The Auckland Council (being the Consent Compliance Officer or the Team Leader, Compliance Monitoring); b. The ABMWCG; c. Shakespear Open Sanctuary Society Incorporated; d. Shakespear Regional Park; e. Auckland Regional Public Health; f. The local community and representatives of community groups who express an interest in the project; and g. Other representatives of the local community who have expressed an interest in or concerns with the discharges of contaminants to the consent holder since the last CLG annual meeting.	1	
49	The purpose of the Community Liaison Group (CLG) shall be to provide a forum to: a. Facilitate communication and dialogue between the consent holder, the Council and the community on issues concerning plant operation, performance and upgrade works; and b. Facilitate communication and dialogue between the consent holder and the community on effects on the community / environment arising from plant operations and on future intentions.	1	
50	The consent holder shall use its best endeavours to ensure that formal meetings of the Community Liaison Group (CLG) are held at least once annually, and where practicable, within three months of the completion of the Annual Performance Report required by Condition 36. The CLG meeting can be cancelled or deferred subject to agreement being obtained from all parties who attended the prior year's CLG meeting or have requested to be invited to all future CLG meetings.	1	The next CLG is propose for Nov 2025
51	The consent holder shall provide reasonable organisation and administrative support to facilitate the development and on-going role of this Consultative Community Liaison Group for the duration of the consent.	1	
52	The consent holder shall provide an appropriate venue for the Community Liaison Group (CLG) meetings, inform all parties listed above of each CLG meeting a minimum of ten working days prior to the scheduled meeting date, and provide the minutes of the CLG meeting to all parties listed above within one month following the CLG meeting.	1	

Condition Number	Consent condition Army Bay Discharge to air (#DIS60331113)	Compliance Rating	Comments
53	The consent holder shall assist the Community Liaison Group (CLG) to fulfil its purpose by providing information to the CLG parties on: a. Any concerns and complaints of the local community, aspects of non- compliance and remedial actions or proposals; b. Plant performance, including an overview of the most recent annual report and receiving environment monitoring; c. Any investigations and works at the plant; d. Updates on issues that have been resolved since the previous CLG meeting.	1	
54	The conditions of this consent may be reviewed by Auckland Council pursuant to section 128 of the Resource Management Act 1991 (RMA), by giving notice pursuant to section 129, on the fifth anniversary of the commencement of these consents and subsequently at intervals of not less than five years thereafter in order to: a. To deal with any adverse effects, which are more than minor, on the environment arising from the exercise of the consent, which was not foreseen at the time the application was considered and which is appropriate to deal with at the time of review, including more than minor adverse effects of the treated wastewater discharge on receiving water quality, shellfish quality and marine ecology, as identified through the monitoring undertaken in the Receiving Environment Monitoring Plan under Condition 18; and / or, b. To consider the adequacy of conditions that prevent nuisance and adverse effects beyond the boundary of the site particularly if regular or frequent complaints have been received and validates by a Council enforcement officer; and / or c. To consider developments in technology and management practices that would enable practical reductions in the discharge of contaminants, in particular where any technology option/s identified through Condition 41(b), and minimise any adverse effects of the treated wastewater discharge that were unforeseen at the time of the granting of these consents; and / or d. To alter the monitoring requirements, including requiring further monitoring, or increasing or reducing the frequency of monitoring.	1	

Condition Number	Consent condition Army Bay Discharge to air (#DIS60331113)	Compliance Rating	Comments
55	This consent (or any part thereof) shall not commence until such time as the following charges, which are owing at the time the Council's decision is notified have been paid in full: a. All fixed charges relating to the receiving, processing and granting of this resource consent under section 36(1) of the RMA; b. All additional charges imposed under section 36 of the RMA to enable the Council to recover its actual and reasonable costs in respect of this application; and c. All initial consent compliance monitoring charges, plus any further monitoring charges to recover the actual and reasonable costs incurred to ensure compliance with the conditions attached to this consent.	1	
56	The servants or agents of the Council shall be permitted to have access to the relevant parts of the property at all reasonable times for the purpose of carrying out monitoring procedures, inspections, surveys, investigations, tests, measurements or take samples while adhering to the Consent Holder's health and safety policies.	1	

Appendix C. Odour Reports

Army Bay WWTP – Six Monthly Odour Monitoring Report

Date: 17 September 2024 **Time:** 09:30 **Person:** Margot Barreri

Wind Direction: NE **Wind Strength:** 23.9 km/h

Time	Location of odour[2]	Odour source	Strength	Description	Duration	Comments
8:30	**A**	**Biofilter # 1**	0			
8:40	**B**	**Grit bin**	1	Sewage		Localised to area
8:45	**C**	**Biofilter # 2**	1	Musty		
8:55	**D**	**Storage Ponds**	0			
9:00	**E**	**Influent, splitter chamber**	0			
9:02	**F**	**Sludge Bin area**	0			
9:02	**G**	**WAS & TWAS Tanks**	0			
9:05	**H**	**Centrifuge room**	1	Earthy		Door open

Intensity Scale 0 – no odor; 1 – very weak (odor threshold); 2 – weak; 3 – distinct; 4 – strong; 5 – very strong; 6 – intolerable

[1] See attached Map

Army Bay WWTP – Six Monthly Odour Monitoring Report

Date: 11 February 2025 **Time:** 14:14 **Person:** Margot Barreri

Wind Direction: NE **Wind Strength:** 0.1 km/h

Time	Location of odour[3]	Odour source	Strength	Description	Duration	Comments
8:30	**A**	**Biofilter # 1**	0			
8:40	**B**	**Grit bin**	1	Sewage		Localised to area
8:45	**C**	**Biofilter # 2**	0			
8:55	**D**	**Storage Ponds**	0			
9:00	**E**	**Influent, splitter chamber**	0			
9:02	**F**	**Sludge Bin area**	0			
9:02	**G**	**WAS & TWAS Tanks**	2	Musty		
9:05	**H**	**Centrifuge room**	0			

Intensity Scale 0 – no odor; 1 – very weak (odor threshold); 2 – weak; 3 – distinct; 4 – strong; 5 – very strong; 6 – intolerable

[1] See attached Map


A
B
C
D
E
F
G
H

Appendix D. Data Sources

Download location of environmental monitoring data used in this report

Category	Parameter	Source platform	Tag/ID
Rainfall	Total daily rainfall volumes	MOATA	ACC - Rain - Whangaparaoa Rainfall ID 646813
Discharge flow	Discharge volumes and flow rates	Pi DataLink	DTARB_48_FIT_100_PV
UV Dosing	Applied UV dose	Pi DataLink	DTARB_48_AYI_X01B_PV
Discharge quality	Physicochemical, nutrients, bacteria indicators, heavy metals	Labware ID	WSL_AB_STP_PUV_EFF_C DTARB-Field Data
Air quality	Odour reports	WSL shared drive	L:\Wastewater Operations\Regional Plants\Nth Region\03 Asset Ops_Nth\DTARB\19-Environmental Management\08-Odour