

# Awaba Waste Management Facility Annual Review



## Document control

## Approval of Annual Review

Operation name:	Awaba Waste Management Facility
Operator name:	Lake Macquarie City Council
Project Approval:	10_0139
Holder of Project Approval:	Lake Macquarie City Council
Start date of Annual Review	01/07/2023
End date of Annual review	30/06/2024

I, Paul Collins, certify that this Annual Review is a true and accurate record of the compliance status of the Awaba Waste Management Facility for the period 1 July 2023 to 30 June 2024 and that I am authorised to make this statement on behalf of Lake Macquarie City Council.

Accepted on behalf of Lake Macquarie City Council by:

Paul Collins

Manager Waste Services

P. Collin 29 July 2024

## **Version Control**

Document version	Date	Prepared by	Reviewed by
Final	29/07/2024	Ainslee Roser	Ben Fairfull



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Appendix B	EPL 5873 updated monitoring point locations
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# Acronyms

Acronym	Description
ABS	Australian Bureau of Statistics
AQOMP	Air Quality and Odour Management Plan
AR	Annual Review
AWMF	Awaba Waste Management Facility
AWMFEP	Awaba Waste Management Facility Expansion Project
ВМР	Biodiversity Management Plan
BOS	Biodiversity Offset Strategy
CHMP	Cultural Heritage Management Plan
CRC	Community Recycling Centre
DPE	Department of Planning and Environment
EA	Environmental Assessment
EIS	Environmental Impact Statement



Acronym	Description
EPA	Environment Protection Authority
EPL 5873	Environment Protection Licence 5873
FOGO	Food organics and garden organics
FY	Financial year
GHGMP	Greenhouse Gas Management Plan
HEC	Hunter Environmental Consulting
HWC	Hunter Water Corporation
IEA	Independent Environmental Audit
LEMP	Landfill Environmental Management Plan
LGA	Local government area
LMCC	Lake Macquarie City Council
М	metres
ONMP	Operational Noise Management Plan
ORRF	Oragnics resource recovery facility
PA	Project Approval 10_0139
PIRMP	Pollution and Incident Response Management Plan
REF	Renewable Energy Facility
SWLMP	Soil, Water and Leachate Management Plan
TWA	Trade waste agreement



# 1. Statement of Compliance

A summary of compliance of the Awaba Waste Management Facility (AWMF) against its major approvals is provided in Table 1-1.

Table 1-1 AWMF approvals

Approval	Compliance	Date of issue/version date
Environment Protection Licence (EPL) 5873	No	13 March 2024
Project Approval 10_0139	No	23 October 2013
Trade Waste Agreement	No	Interim Trade Waste Agreement

Non-compliances identified in the reporting period are summarized in Table 1-3, with the categorization of each compliance status detailed in Table 1-2.

Table 1-2 Categorisation of compliance status

Approval	Compliance	Description
High	Non-compliant	Potential for significant harm to the environment regardless of likelihood.
Medium	Non-compliant	Potential for significant harm to the environment, however unlikely to occur or potential for moderate harm to the environment which is likely to occur.
Low	Non-compliant	Potential for moderate harm to the environment, however unlikely to occur or potential for low harm to the environment which is likely to occur.
Administrative	Non-compliant	No risk of environmental harm.



Table 1-3 Non-compliances during reporting period

Relevant approval	Condition	Condition description	Compliance status	Comment	Addressed in Annual Review
Project Approval 10_0139	Sch 3 C1	The Proponent shall implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction, operation or decommissioning of the Project.	Non-compliant	This condition is reported as a non-compliance due to the non-compliances outlined in this table.	Refer to other non- compliances
	Sch 3 C2	The Proponent shall carry out the Project generally in accordance with the:  a) EA and Response to Submissions Report. b) Statement of Commitments (see Appendix 1). c) site layout plans and drawings in the EA, (as shown in Appendix 2 to 8). d) Modification Application (10_0139 MOD 1) with supporting documentation titled Environmental Assessment S75W Application to modify approved layout and staging of Awaba Waste management. e) conditions of this approval.	Non-compliant	This condition is reported as a non-compliance due to the non-compliances outlined in this table.	Refer to other non- compliances
	Sch 4 C6	Prior to commencement of operation, the Proponent shall ensure that a Trade Waste Agreement is in place with Hunter Water Corporation for the life of the Project.	Non-compliant	In the IEA undertaken in the previous reporting period, it was identified a Trade Waste Agreement for the life of the project had not been obtained. Hunter Water has advised they will not commit to a trade waste agreement for the life of the project as regulations on analytes are continually changing. LMCC operates under a Trade Waste Agreement and is bound by the conditions set by it.	D
	Sch 4 C18	The Proponent shall:  a) design and install the leachate management and collection system generally in accordance with the conceptual design in the EA (as shown in Appendix 5), applicable Australian Standards and industry standard best practice guidelines, or otherwise approved by the EPA;	Non-compliant	As the Trade Waste Agreement set by Hunter Water limits the amount of leachate that can be disposed due to ammonia levels, LMCC has had to undertake tankering to Hunter Water waste water treatment plants to maintain the leachate pond at a safe level.	Section 6.1.1



us	Addressed in Annual Review
LMCC has provided updates to the Department regarding negotiations with Hunter Water.  LMCC has engaged a consultant to present design options to treat leachate contaminants to satisfy HWC to allow continuous pumping of leachate to remove the need for tankering.  LMCC legal team has been liaising with DPE/DPHI to address this matter. As of the submission of this Annual Review, the matter has not been closed out.	Section 6.3.1
-cc	present design options to treat leachate contaminants to satisfy HWC to allow continuous pumping of leachate to remove the need for tankering.  Different LMCC legal team has been liaising with DPE/DPHI to address this matter. As of the submission of this Annual Review,



Relevant approval	Condition	Condition description		Compliance status	Comment	Addressed in Annual Review
EPL 5873	M2.1	For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns.			April 2024 quarterly monitoring recorded pH and electrical conductivity at MP10 via lab analysis, not probe as requested in EPL 5873.	Appendix A – Summary of water quality monitoring data FY 23/24 (prior to EPL 5873 update)
TWA		Concentration levels for discharge	ge:	Non-compliant	During the reporting period, testing of the leachate is undertaken weekly and	Section 6.1.2
		BOD (Biochemical Oxygen Demand)	Not to exceed 500mg/L		bimonthly to cover the compounds listed in the TWA. These results are provided to Hunter Water, and despite there being exceedances during the reporting period, Hunter Water did not put any restrictions on LMCC to pump outside of ammonia levels being restricted to 27kg/day.	
		NFR (Non-Filterable Residue)	Not to exceed 500mg/L			
		Ammonia	Not to exceed 1400mg/L			
		TKN (Total Kjeldahl Nitrogen)	Not to exceed 1500mg/L			
		TPH (Total Petroleum Hydrocarbons)	Not to exceed 30mg/L			
		pH	Not to be less than 6.5 or greater than 10			
		Chemical Oxygen Demand (COD)	Not to exceed 1500mg/L			
		Sulphate	Not to exceed 2000mg/L			
		Chromium Not to exceed 2.0mg/L				
		Copper	Not to exceed 2.0mg/L			
			Zinc	Not to exceed 1.5mg/L		
		Pesticides	Prohibited			
		Sum of PFAS	Prohibited			



## 2. Introduction

# 2.1 Purpose of the review

The purpose of the Annual Review (AR) is to satisfy Schedule 5, Condition 4 of Project Approval 10\_0139 to review the performance of the Awaba Waste Management Facility Expansion Project (AWMFEP). Condition 4 and the requirements for this review are outlined in Table 2-1.

This is the fourth (4th) Annual Review undertaken for the AWMFEP.

Table 2-1 Consent Conditions subject to Annual Review

·					
Condition	Condition requirements	Section of report			
Schedule 5, condition 4	One year after the commencement of operations, and annually thereafter, the Proponent shall review the environmental performance of the Project to the satisfaction of the Director General. The review shall:  a) Describe the operations carried out in the past year.	Section 4			
	b) Analyse the monitoring results and complaints records of the Project over the past year, which includes a comparison of these results against the  O Relevant statutory requirements, limits or performance measures/criteria; O Monitoring results of previous years; and O Relevant predictions in the EA.	Sections 6 and 8.2			
	<ul> <li>c) Identify any non-compliances over the last year, and describe what actions were (or are) being taken to ensure compliance.</li> </ul>	Section 1			
	<ul> <li>d) Identify any trends in the monitoring data over the life of the Project: and</li> </ul>	Section 6			
	e) Describe what measures will be implemented over the next year to improve the environmental performance of the Project.	Section 6 and 4.3			



## 2.2 Awaba Waste Management Facility

The AWMF is located at 367 Wilton Road, Awaba, 2283. The AWMF is operated by Lake Macquarie City Council (LMCC) and is operated to receive waste from residents and businesses in the Lake Macquarie local government area (LGA) and receives waste through a variety of sources including LMCC collection vehicles, waste collection contractors and direct drop off from residents and businesses.

In 2012 LMCC lodged an application under Part 3A (now repealed) of the Environmental Planning & Assessment Act 1979 (EP&A Act) to expand the landfill, with Project Approval (PA) being granted in May 2013 (10\_0139) allowing for construction of two additional areas (area A & B of figure 1.2 of the Environmental Assessment, Cardno, 2012) and ancillary works including new facilities.

A modification to the PA was granted in 2014 to stage construction of the cells and landfilling, and construction of leachate and stormwater management infrastructure.

Construction of cells 1 and 2 of the AWMFEP was completed in 2020.

The AWMF is licenced under Licence EPL 5873 and accepts general waste (putrescible and non-putrescible), and special waste (asbestos, lead contaminated soil, animals, quarantine waste and offensive waste).

Green waste is processed by a third party (Remondis) at the adjacent Lake Macquarie Organics Resource Recovery Facility (ORRF) which operates under a separate approval and EPL (EPL 20949).

Current operations are being undertaken in cells 1 and 2 and operates in accordance with the site's Landfill Environment Management Plan (LEMP).

The site layout is presented in Figure 2-1.



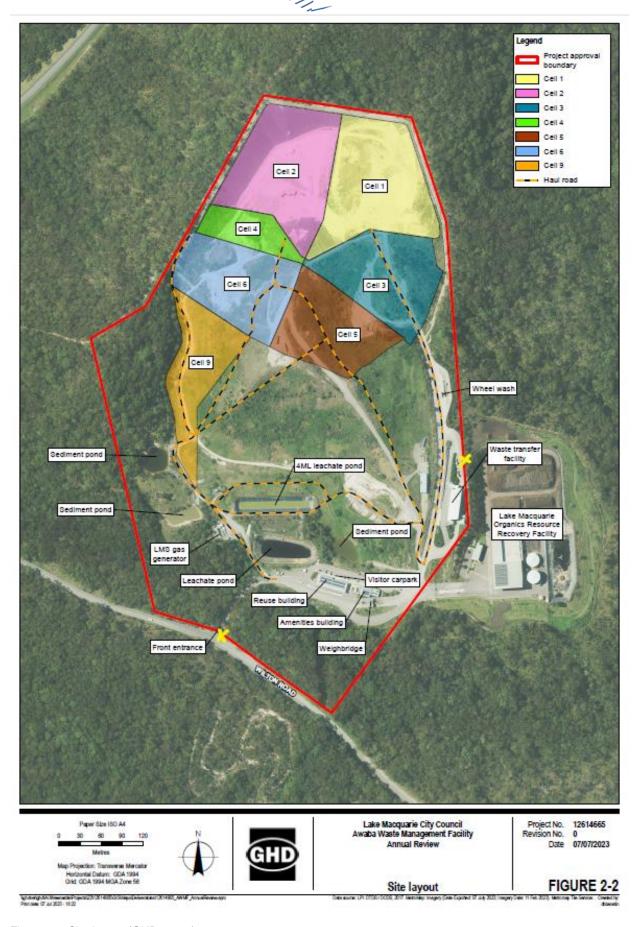


Figure 2-1 Site layout (GHD, 2023)



# 2.3 AWMF key contacts

Table 2-2 identifies the key contacts for the AWMF.

Table 2-2 AWMF contacts

Position	Name	Contact details
Manager Waste Services	Paul Collins	0436 935 440
Group Coordinator Waste Operations	Ben Fairfull	0417 841 201
AWMF Site Coordinator	Steven Merrett	0408 485 407
AWMF Environmental Officer	Ainslee Roser	0428 411 326



# 3. Approvals/licences

Current approvals held by LMCC for the AWMF are detailed below:

### 3.1 Environment Protection Licence 5873

EPL 5873 authorises LMCC to undertake waste disposal (application to land) of any capacity annually and composting capacity to receive organics between >5,000 – 50,000 tonnes annually.

EPL 5873 includes locations of monitoring and discharge points, limits applicable to the facility, restrictions on operating conditions, monitoring and recording conditions, and reporting conditions.

During the reporting period EPL 5873 underwent a variation which included:

- Condition P1.2 Varied The location of surface water EPA identification point 1 has been updated.
- Condition P1.2 Varied Surface water EPA identification points 8 and 9 have be removed from the licence, and replaced with identification points 11, 12, 14 and 15 to better reflect regional surface water background and premises influence.
- Condition P1.2 Varied Groundwater EPA identification points 19 to 23 have been added to the licence to assist in assessing remediation options and future success of the remediation.
- Condition P1.2 Varied The references to the monitoring plan have been updated.
- Condition P1.3 Added Surface water monitoring is to be undertaken at a time when water is available for sampling within the ephemeral creeks, for example, after rainfall.
- Condition L4.2 Varied amended noise monitoring requirements in response of complaints received.
- Condition M2.2 Varied Standing water level has been added to all groundwater monitoring locations
- Condition M2.2 Varied Phosphorus has been added to all monitoring points.
- Condition M2.3 Added- Dissolved metals have been added where total metals was already required.
- Condition O6.15 Added new condition prescribing the conditions for immediate covering of asbestos waste received at the premises.

## 3.2 Project approval 10\_\_0139

Approval was granted on 8 May 2013 (Project Approval No. 10\_0139) for expansion of the AWMF including:

- Staged excavation of two new areas on-site to create additional landfill space;
- Additional waste emplacement over the existing landfill;
- Expansion of the on-site leachate management system;
- Installation of a package pumping station on-site and a rising main to transfer excess leachate and sewage to the No. 6 Waste Water Pump Station at Rathmines;
- Installation of additional sediment management basins;
- Expansion of the landfill gas management system;
- Construction of a permanent transfer station;
- Construction of a wheel wash facility;
- Replacement of the existing weighbridges;
- Construction of a new reuse centre with amenities.



A modification to the PA was granted in 2014 to stage construction of the cells and landfilling, and construction of leachate and stormwater management infrastructure.

No modifications to the PA were undertaken during the reporting period.

## 3.3 Hunter Water Corporation Trade Waste Agreement

LMCC operates under a Trade Waste Agreement implemented by Hunter Water for disposal to sewer as a non-standard sewer service.

LMCC discharges the sewer from the onsite amenities at the AWMF, the Remondis amenities and the leachate pond at the AWMF. There is capacity for Remondis to discharge their leachate into the AWMF leachate pond with prior approval from the AWMF Site Coordinator.

The Trade Waste Agreement is set for a specified time by Hunter Water, and upon expiry a new Trade Waste Agreement is negotiated between LMCC and Hunter Water.

LMCC is currently operating under an interim Trade Waste Agreement due to the upgrade of the Toronto Waste Water Treatment Plant, which requires one of the two tanks to be offline whilst the upgrade is undertaken. Hunter Water has advised the upgrade is due for completion in January 2025, at which point LMCC and Hunter Water will enter a new Trade Waste Agreement.



# 4. Operational activities

## 4.1 AWMF Operations

#### Landfill waste

The AWMF is licensed to accept the following for waste disposal through application to land under EPL 5873:

- Asbestos waste:
- General solid waste (non-putrescible);
- General solid waste (putrescible).

The AWMF accepts waste through LMCC collection vehicles, waste collection contractors, and waste self-hauled by businesses and residents. Waste is classified on entry to the site and where applicable charged based on the type and quantity disposed.

Residents and general public utilise the Transfer Station on site to drop off their green waste and/or mixed waste. Green waste is transferred to the adjacent Remondis Food Organics and Garden Organics (FOGO) facility, and mixed waste transported to the tip face where it is sorted and where possible materials recovered for diversion from landfill e.g. metals to be sold for scrap, concrete, mattresses for recycling.

Monitoring of waste is undertaken in accordance with the AWMF Waste Screening, Acceptance and Resource Monitoring Program Procedure (Version 1).

During the reporting period all landfilling operations have been undertaken in Cell 2.

#### **Special Waste**

The AWMF accepts the following 'special wastes':

- Asbestos:
- Lead contaminated soil;
- · Dead animals;
- Sewage sludge;
- Confidential documents.

Special waste requires special handling at the tip face with immediate covering to prevent possible environmental/occupational impacts or for confidential reasons.

The procedure for 'special waste' is detailed in the AWMF Waste Screening, Acceptance and Resource Monitoring Program Procedure (Version 1).

#### **Community Recycling Centre (CRC)**

The CRC provides the community with a sustainable way to dispose of problem household waste free of charge. The AWMF accepts the following problem household wastes at the CRC:

- Paint oil and water based (in liquid form only);
- Gas cylinders;
- Fire extinguishers;
- Fluorescent light globes and tubes;
- Household batteries;
- Motor oils;



- · Other oils:
- Smoke detectors;
- Soft plastics, CD/DVDs;
- Co-mingled household recyclables;
- Electronic waste;
- Polystyrene;
- Vehicle batteries;
- X-rays.

Vehicle batteries are collected which are sold for scrap metal content (lead).

#### **Food Organics and Garden Organics**

Adjacent to the AWMF, the contractor for LMCC, Remondis built and operated an Organic Resource Recovery Facility (ORRF). FOGO waste entering the facility from collection vehicles is directly taken to the ORRF for processing, and green waste dropped off at the Transfer Station is then transported to the ORRF by AWMF staff. The ORRF is operated by a third party under a separate planning approval and maintained under a separate EPL to EPL 5873.It does not form part of the AWMFEP.

#### Types and quantity of waste

Under PA 10\_0139 the AWMF is approved to accept up to 150,000 tonnes of waste per annum. EPL 5873 does not place a restriction on the facility regarding the amount of waste disposal by application to land, and sets a limit of >5,000-50,000 tonnes annual capacity to receive organics for composting(note, this is undertaken at the ORRF which operates under a separate EPL). The facility is licensed to accept:

- Waste tyres maximum 150,000 tonnes per annum,
- Asbestos waste maximum 150,000 tonnes per annum,
- General solid waste (non-putrescible) maximum 150,000 tonnes per annum,
- General solid waste (putrescible (maximum 150,000 tonnes per annum,
- Waste (waste storage) no limit.

## 4.1.1 Waste Handling and Processed

The amount of waste received at the AWMF for the reporting period is detailed in Table 4-1.



Table 4-1 Waste volumes received

Type of waste	Approved limit	Waste received (tonnes)
Municipal	of all waste types may be disposed per annum	52,216.02
Construction and demolition		8,796.12
Commercial and industrial		3,238.42
Recovered material from landfill for recycling		-910.54
Landfill alternative cover material		63.26
Total		64,092.12

## 4.1.2 Resource Recovery

Resource recovery is undertaken in accordance with the *Waste Screening, Acceptance and Resource Monitoring Programme* (LMCC, 2023). The effectiveness of resource recovery measures is analysed through benchmarking against previous years' recovery rates and reported annually.

Table 4-2 Summary of waste diverted from landfill over last four reporting periods.

	2007-2008	2020-2021	2021-2022	2022-2023	2023-2024
Total waste received (t)	169,335	67,735.56	67,088.18	65,702.86	64,092.12
On-site use for operations (t)	32,040	3,444.54	2,853.92	3,990.80	841.56
Green waste and recyclables diverted from landfill (t)	10,105	57,952.50	62014.20	54,449.58	54,023.43
Waste to Landfill (t) (excluding cover material)	118,190	66,542.86	65,824.68	64,654.76	63,181.58
ABS - revised resident population (ABS March 2021)		213,845	215,983	218,143	220,324
Waste to landfill generated per capita (kg)	615	311	305	296	287



	2007-2008	2020-2021	2021-2022	2022-2023	2023-2024
Compared to 2007- 2008 waste reduction baseline (615 kg per capita)	Baseline	<b></b> \$49.43%	<b>₽50.40%</b>	<b></b> \$51.86%	<b>₽53.33%</b>



# 4.2 Administrative operations

## 4.2.1 Hours of Operation

The AWMF operates within the following hours in accordance with Schedule 4, Condition 30 of the PA:

Monday to Friday
 Weekend & Public Holidays
 8:00 am - 4:00 pm
 8:00 am - 4:00 pm

• Christmas Day, New Years Day Closed.

## 4.2.2 Equipment

The following equipment was utilized onsite during the reporting period to undertake operational operations:

Equipment	Number on site
Alternate Daily Cover Vehicle / Water Cart	1
Steel Drum Roller	1
Gas Monitor	1
Flexi Drive Pumps	3
Diesel Pumps	2
2 Tonne Tipper	1
4 Wheel Drive dual cab utility	2
Portable handheld radios	11
Base Station Radio	1
Fire Extinguishers	20
Fire Hose Reels	2
Wash Down Hose Reels	8
Fire Blankets	3
Eyewash Stations	6
Avant 750 Loader	1
Hook Lift Trucks	2
Transfer Station Hook Lift Bins	7
Dirt Hook Lift Bins	2
Subaru Outback Wagon	1



Equipment	Number on site
Firefighting water cart	1

In accordance with Schedule 3, Condition 13 of the PA all plant and equipment utilized for operation is maintained and operated in a proper and efficient manner.

# 4.3 Next reporting period

Activities proposed to be undertaken in the next reporting period include:

Activity proposed	Anticipated date of commencement		
Continuation of the design of Cells 3 and 4, including leachate treatment options	Underway		
Temporary maintenance shelter	First quarter 24/25 FY		
Acceptance of tyres to be disposed at facility	First quarter (1 July 2024)		
Training of staff to keep up to date with procedures including but not limited to:  • Breathing apparatus training  • On site firefighting training	As required		



# 5. Actions required from previous Annual Review

A summary of the activities undertaken and outstanding from the 22/23 financial year (FY) Annual Review is provided below. Additionally, actions or the 2021 Independent Environmental Audit (IEA) that were proposed to be undertaken is also provided.

Activity proposed during last reporting period	Status of activity as of 23/24 FY reporting period			
22/23 FY reporting period				
<ul> <li>A new plastics recycling initiative from 15 July 2022 was established to encourage Lake Mac residents to drop off their soft plastics and old CDs/DVDs, including the jewel cases, in special recycling bins at the Awaba Community Recycling Centre (CRC) in in partnership with Plasmar, a Sydney-based plastic products manufacturer who will receive the recovered soft and hard plastics.</li> <li>The initiative will be initially trialled for 12 months. This was developed and prepared during this reporting period, with implementation in the next review period.</li> </ul>	plastics from the community, however has temporarily			
Construction of temporary maintenance shelter	LMCC did not undertake construction of the maintenance shed in the 23/24FY reporting period.  The design for the shed has changed and will be constructed in the first quarter of the 24/25FY.			
As part of LMCC's continuous improvements to safety and emergency response, the following training will be undertaken:  • Armed holdup training.	Armed holdup training was undertaken June 2024.			
As part of LMCC's continuous improvements to safety and emergency response, the following training will be undertaken:  • Breathing apparatus training.	RTO breathing apparatus training was undertaken by the employees of the AWMF on 2 August 2023. Refresher training will be undertaken yearly with an RTO.			
Outstanding items from 2021 IEA				
Liaise with internal sub-contractors regarding oil and chemicals handling and storage practices.	Completed (TRIM reference D11625861)			
Arborist inspection of culturally modified tree.	Completed Customer reference 44505/2023			
Weed, pest and vermin inspection.	Completed (TRIM reference F2023/01598)			
Implementation of a compliance management system.	Completed (TRIM reference D11169102)			
A review of the site induction process.	Completed (TRIM reference D1115985)			
Installation of a sign indicating presence of the culturally modified tree.	Completed (TRIM reference D11626043)			



Activity proposed during last reporting period	Status of activity as of 23/24 FY reporting period
Installation of water management infrastructure (if required) based on investigations and assessments completed by consultants.	As part of the design and construction of cells 3 and 4, treatment options for leachate are being investigated.
Engagement with DPE regarding rolling annual licenses and HWC regarding future TWAs.	As per section 3.3, LMCC has entered an interim Trade Waste Agreement with Hunter Water until the upgrade of the Toronto Wastewater Treatment Plant has been completed.
Completion of remaining IEA actions, as outlined in Table 9 1.	LMCC has closed off 48 of the 59 outstanding actions remaining since the last Annual Review. Those currently outstanding are detailed in Table 9-1.



## 6. Environmental performance

The Environmental management of the AWMF is governed by the 'Awaba Waste Management Facility Landfill Environmental Management Plan (2021)' (LEMP). The LEMP is available on the AWMF expansion website (*Awaba landfill expansion - Lake Macquarie City Council*). Six of the seven LEMP subplans have been approved by DPE/DPHI. Once the final subplan is approved, the updated LEMP will be uploaded to the website.

The LEMP contains several subplans as detailed below:

- Soil, Water and Leachate Management Plan (SWLMP)
- Operational Noise Management Plan (ONMP)
- Biodiversity Management Plan (BMP)
- Cultural Heritage Management Plan (CHMP)
- Air Quality and Odour Management Plan (AQOMP)
- Greenhouse Gas Management Plan (GHGMP)
- Pollution and Incident Response Management Plan (PIRMP)

This section reports on the management and performance over the 23/24 FY reporting period for each environmental aspect.

## 6.1 Soil, water and leachate

## 6.1.1 Management

Soil, water and leachate at the AWMF is managed in accordance with the SWLMP. A summary of the management measures covered by the SWLMP is provided below:

- Stormwater Key management objectives for stormwater are:
  - o Minimise erosion and sediment generation at the source.
  - o Maintain discharge levels to pre-development values.
  - o Divert runoff from disturbed areas through sediment basins prior to discharge offsite.

Management of these matters are achieved through minimising both clean and dirty water runoff, minimizing the extent of disturbed Lnd including area being landfilled and providing drainage infrastructure for reuse on site or disposal offsite.

- Erosion and Sediment control Key management objectives for erosion and sediment are:
  - o Prevent soil erosion.
  - Minimise generation of sediment laden water and prevent sediment laden water from discharge off site.
  - Prevent surface water contamination by sediment.

Management of these matters are achieved through minimizing clean stormwater from entering disturbed areas, maximizing potential for treatment of dirty stormwater runoff from disturbed areas to be reused onsite/disposed offsite, managing erosion and sediment controls e.g. diversion drains, providing stormwater devices in trafficked areas.

- Leachate Key management objectives for leachate are:
  - Prevent groundwater pollution by leachate.
  - Prevent surface water pollution by leachate.



o Prevent amenity impacts to nearby waterways.

Management of these matters are achieved through management of rainfall infiltration to the landfill including intermediate and daily capping, design and commissioning of cells in a staged approach, installation of leachate barrier systems in all new cells, leachate capture from unlined areas and the quarry cell, monitoring leachate quantity/quality and disposal of leachate via the sewer system as managed in the TWA with HWC. In events of high rainfall inflows and high ammonia levels, LMCC may be required to tanker leachate to a Hunter Water Waste Water Treatment Plant to keep leachate levels at a safe and manageable level. LMCC will also liaise with Hunter Water to seek approval to discharge leachate above agreed ammonia levels of 27kg mass load daily.

#### Monitoring of surface water and groundwater

LMCC undertakes a Surface Water, Groundwater and Leachate Monitoring Program to implement the ongoing monitoring of potential environmental impacts of the AWMF on surface and ground water quality. This includes monitoring as required under EPL 5873, and leachate monitoring required as part of the TWA with HWC. Monitoring data is provided in Appendix A – Summary of water quality monitoring data FY 23/24 (prior to EPL 5873 update).

#### 6.1.2 Performance

LMCC measures some analytes against ANZECC 95% freshwater guidelines. Results above the assessment criteria of these guidelines do not represent exceedances of the license conditions, and reports these results to DPHI, and the EPA where it is recognised there is potential for environmental harm. Only values above the EPL 5873 limit of 50 mg/L of total suspended solids are reportable exceedances of license conditions.

#### Monitoring during the reporting period

Five monitoring events occurred during the reporting period:

- 12 July 2023
- 16 August 2023 (makeup round of sampling for quarter missed in January 2023)
- 26 September 2023
- 25 and 30 January 2024
- 30 April, 2 May and 7 May 2024

Under Condition M2.1 of EPL 5873, water monitoring is required to occur on a quarterly basis. During the financial year, a revision of EPL 5873 occurred, with the addition of 4 groundwater monitoring points, and removal of 2 surface water monitoring points which were replaced 4 different surface monitoring points (refer to Appendix B - EPL 5873 updated monitoring point locations). Results of the monitoring program during the reporting period are provided in Appendix A – Summary of water quality monitoring data FY 23/24 (prior to EPL 5873 update), with a summary of results above the ANZECC 95% freshwater guidelines provided below:

#### Groundwater

- Groundwater sites were mildly acidic, which is consistent with historical sampling data.
- Electrical conductivity varied greatly across the groundwater monitoring sites, with site 5, site 21, site 22 and site 23 recording levels significantly higher than other sites. These sites are located around the leachate pond, however other groundwater sites located in thus same area did not record such high levels.



- Ammonia levels were significantly high at site 3, site 4, site 22 and site 23. These sites are located on the eastern side of the leachate pond.
- The following metal concentrations were higher than the ANZECC 95% freshwater guidelines:
  - Manganese all groundwater sites.
  - o Zinc sites 1 and 2.
  - o Iron sites 4 and 5.

Given some high metal levels are occurring at site 1 suggests the groundwater upstream from the AWMF has high metal levels.

#### Surface water

- Site 6 and site 7 were generally neutral across the monitoring period. During the one round of testing for sites 11 – 15, sites were producing acidic results between 4.55 and 5.55pH.
- Electrical conductivity across the surface water points was low (ranging 150 738).
- Ammonia levels at site 6 and site 7 were higher than the guidelines for the April 2024 sampling, with no other exceedances across surface water.
- The following metal concentrations were higher than the ANZECC 95% freshwater guidelines:
  - Manganese was above the guidelines for all sites for the April sampling, with site 6 elevated for the January 2024 sampling.
  - o Copper was above the guidelines at site 6 for the September 2023 sampling.

#### Leachate

- pH at site 10 was consistently alkaline over the monitoring period.
- Electrical conductivity ranged from 313 to 13,000 across the monitoring period. Due to the constantly changing inflows and depths of the pond, large fluctuations are to be expected.
- Ammonia levels were consistently high at site 10 ranging from 324 to 1130. Due to the nature of the leachate, ammonia levels are expected to be high.
- The following metal concentrations were higher than the ANZECC 95% freshwater guidelines:
  - Manganese was higher than the guidelines during the January and April 2024 sampling period.
  - o Arsenic was above the guidelines for the April 2024 sampling period.

EPL 5873 restricts the discharge of surface water from the site to 50 mg/L of total suspended solids. This concentration limit is only permitted to be exceeded at the discharge point of the two final sedimentation dams (MP6 and MP7) for the duration of the overflow "whenever a wet weather overflow is occurring due to stormwater events greater than or equal to a 90th percentile 5 day rainfall duration".

The 50mg/L limit was exceeded at site 6 during the April 2024 sampling, however as discharge did not occur, this does not constitute a breach of EPL 5873.

As per the TWA, leachate testing is undertaken weekly for: pH, total dissolved solids, total suspended solids, volatile solids, alkalinity, Ammonia, TKN, chemical oxygen deman and biological oxygen demand.

Bimonthly testing is undertaken for the following additional compounds: sulfate, chromium, copper, zinc, total petroleum hydrocarbons, total recoverable hydrocarbons, BTEXN, pesticides, PFAS.

These results are added to the 'Awaba Waste Management Facility-Pumping to Sewer' spreadsheet, and the 'Awaba Waste Management Facility-Leachate Analytical Results' spreadsheet, and sent to Hunter Water.

## 6.1.3 Proposed improvements



As part of the design and construction of cells 3 and 4, LMCC has included investigation of treatment options for the leachate pond (site 10) for the high levels of ammonia and other analytes which are higher than the allowable concentrations in the Trade Waste Agreement. As of the end of the 2023/2024 FY, design options are being compiled by the design consultant.

The liner of the bottom leachate pond requires replacement, and the design is being incorporated into the design of cells 3 and 4.

## 6.2 Operational noise

## 6.2.1 Management

Operational noise at the AWMF is managed in accordance with the ONMP. A summary of the management measures covered by the ONMP is provided below:

- Reducing the likelihood of adverse noise impacts on neighbouring sensitive receivers through:
  - Maintenance of plant and equipment.
  - o Implementing noise control devices where applicable.
  - o Training of staff operating plant in relevant noise minimization measures.
  - Selecting plant and equipment with consideration of their acoustic operation.
- Undertaking noise monitoring where required as triggered by noise complaints. Due to the bushland buffer around the AWMF, and proximity to sensitive receivers, operational noise does not affect neighbouring sensitive receivers, therefore scheduled noise monitoring is not required. No noise complaints have been received for the AWMF in the last 4 years.

#### 6.2.2 Performance

Under the conditions of EPL 5873 and the PA, operational noise from the AWMF is limited to:

- a) an LA10 (15 minute) noise emission criterion of 45 dB(A) (7am to 6pm) Monday to Sunday; and
- b) an LA10 (15 minute) noise emission criterion of 45 dB(A) during the evening (6pm to 10pm) Monday to Friday;
- c) at all other times, an LA10 (15 minutes) noise emission criterion of 35 dB(A).

Operational noise at the AWMF has been assessed through the following:

- The Environmental Assessment (Cardno, 2012),
- The Operational Noise Validation (GHD, 2021), and
- Noise Monitoring Report (HEC, 2024).

The results of these assessments shows that the AWMF does not exceed the noise limitations at the locations of the sensitive receivers.

Following completion of the HEC Noise Monitoring Report, a request was made to the EPA during EPL 5873 review to amend noise monitoring to the following which was approved in the current EPL 5873:

L4.2 "Noise from the premises is to be measured at any point within six metres of the nearest residential residence or other noise sensitive areas in the vicinity after a complaint has been raised to determine compliance with this condition"

No noise complaints were received for the AWMF in the reporting period.



LMCC undertakes scheduled maintenance of plant and equipment on site to ensure excessive noise and emissions are not being produced. Operational measures such as turning machinery off instead of idling, speed limits and minimizing use of engine brakes on site contribute to reducing operational noise.

## 6.2.3 Proposed improvements

No improvements are proposed for the next reporting period for operational noise.

## 6.3 Biodiversity

## 6.3.1 Management

Potential biodiversity impacts at the AWMF is managed in accordance with the BMP. A summary of the management measures covered by the BMP is provided below:

- Management of flora and fauna impacts in accordance with conditions of the PA including incorporation of a Vegetation and Fauna Management Plan and Translocation Plan.
- The Biodiversity Offset Strategy (BOS) established the Awaba Biodiversity Conservation Area to compensate for impacts from the AWMFEP on biodiversity, as well as two other LMCC projects (Lake Macquarie Transport Interchange and the Awaba Alternative Waste Treatment Facility (the Remondis operated ORRF). The Awaba Biodiversity Conservation Area is shown in Figure 6-1.

A Plan of Management for the Awaba Biodiversity Conservation Area was prepared as required under the PA. This outlines how the Awaba Biodiversity Conservation Area is managed and protected, including the following land management guidelines:

- Weed and pest management,
- Access and track management,
- Biodiversity and threatened species management,
- Bush fire management,
- Governance, monitoring and reporting.

A restrictive covenant is required to be placed on Lot 463/DP 1138964 (the Awaba Biodiversity Conservation Area), to protect and manage the area.

Pest and weeds at the AWMF are managed in accordance with the LEMP. A summary of the management measures covered by the LEMP are provided below:

- Cover and compact waste daily,
- Minimise food and habitat for pests and vermin and engage professional exterminators if an outbreak is detected,
- Regular inspections of the AWMF to ensure pests and priority weeds are not present in significant numbers to cause environmental harm or hazards,
- Quarterly inspections and treatment by the LMCC biosecurity team

#### 6.3.2 Performance

No impacts outside of those assumed in the PA have occurred during the reporting period.



A summary of the actions undertaken by LMCC's Natural Assets Project Team within the Biodiversity Conservation Area are outlined below:

- July 2023 targeted Whisky Grass removal including cutting seeds, bagging, and removing from site.
- December 2023 weed removal at an illegal dumping site to prevent weed spread into nearby bushland.
- April 2024 Targeted weed spraying along roadside to prevent Coolatai grass spreading into nearby bushland. Opportunistic spraying of morning glory.
- May 2024 Targeted weed removal along trails of Whisky Grass, Parramatta Grass and Paspalum.

The following non-conformances identified in the 2021 IEA were addressed in the reporting period:

 A quarterly weed management program was established at the AWMF in conjunction with the LMCC Biosecurity team to target priority weeds as identified in the 'Hunter Regional Strategic Weed Management Plan 2023-2027' with reports saved to TRIM (F2023/01598).

Biosecurity inspections were undertaken 19 October 2023, 8 February 2024 and 9 May 2024 with the following results:

- October 2023 Priority weeds found included bitou bush, pampas grass and rattlepod. Weeds were treated with glyphosate and metsulfuron. Previously identified groundsel bush infestation locations found no groundsel bush plants. Sediment ponds were inspected for aquatic weeds with nothing identified.
- February 2024 Priority weeds found included bitou bush, rattlepod and one groundsel bush.
   Weeds were treated with metsulfuron. Sediment ponds were inspected for aquatic weeds, with nothing found.
- May 2024 Priority weeds found included bitou bush and pampas grass. A new infestation of 'biosecurity control order' species Chinese violet was found with a further delimitation inspection required to determine the extent of the infestation. Weeds were treated with glyphosate and metsulfuron.

The updated BMP was submitted to DPE and approved 2 November 2023.

## 6.3.3 Proposed improvements

The Awaba Biodiversity Conservation Area Plan of Management is proposed to be update in the 24/25 FY by LMCC's Natural Assets Team.





Figure 6-1 Awaba Biodiversity Conservation Area



## 6.4 Cultural heritage

## 6.4.1 Management

Cultural Heritage at the AWMF is managed in accordance with the CHMP. A summary of the management measures covered by the CHMP is provided below:

- · Protection of Cultural Heritage artefacts,
- Procedures for uncovering previously unknown heritage artefacts,
- Procedures for uncovering potential human remains,
- Salvage of sites and repatriation if applicable,
- Site inductions.
- · Incident and complaint management.

The CHMP details monitoring of the one known site at the AWMF (45-7-0331), and monitoring requirements of any future repatriation locations.

Monitoring measures for 45-7-0331 include annual inspections by an LMCC arborist and maintenance of the fence and signage erected around the site.

#### 6.4.2 Performance

During the reporting period LMCC implemented the annual program of having 47-7-0331 inspected by an arborist, and signage was installed on the fencing to identify measures for keeping the site safe. The updated CHMP was submitted to DPE and approved 22 November 2023.

Every 6 months an update is provided to the Registered Aboriginal Parties (RAPs) consulted with in preparation for the original CHMP. This is saved in a log (TRIM reference F2024/00205/02). There were no changes to the Project during the reporting period.

These actions closed out the following non-conformances as identified in the 2021 IEA:

- Signage was installed at the culturally modified tree (Site 45-7-0331).
- The Cultural Heritage Management Plan (CHMP) is revised and updated to reflect changes and existing operations and was sent to DPE for approval.
- LMCC confirmed no salvage of Cultural Heritage was undertaken at the AWMF as part of the AWMFEP.

## 6.4.3 Proposed improvements

No improvements are proposed for the next reporting period for Cultural Heritage. It is expected within the next reporting period construction of cells 3 and 4 will commence, and as such the RAPs will be notified.

## 6.5 Air quality/odour

## 6.5.1 Management



Air quality at the AWMF is managed in accordance with the AQOMP. A summary of the management measures covered by the AQOMP is provided below:

#### Dust management

- Water cart on site to continuously wet down unsealed surfaces,
- o Designated vehicle routes to minimize disturbance,
- Wheel wash facility to prevent buildup of dust on access roads,
- o Daily and intermediate cover to minimize airborne dust and litter from landfill.

#### Odour management

- o Intermediate and daily capping of landfill cells employed,
- o Keeping active tipface to minimum extent possible,
- Aeration of leachate pond to prevent anaerobic conditions,
- o Leachate onsite is not used for irrigation except in emergency situations (e.g. heavy rainfall).

#### Methane gas emissions

- Gas capture plant and equipment (gas flaring and electricity generation plant) maintained to reduce undesirable combustion by-products,
- Plant and equipment utilized at AWMF fitted with pollution control equipment and maintained to manufacturers specifications,
- Should plant or equipment begin to produce excessive emissions, it will sent for repairs or replacement as required.

The AQOMP details measures to reduce the likelihood of impacts to air quality during adverse meteorological events.

The PA stipulates limits for dust generation on site. Air quality monitoring was undertaken in September/October 2023 by Hunter Environmental Consultants (HEC) which showed the AWMF is in compliance with these levels. As such, the AWMF is compliant with dust generation limits for the AWMFEP.

Any complaints received relating to air quality are handled in accordance with the Awaba Waste Management Facility / Green Waste Processing Facility – Complaints Management Procedure.

No air quality or odour complaints attributable to AWMF were received during the reporting period.

#### 6.5.2 Performance

The Air quality monitoring undertaken by HEC between  $4^{th}$  September 2023 and  $6^{th}$  October 2023 identified no exceedances of the PM<sub>25</sub> daily average criteria and three PM<sub>10</sub> exceedances of the 50  $\mu$ g/m³ daily average criteria (National Environment Protection Council (NEPC), (2021) National Environment Protection (Ambient Air Quality) Measure 1999, NEPM, Canberra (NEPC 2021) as below:

PM<sub>10</sub> Daily Average Criteria – 50 μg/m<sup>3</sup>

#### PM2.5 Daily Average Criteria - 25 µg/m<sup>3</sup> **Monitoring event** Date Site Particulate matter Daily average number exceedance concentration that exceeded criteria (µg/m3) 28/09/2023 **AWMF** PM<sub>10</sub> 104.9 1 1 30/09/2023 **AWMF** PM<sub>10</sub> 355.5

PM<sub>10</sub>

AWMF

3/10/2023

52.1



A small fire limited to 1.5m³ occurred on the tip face at the AWMF on Saturday 30/09/2023. The ORRF facility had a substantial fire that occurred on Sunday 1/10/2023 and continued burning into Monday 2/10/2023. These events may have contributed to the higher-than-expected readings recorded at the end of the month.

As such, substantial compliance with the daily average criteria for PM10 has been demonstrated throughout the majority of the monitoring period, with no exceedances directly related to the facility standard operations being identified.

The updated AQOMP was submitted to DPE and approved 13 September 2023.

## 6.5.3 Proposed improvements

No improvements are proposed for the next reporting period for Air quality/odour.

## 6.6 Greenhouse gas

## 6.6.1 Management

Greenhouse gas at the AWMF is managed in accordance with the GHGMP and by third party contractors LMS. A summary of the management measures covered by the GHGMP is provided below:

- Installation of landfill gas collection infrastructure as cells are constructed,
- Monitoring of subsurface (LMS) and surface landfill gas (LMCC),
- Intermediate and daily cover to minimise gas escaping into the atmosphere,
- Design of onsite buildings to minimize the likelihood of gas accumulating within them.

The AWMF has an active landfill gas extraction and treatment system which is operated by LMS. Landfill gas is extracted from the waste mass using a fan which directs the extracted gas to the onsite treatment plant. Landfill gas treatment at the AWMF is predominately undertaken at the Awaba Renewable Energy Facility (REF) via combustion in a landfill gas fueled reciprocating engine that drives a generator to create renewable electricity (which is ultimately exported to the electricity grid). During periods of engine downtime, or when otherwise required, landfill gas can be directed to a landfill gas flare located at the AWMF.

Greenhouse gas monitoring of gas combustion and gas flaring is reported under the *National Greenhouse* and *Energy Reporting Act 2007 (NGER Act)* by LMS.

Surface landfill gas monitoring is undertaken in accordance with EPL 5873 including gas accumulation monitoring in buildings, and surface monitoring where intermediate or final capping has been applied. Monitoring is undertaken monthly in accordance with sections 5.2 and 5.4 of the 'Environmental Guidelines: Solid Waste Landfills (EPA, 2016)'.

For landfill gas surface emissions monitoring, the threshold for corrective action is methane concentrations exceeding 500 parts per million (ppm) at any point on the landfill surface for intermediate and finally-capped areas.

Landfill gas accumulation monitoring is implemented to demonstrate that gas is not accumulating at dangerous levels in enclosed spaces on or near the landfill. The gas accumulation monitoring program



consists of monthly methane monitoring in all buildings and other enclosed structures within 250 metres (m) of the landfill. The threshold level for further investigation and corrective action is detection of methane at concentrations above 1% (volume/volume) (10,000ppm)

#### 6.6.2 Performance

Landfill gas combustion results and gas flares are presented in Table 6-1.

A total of 20,407.77 tonnes of Carbon dioxide equivalent (CO<sub>2</sub>e) methane was combusted during the reporting period, generating 3,349,007 kilowatt hours (kWh) of renewable energy. In addition to this, 2,798.19 tonnes of CO<sub>2</sub>e methane was combusted via gas flaring during the reporting period.

Table 6-1 Landfill gas combustion during reporting period

Month	Volume landfill gas (m³)		CO₂e		Generated	
	Flares	REF	Total	Flares	REF	kWh
Jul 23	4,731	273,420	278,151	N/A	2,110.48	362,258
Aug 23	2,680	291,865	294,545	N/A	2,145.99	367,232
Sept 23	669	255,620	256,289	N/A	1,872.00	331,784
Oct 23	7,711	229,160	236,871	N/A	1,739.23	310,620
Nov 23	9,472	250,738	260,210	N/A	1,813.89	321,128
Dec 23	164,656	98,024	262,680	1,163.10	785.10	136,334
Jan 24	6,079	275,180	281,259	48.50	2,136.89	339,400
Feb 24	78,204	208,006	286,246	640.57	1,517.23	237,036
Mar 24	492	291,576	292,068	N/A	2,202.66	339,988
Apr 24	103,512	108,670	212,182	946.02	952.23	128,514
May 24	75,508	163,492	239,000	N/A	1,457.49	220,266
Jun 24	27,563	179,910	207,473	N/A	1,674.58	254,447
Total	481,313	2,625,611	3,106,974	2,798.18	20,407.77	3,349,007

Landfill surface gas monitoring during the reporting period did not report any exceedances of the 500ppm threshold. Equally, gas accumulation monitoring did not report any exceedances of the 10,000ppm during the reporting period.

Results for surface and accumulation methane monitoring are uploaded to the Awaba Waste Management Facility's website each month per the EPL 5873 requirements.

## 6.6.3 Proposed improvements



LMCC and LMS have initiated discussions regarding gas pipe locations and the possible relocation of some gas pipes from above ground to below ground to accommodate the upcoming construction of cells 3 and 4.



## 7. Rehabilitation of the AWMF

Schedule 4, Conditions 57 and 58 of the PA required LMCC to prepare a Landfill Closure and Rehabilitation Management Plan for the AWMFEP within 12 months of the commencement of the PA.

LMCC wrote to the DPE on 8 July 2021 to request clarification on this condition, given that the operational life of the AWMF is expected to be in the order of 30 years and the rehabilitation activities would not commence until closer to this time. Due to anticipated changes in legislation, technology and community expectation, any rehabilitation and closure management plan developed at this time would likely be subject to significant variation and redundancy in contrast to any plan developed closer to the end of the site's operational life.

LMCC engaged a consultant to assist with the preparation of the Awaba Waste Management Facility Landfill Closure and Rehabilitation Management Plan. This Management Plan was completed and submitted to DPE on 5 August 2022.

Landfill areas awaiting 'piggy backing' of future cells have intermediate cover in the form of dredgings, with re-vegetation. As the site is anticipated to operate until 2041, no closure or final rehabilitation activities have been undertaken. The first stage of final capping is anticipated to commence in 2026.



#### 8. Community

#### 8.1 Community engagement

LMCC prepared a Community Education Program in accordance with the Schedule 5, Condition 11 of the PA. The Community Education Program guided engagement actives to encourage use of the CRC and to promote resource recovery.

The following community engagement activities and initiatives were undertaken during the reporting period:

- In March 2024, LMCC transitioned from a scheduled bulky waste service to a bookable one. Three videos were produced to advise of the service change, how it works and how to book online. In addition, 4 "Sell your stuff online" workshops had 55 attendees, and 11 shopping centre pop-up stalls for bulky waste which engaged 599 people.
- LMCC continues to promote the CRC through Hunter Joint Organisation on a regional basis.
- LMCC continues its safe battery disposal campaign "Take Charge of your Battery Waste" and was a partner in the development of a Hunter Resource Recovery campaign to encourage battery recycling at specific drop-off locations including the CRC.
- LMCC continues to collect soft plastics as well as CDs and CD covers from residents at the CRC. Some hard plastics are recovered from general and bulk waste collection.
- Waste was the theme of LMCC's annual sustainability event the Living Smart Festival in September 2023. It attracted around 20,000 people. A specific Waste Trail was designed to outline how waste is dealt with and disposed of in Lake Mac.
- There were 19 school waste workshops undertaken reaching 631 students.
- There were 6 community tours undertaken at AWMF reaching 76 residents.
- Waste services guides delivered to 87,000 households
- Vape collection commenced at the CRC.
- An A–Z household waste and recycling guide on how to dispose of common household items was developed and listed on LMCC's website
- All waste campaigns were promoted through social media platforms, printed media, the LMCC website and City-wide newsletters.
- Other presentations occurred during the year when possible, including to schools and community organisations.

#### 8.2 Complaints

#### **Community complaints**

Community complaints are managed through the 'Complaints Handling and Investigation Procedure'. The procedure manages complaints received by LMCC, including environmental performance of the AWMF and the ORRF (operated by Remondis under a separate EPL) Both LMCC and Remondis have obligations under their EPL to record, investigate and report pollution incidents and complaints.

It is generally publicly perceived that LMCC is responsible for both facilities, which accounts for the number of complaints LMCC receives regarding the ORRF.

Once an environmental complaint is received by the customer service team, an investigation is undertaken to determine the source of the complaint by the Environmental Officer to assign the complaint to the correct operator (AWMF, ORRF or other relevant department in LMCC).



During the reporting period, LMCC received 34 odour complaints, however each complaint was attributed to the ORRF following investigation.

An additional 5 community complaints were attributed to the AWMF:

- 2 regarding fees
- 2 regarding customer service
- · 1 regarding facilities for soft plastic recycling.

#### **Trends**

Odour complaint trends over the last 5 years are detailed below:

- FY19/20 121 complaints
- FY20/21 58 complaints
- FY21/22 25 complaints
- FY22/23 6 complaints
- FY23/24 34 complaints

All odour complaints were attributed to the ORRF.

Until this reporting period, odour complaints had declined each financial year. Eight complaints were received until March 2024, when there was a spike in complaints.



## 9. Independent audit

During the reporting period, there was no independent audit undertaken. The next independent audit is scheduled for October 2024, to cover the period between 14<sup>th</sup> October 2021 to 13<sup>th</sup> October 2024.

Outstanding actions from the last independent Audit are listed in Table 9-1.

Table 9-1 Outstanding non-compliances from the 2021 independent environmental audit

Condition	Non-compliance	LMCC action
Project Approval 10_0139		
Schedule 3 Condition 1	Based on the findings from this IEA and the number of non-compliances identified it is not considered that all reasonable and feasible measures to prevent and/or minimise any harm to the environment has been met by the AWMF during the audit period.	LMCC has worked through the non- compliances and has managed to achieve compliance with over half those identified in the 2021 independent environmental audit. LMCC continues to work through the remaining non-compliances.
Schedule 3 Condition 2	The Project has not been carried out in general accordance with the conditions of this approval and the statement of commitments as noted by the non-compliances identified.	As above.
Schedule 4 Condition 6	A Trade Waste Agreement was in place prior to the commencement of operations but only covered a 12-month period and expired on the 30 June 2021. The Agreement does not cover the life of the Project as was stipulated in the condition.	Hunter Water Corporation is not willing to give LMCC a trade waste agreement to span the life of the Project. HWC and LMCC have entered an interim trade waste agreement until the upgrade of the Toronto WWTP is completed (anticipated January 2025).
Schedule 4 Condition 18	Leachate generated by the Project has not been appropriately contained, collected, or disposed of throughout the audit period.  Leachate is not solely disposed of at the Hunter Water Corporation's Rathmines facility by pipeline but is also regularly disposed at the Edgeworth WWTW via truck at up to 80ML per day. It was not able to be verified if the ongoing trucking of leachate to the Edgeworth Facility is approved under PA 10_0139. The supporting EIS only references trucking during emergency situations to prevent overflow events.	LMCC has engaged a consultant to present design options to treat leachate contaminants to satisfy HWC to allow continuous pumping of leachate to remove the need for tankering.



Condition	Non-compliance	LMCC action
Schedule 4 Condition 19	Plans within the Soil, Water and Leachate Management Plan are outdated and need revision to reflect current operations and the Surface Water, Groundwater and Leachate Monitoring Program needs to be revised to include relevant EPL criteria.	The SWLMP was updated and sent to DPE Water for consultation. DPE Water has requested investigations regarding water take which is being undertaken by the consultant designing leachate treatment options.
Schedule 4 Condition 22	On the basis that no monitoring has been undertaken, there is no verifiable evidence to demonstrate that AWMF operate within relevant air quality criteria.	Air quality monitoring was undertaken by Hunter Environmental Consultants in September/October 2023. Results of this monitoring are presented in section 6.5.2.
Schedule 4 Condition 51A	A restrictive convent has not been placed on Lot 463 DP 1138964 as required.	LMCC legal team continues to liaise with DPE/DPHI to address this matter
EPBC 2011/5973		
1	No legal instrument (restrictive convent) has been placed on the biodiversity offset area (Lot 463 DP 1138964).	As above
EPL 5873		
Condition L2	LMCC should seek to engage with the EPA and DPIE with regard to the ongoing exceedances of groundwater criteria and undertake further investigations to determine the cause and develop effective mitigation measures to address.	As part of the design for cells 3 and 4, the consultant is presenting design options to reline the leachate pond, and to prevent contaminated groundwater from leaving the site.
Condition L4	It is recommended that LMCC undertake noise monitoring as required under the EPL to demonstrate compliance with noise criteria.	Following completion of the HEC Noise Monitoring Report, a request was made to the EPA during EPL 5873 review to amend noise monitoring to the following which was approved in the current EPL 5873:  L4.2 "Noise from the premises is to be measured at any point within six metres of the nearest residential residence or other noise sensitive areas in the vicinity after a complaint has been raised to determine compliance with this condition"



#### 10. Incidents

Non-compliances for the AWMF across the reporting period are identified in Section 1, as identified in the IEA undertaken in 2021. During the reporting period one incident was identified at the facility.

No penalties or infringement notices were issued to the AWMF in the reporting period.

Incidents at the AWMF for the reporting period are listed in Table 10-1.

Table 10-1 Incidents occurring during the reporting period

Incident	Date	Details	LMCC action
Fire incidents			
Small fire on tipface	30/09/2023	Small fire ignited on tipface.	Ignited waste quickly removed from tip face and placed on covered floor where it was watered and turned until the fire had been extinguished. Notified authorities per PIRMP.



### References

Umwelt (2022), *Independent Environmental Audit of Awaba Waste Management Facility*, Report prepared for Lake Macquarie City Council.

GHD (2023). Awaba Waste Management Facility Annual Review 2022-2023, Prepared for Lake Macquarie City Council



# Appendix A – Summary of water quality monitoring data FY 23/24 (prior to EPL 5873 update)

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	202	3 EPL da	ata	active Phosphate Im of WA DWER PFAS (n=10)*	uminium (Filtered)	senic (rinerea) irlum (Filtered)	ıdmium (Filtered)	iromium (Filtered)	iromium (nexavalent) (Filtered) balt (Filtered)	pper (Filtered)	on (Filtered) and (Filtered)	anganese (Filtered)	srcury (Filtered)	nc (Filtered)	irfluorooctanoic acid (PFOA) irfluorooctane sulfonic acid (PFOS)	rfluorohexane sulfonic acid (PFHxS)	ım (PFHxS + PFOS)	2 Fluorote lomer sulfonic acid (4:2 FTS) 2 Fluorote lomer sulfonic acid (6:2 FTS)	2 Fluorotelomer sulfonic acid (8:2 FTS)	:2 Fluorotelomer sulfonic acid (10:2 FTS) rfluorobutane sulfonic acid (PFBS)	rfluorobutanoic acid (PFBA)	irfluorodecane sulfonic acid (PFDS) rrfluorodecanoic acid (PFDA)	influorododecanoic acid (PFDoDA)	rfluoroheptane sulfonic acid (PFHpS) rfluoroheptanoic acid (PFHpA)	introconeptanios acid (PFHxA)	irfluorononanoic acid (PFNA)	influorooctane sulfonamide (FOSA) influoropentane sulfonic acid (PFPeS)	rfluoropentanoic acid (PFPeA)	influorotetradecanoic acid (PFTeDA) influorotridecanoic acid (PFTrDA)	irfluoroundecanoic acid (PFUnDA)	Ethyl perfluorooctane sulfonamide (EtFOSA)	Etnyl periuorooctane suironamidoacetic acid (Etr-USAA) Ethyl perfluorooctane suifonamidoethanol (EtFOSE)	Methyl perfluorooctane sulfonamide (MeFOSA)	Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA	menty perindocerate surbitained and corp.	tal Dissolved Solids	(Lab)	tal Suspended Solids C9 fraction	0-C14 fraction 5-C28 fraction	9-C36 fraction	0-C3e traction -C10 fraction	:-C10 fraction (minus BTEX)(F1)	10-C16 fraction
				e s	¥ \$	<b>₹ &amp;</b> a/L ma/L	.g	5 t	5 8	8	<u>e</u> <u>a</u>	E E	<u>e</u>	ž d	e e	- B	S.	4 8	8:2	6 <b>9</b>	- B	6 6 0 0	<b>6</b>	e e	D 0	- B	e e	<u>e</u>	e e	- B	ž z	ž ž	ż	ž 2	<u>σ</u>	Pa/L nH	E Illoite r	<u>P</u> 8	2 2	3 8	<u>8</u> ر	8 7	////
EQL				mg/kg UG/L 0.01 0.01	mg/L mg 0.01 0.0			0.001 0.	g/L mg/L 01 0.001	1 0.001	mg/L mg 0.002 0.0	01 0.0005 0	0001 0.	ig/L μ .005 0	g/∟ µg/ .01 0.0	_ μg/L 1 0.01	μg/L 0.01	µg/L µg/L 0.05 0.05	μg/L 0.05	μg/L μg/ 0.05 0.0	2 0.1	μg/L μg/L 0.02 0.02	μg/L 2 0.02	μg/L μg. 0.02 0.0	µс µg/L 02 <u>0.</u> 02	μg/L 0.02	0.02 0.02	μg/L 0.02 (	µg/L µg/L 0.05 0.02	μg/L 2 0.02	μg/L μg 0.05 0.0	yı∟ μg/ .02 0.0	μg/L 5 0.05	μg/L μg 0.02 0.	μς μg/L 05 0.01	10 (	Units r	11g/L μg/L 5 20	μg/∟ μg/ 50 10	<u>г µg/г µg</u> л0 50 5	// μg/L i0 20	20 10	μg/L 0 100
ANZG (2018) F	reshwater 95% LO	SP Toxicant DGVs	_		0.055		0.0002	0.0	001	0.0014	0.00	1.9 0.	0006 0.	800							$\blacksquare$					1				1										艹	耳	F	丰
EPL Sample R	equirement			1	1 1	1 1	1	1	1 1	1	4 1	4	1	1																						1	4	1	1 1	1	1 1	1 1	1
Samples Collection	ted	and Compled D-4- T	Time Lab Report Number	1	1 1	1 1	1	1	1 1	1	4 1	4	1	1																						1	4	1	1 1	1 1	1	1 1	1
Location Code	2023-07	12/07/2023	ES2323181	- <0.01	1		-	- 1		- 1	10.3 -	1.91	-	- <0	0.01 <0.0	0.01	<0.01	<0.05 <0.0	5 <0.05	<0.05 <0.0	2 <0.1	<0.02 <0.02	2 <0.02	<0.02 <0.	.02 <0.02	2 <0.02	<0.02 <0.0	2 <0.02 <	0.05 <0.0	2 <0.02	<0.05 <0	.02 <0.0	5 < 0.05	<0.02 <0	.05 <0.01	- (	6.09		-   -	T-T	-   -	<u> </u>	Τ-
Site 1	2023-08	16/08/2023	ES2327616				-	-		-	13 -	1.86	- 0004 -	-		-			-				-			-		-		-			-				6.14						-
<b> </b>	2023-09 2023-07	26/09/2023 12/07/2023	ES2332954 ES2323181	<0.01 <0.01 - 0.35		- 0.158	<0.0001	<0.001 <0	.01 0.026	<0.001	7.48 <0.0	001 <b>1.96</b> <0	.0001 0.	. <b>U22</b> <0	.02 <0.0	0.01	0.1	<0.05 <0.0 <0.05 <0.0	5 < 0.05	<0.05 <0.0	2 <0.1 1 <0.1	<0.02 <0.02	2 < 0.02	<0.02 <0.	.02 < 0.02	<0.02	<0.02 <0.0 <0.02 0.03	2 < 0.02 <	0.05 <0.0	2 < 0.02	<0.05 <0	1.02 <0.0	5 < 0.05	<0.02 <0 <0.02 <0	05 0.38	720	4.89	- <20	<50 <10	JU <5U <5		<20 <10	0 < 100
Site 2	2023-08	16/08/2023	ES2327616	- 0.42			-	1 - 1		-	0.624 -	0.19	-	- 0	.02 <0.0	0.11	0.11	<0.05 <0.0	5 <0.05	<0.05 0.1	2 <0.1	<0.02 <0.02	2 <0.02	<0.02 0.0	02 0.09	<0.02	<0.02 0.03	3 0.06 <	0.05 < 0.0	2 <0.02	<0.05 <0	.02 <0.0	5 <0.05	<0.02 <0	.05 0.45	-	4.95					علت	ᆂ
	2023-09	26/09/2023	ES2332954	<0.01 0.31		001 0.021	<0.0001	<0.001 <0	.01 0.009	9 <0.001	0.57 <0.0	001 0.173 <0	.0001 0	.03 0	.02 <0.0	0.1	0.1	<0.05 <0.0	5 <0.05	<0.05 0.0	< 0.1	<0.02 <0.02	2 <0.02	<0.02 <0.	.02 0.06	<0.02	<0.02 <0.0		0.05 < 0.0	2 <0.02	<0.05 <0	.02 <0.0	5 < 0.05	<0.02 <0			5.07	- <20	<50 <10	JO <50 <5	50 <20	<20 <10	00 <100
Site 3	2023-07 2023-08	12/07/2023 16/08/2023	ES2323181 ES2327616	- 0.42 - 0.4			+ -	+:+		+ - +	2.73 -	0.45	-	- 0	0.0	3 0.08	0.11	<0.05 <0.0	5 < 0.05	<0.05 0.1	5 <0.1	<0.02 <0.02	2 < 0.02	<0.02 <0.	0.07	<0.02	<0.02 <0.0		0.05 <0.0 0.05 <0.0	2 < 0.02	<0.05 <0	0.02 < 0.0	5 < 0.05	<0.02 <0	05 0.42		6.89 6.76	<del>:   -</del>	<del>                                     </del>	+++	+	+	一
One 3	2023-09	26/09/2023	ES2332954	<0.01 1.11		001 0.305	< 0.0001	0.002 <0	.01 0.001	1 <0.001	16.6 <0.0		.0001 <0	.005 0	.08 0.0	4 0.24	0.28	<0.05 <0.0	5 <0.05	<0.05 0.1	0.1	<0.02 <0.02	2 <0.02	<0.02 0.0	05 0.21	<0.02	<0.02 0.02	2 0.1 <	0.05 < 0.0	2 <0.02	<0.05 <0	0.02 <0.0	5 < 0.05	<0.02 <0			6.42	- <20	<50 <10	00 <50 <	50 <20	<20 <1/	00 <100
	2023-07	12/07/2023	ES2323181	- 0.64			-	- [			406 -	5.27	-	- 0	.03 0.0	4 0.18	0.22	<0.05 <0.0	5 < 0.05	<0.05 0.1	7 <0.1	<0.02 <0.02	2 <0.02	<0.02 0.0	0.09	<0.02	<0.02 0.03	3 0.11 <	0.05 < 0.0	2 <0.02	<0.05 <0	0.02 < 0.0	5 <0.05	<0.02 <0	.05 0.67	-	6.32			$\perp$		Œ	I
Site 4	2023-08 2023-09	16/08/2023	ES2327616 ES2332954	- 0.89 0.15 0.51			-	- 0.001 -0		1 <0.004	11.6 -	0.465	- 0001 -0	- 0	06 0.2	0.4	0.6	<0.05 <0.0	5 < 0.05	<0.05 0.2	1 <0.1	<0.02 <0.02	2 < 0.02	<0.02 <0.	.02 0.02	<0.02	<0.02 0.04	4 < 0.02 <	0.05 < 0.0	2 < 0.02	<0.05 <0	0.02 <0.0	5 < 0.05	<0.02 <0	05 0.93	793	6.44			- ·			- 100
<b></b>	2023-09	26/09/2023 12/07/2023	ES2332954 ES2323181	- 0.37		005 0.136	- <0.0001	- 0.001	- 0.001	1 <0.001	0.014 -	0.606	- 1000	.005 0 - 0	.04 0.0	0.17	0.13	<0.05 <0.0	5 < 0.05	<0.05 0.1	<0.1	<0.02 <0.02	2 < 0.02	<0.02 <0.	.02 0.06	<0.02	<0.02 0.02		0.05 < 0.0	2 < 0.02	<0.05 <0	1.02 <0.0	5 < 0.05	<0.02 <0	05 0.39		5.84	- <20	<50 <10	/U <5U <5		<20 <10	U < 100
Site 5	2023-08	16/08/2023	ES2327616	- 0.42						1 - 1	0.599 -	0.553	-	- 0	.02 <0.0	0.14	0.14	<0.05 <0.0	5 <0.05	<0.05 0.1	2 <0.1	<0.02 <0.02	2 <0.02	<0.02 0.0	02 0.08	<0.02	<0.02 0.03		0.05 < 0.0	2 <0.02	<0.05 <0	0.02 < 0.0	5 <0.05	<0.02 <0	.05 0.45		5.85	<u> </u>			#		ᆂ-
	2023-09	26/09/2023	ES2332954	<0.01 0.29	<0.01 <0.0	001 0.013	< 0.0001	<0.001 <0	.01 0.001	1 <0.001	0.218 <0.0	0.609 <0	.0001 <b>0</b> .	<b>019</b> 0	.02 <0.0	0.11	0.11	<0.05 <0.0	5 <0.05	<0.05 0.0	7 <0.1	<0.02 <0.02	2 <0.02	<0.02 <0.	.02 0.06	<0.02	<0.02 0.03	3 0.03 <	0.05 < 0.0	2 <0.02	<0.05 <0	1.02 <0.0	5 < 0.05	<0.02 <0	.05 0.32	3570	5.77	- <20	<50 <10	JO <50 <	50 <20	<20 <10	0 <100
EPL Sample Re Samples Collect	equirement ted			1 1	1 1	1 1	1 1	1 1	1 1	1 1	4 1	4	1	1			Щ				Щ							4								1	4	4 1	1 1	111	11	1 1	11
Gampies Collec	2023-07	12/07/2023	ES2323181	1 - 1 -	1 - 1 -					- 1	0.098 -	0.028	- 1	- 1	-   -	1 -	- 1	-   -	1 - 1	I - I -	1 - 1	-   -	1 - 1	- 1 -	- 1 -	1 - 1	-   -	1 - 1	-   -	1 - 1	- 1	-   -	1 - 1	- 1	.   .	- 1	7.44	16 -		<del></del>			7
Site 6	2023-08	16/08/2023	ES2327616				-	-			0.173 -	0.0021	-			-	-		_		1-1					- 1		1 - 1		-				-		- 1	7.58	14 -					工
	2023-09	26/09/2023	ES2332954	<0.01 0.2	0.02 <0.0	001 0.058	< 0.0001	<0.001 <0	.01 <0.00	1 0.002	0.161 <0.0	001 0.0119 <0	.0001 <0	.005 0	.04 0.0	2 0.04	0.06	<0.05 <0.0	5 <0.05	<0.05 0.0	2 <0.1	<0.02 <0.02	2 <0.02	<0.02 <0.	.02 0.04	<0.02	<0.02 <0.0	2 0.04 <	0.05 < 0.0	2 <0.02	<0.05 <0	0.02 < 0.0	5 < 0.05	<0.02 <0	.05 0.2	281	7.78	12 <20	<50 <10	)0 <50 <5	50 <20	<20 <10	.0 <100
Site 7	2023-07 2023-08	12/07/2023 16/08/2023	ES2323181 ES2327616		+ : + :	-   -	+ :-	+:+		1 - 1	0.064 -	0.116	-	<del>:  </del>	-   -	+:	<del>                                     </del>		1:	<del>                                     </del>	+ -		+ : +			+ - +		+ - +	-   -	+ - +		-   -	+ : +	-	<del>:   :-</del>		7.42 7.39	20 -	<del>                                     </del>	<del>.   ;  </del> ;	$\pm \pm \pm$	بلن	一
Site /	2023-09	26/09/2023	ES2332954	<0.01 0.44	<0.01 0.0	001 0.072	<0.0001	<0.001 <0	.01 <0.00	1 <0.001	0.124 <0.0	0.086 <0	.0001 <0	.005 0	.07 0.0	2 0.05	0.07	<0.05 <0.0	5 <0.05	<0.05 0.1	1 <0.1	<0.02 <0.02	2 <0.02	<0.02 0.0	03 0.09	<0.02	<0.02 <0.0	2 0.07 <	0.05 <0.0	2 <0.02	<0.05 <0	.02 <0.0	5 <0.05	<0.02 <0	.05 0.44	326	7.58	17 <20	<50 <10	JO <50 <	50 <20	<20 <10	00 <100
	2023-07	12/07/2023	ES2323181	- 0.69			-			-	0.449 -	0.318	- '	- 0	.08 0.0	4 0.18	0.22	<0.05 <0.0	5 <0.05	<0.05 0.1	1 <0.1	<0.02 <0.02	2 <0.02	<0.02 0.0	04 0.14	<0.02	<0.02 0.02	2 0.1 <	0.05 <0.0	2 <0.02	<0.05 <0	.02 <0.0	5 <0.05	<0.02 <0	.05 0.71	- (	6.38	36 -					Ξ
Site 8	2023-08	16/08/2023	ES2327616	- 0.54			-	-		-	4.77 -	0.117	-	- 0	.06 0.0	3 0.14	0.17	<0.05 <0.0	5 <0.05	<0.05 0.1	1 <0.1	<0.02 <0.02	2 <0.02	<0.02 0.0	03 0.11	<0.02	<0.02 0.02	2 0.06 <	0.05 < 0.0	2 <0.02	<0.05 <0	.02 <0.0	5 < 0.05	<0.02 <0	.05 0.56	- (	6.61	20 -					-
Site 9	2023-09 2023-09	26/09/2023 28/09/2023	ES2332954 ES2332954	<0.01 0.51 <0.01 <0.01		001 0.133	< 0.0001	<0.001 <0	.01 <0.00	2 <0.001	0.134 < 0.0		0001 <0	0.005 0	.07 <0.0	0.14	<0.14	<0.05 <0.0	5 <0.05	<0.05 <0.0	2 <0.1	<0.02 <0.02	2 <0.02	<0.02 0.0	0.12	2 <0.02	<0.02 <0.0	2 0.06 <	0.05 < 0.0	2 <0.02	<0.05 <0	1.02 <0.0	5 <0.05	<0.02 <0 <0.02 <0	05 <0.01	794 (	5.34	474 <20	<50 <50	JU <50 <5		<20 <10 <20 <10	
	equirement	20/08/2023	E02002904	~0.01 ~0.01	0.11 <0.1	001 0.072	. ~0.0001	~0.001 <0	.01 0.002	2 \0.001	4	4	.0001 0.	U13 <	.01 <0.0	VI \0.01	~U.UI *	·0.05 \0.0	J \0.05	~U.UU <u.u< td=""><td>∠ \0.1</td><td>~0.02 ~0.02</td><td>2 \0.02</td><td>~U.UZ <b>~</b>U.</td><td>.02 \0.02</td><td>2 \0.02</td><td>~0.02 \0.0</td><td>2 \0.02 &lt;</td><td>.0.00 &lt;0.0</td><td>2 \0.02</td><td>~0.00 &lt;0</td><td>.02 \0.0</td><td>U.U5</td><td>~0.02 &lt;0</td><td>.00 \0.01</td><td>200</td><td>4</td><td>4 4</td><td>4 4</td><td>4</td><td></td><td>4 4</td><td></td></u.u<>	∠ \0.1	~0.02 ~0.02	2 \0.02	~U.UZ <b>~</b> U.	.02 \0.02	2 \0.02	~0.02 \0.0	2 \0.02 <	.0.00 <0.0	2 \0.02	~0.00 <0	.02 \0.0	U.U5	~0.02 <0	.00 \0.01	200	4	4 4	4 4	4		4 4	
Samples Collec	ted									#	#REF!	#REF!																								#	REF! #	REF! ###	#### ###	## ### ##	## ###	### ##	# ####
07. 10	2023-07	12/07/2023	ES2323181	- 14.8			-	-		<b>↓</b> - Ţ	1.13 -	0.132	-	- 2	.25 1.8	2.00	1.70	0.00	0.1	0.07 3.9		<0.05 0.05				0.14		2 0.7 <							.12 16.3				350 121		990 30		
Site 10	2023-08	16/08/2023 26/09/2023	ES2327616 ES2332954	- 6.55 - 7.32	0.23 0.0	74 0 546	-	+ : +		+ - +	8.05 -	0.609	- 0	- 0	.61 0.3		1.69			< 0.05 2.3		<0.05 <0.05 <0.02 <0.02			.2 1.2				0.12 < 0.0			0.05 < 0.1			.12 6.71				300 74		040 <20		

				Hydro	ocarbons	ı		Major I	ons		-	Nutrient	. 1			Monocy	clic Aromatic	Hydrocarb	nns		- 1			Polynucie	ar Aromati	c Hydrocar	hons			1		Pher	olic Comp	nunds			Fun	migants
	20	023 EPL da	ıta	C16-C34 fraction	234-C40 fraction C10-C40 fraction (sum)	hloride alcium (Filtered)	uoride aanesium (Filtered)	agrissium (Filtereu) otassium (Filtered)	odum (ritered) otal Anions	otal Cations Lifate (as SO4-) (Filtered)	nic Balance mmonia (se N)	irate (as N)	ate as N	aphthalene (used F2 calc) Brizene	Juene ithylberzene	op-sylene Xylene Tal Xylenes	yrene opropylbenzene	butylbenzene propylbenzene	isopropytoliuene c-butylbenzene rt-butylbenzene	2,4-trimethylbenzene	otal BTEX PROGlovrene TEO calc (Zero)	aphthalene cenaphthylene	cenaphthene nthracene	uorene henanthrene 	oranthene enz(a)anthracene	enzotk/jruoranthene enzotb&jjfluoranthene	erkkjallyjene hrysene	enzo(g,h,)perylene benz(a,h)anthracene	deno(12,3-cd)pyrene um of PAHs	4-Methylphenol (m/p-cresol) henol	Chlorophenol (Metry phenol (o-Cresol)	Nitrophenol 4-Dichlorrophenol	4-Dimethylphenol	Chloro-3-methylphenol	4,6-Trichlorophenol	um of Phenois	2-Dibromoethane (EDB) 2-Dichloropropane	2-Dichloropropane s-1,3-Dichloropropene
				ua/L	ua/L ua/L	し ma/L ma/	L ma/L ma	a/L ma/L mo	a/L mea/L	ല് ത് mea/L ma		/L mg/L mg	/L ma/L	ua/Lua/Li	ia/Lua/Lua	/L ua/L ua	/L ua/L ua/L	ıa/L µa/L ı	ia/L µa/L µa	L ua/L ua/	L ua/L ua	L ua/L ua/L	L ua/L ua/L	ua/Lua/Lu	z/Lug/Lug	a/Lua/Lua	a/Lua/Lua	/Lua/Lua/	L ua/L ua/l	က် 🚡 ua/L ua/L	ua/L ua/	L ua/L ua	L ua/L ua	L na/F n	a/L ua/L uc	/L ug/L u	ua/L ua/L u	ua/L ua/L
EQL						) 1 1	0.1 1	1 1	1 0.01	0.01 1	0.01 0.0	1 0.01 0.0	0.01	· .	2 2	2 2 2	5 5	5 5	5 5 5	5 5	1 0.	5 1 1	1 1	1 1	1 1	1 1 0	.5 1 1	1 1	1 0.5	2 1	1 1	1 1	1 1		1 1 2			
ANZG (2018) F	reshwater 95°	% LOSP Toxicant DGVs		_	<del>                                     </del>	<b>↓</b>	+ +				0.	9 2.4		950	180 80	350	30			+ +	<b></b>	16	0.4	2 1	.4	0	.2	+	+ +	320	490	16	0	2	20 10	0	900	-
EPL Sample R	equirement			1	1 1	4 4	4 4	4 4 4	4	4	. 4	4		1	1 1						1	1 1	1 1	1 1	1 1	1 1	1 1 1	1 1	1 1							4		
Samples Collect	ted Monitoring	Round Sampled Date T	ime Lah Report Numb	1	1 1	4 4	4 4	4 4 4	4	4	4	4		1	1 1						1	1 1	1 1	1 1	1 1	1 1	1 1 1	1 1	1 1							3		
Location Code	2023-07	12/07/2023	ES2323181			350 15	0.4 39	9 10 15	50 12.4	10.7 30	7.08 0.2	2 <0.01 -	-	-   -		-   -   -	1-1-	-   -			T - T -		T - T - T		-   -		-   -   -							1 - 1		- <50		-   -
Site 1	2023-08	16/08/2023	ES2327616	-		352 16	0.3 43	3 10 16	66 12.6	11.8 28	3.42 0.0	8 <0.01 -	-					-   -							-   -		-   -   -							-		- <50		
	2023-09	26/09/2023	ES2332954		<100 <100		0.3 42		68 12.5	11.8 32	2 2.96 0.0	3 <0.01 -		<5 <1	<2 <2 <	2 <2 <2	2 <5 <5	<5 <5	<5 <5 <	5 <5 <5	s <1 <0	.5 <1 <1	<1 <1	<1 <1 <	:1 <1 <	<1 <1 <	).5 <1 <	1 <1 <1	<1 <0.5	5				-		- <50	<5 <5	<5 <5
Cito 2	2023-07	12/07/2023	ES2323181			568 3	0.8 24	24 6 34	49 19.8	17.4 17	4 6.3 0.3	6 0.06 -	-				<del>  -   - '</del>			<del>  -   -</del>					-   -		<del>-   -   -</del>									- <50		
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-	2023-03	12/07/2023	ES2323181	- 100		0 00 1 0	0.4 29	.0 0 00	38 10.2	9.68 10	0 0.93 0.1	5 0.02 -	-									.5 1 1									1 2 2	1 2 2	1 : 1 :	+ -		- <50		
Site 3	2023-08	16/08/2023	ES2327616			122 56	0.4 28	28 24 8	34 10.1	9.37 13	3 3.8 7.8	4 <0.01 -	-				'	-   -							-   -		-   -   -							-		- <50		
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	2023-07	12/07/2023	ES2323181	-		110 00	0.2 34	, , ,,	76 15.9	13.8 9		<b>5</b> 0.05 -	-				<u> </u>																	-		- <50		
Site 4	2023-08 2023-09	16/08/2023	ES2327616	- 100			0.3 20		7.75	8.55 22	2 4.87 <b>1.6</b>	7 <0.1 -	-	 -E -1			2 <5 <5					 1 -4	 <1 <1					1 21 24	<1 <0.5	1 -   -				+-+	++	<50	 -E -E	
$\vdash$	2023-09	26/09/2023 12/07/2023	ES2332954 ES2323181	<100	<100 <100	0 211 00	0.2 22	12 12 1	12.1	1U.1 9	7 32 04	5 0.05	+ + + +	<0 <1	<2 <2 <	2 <2 <2	_ <5 <5	<5 <5	<5 <5 <	5 <5 <5	<1 <0	.5 <1 <1	<1 <1	<1 <1 4	-	<1 <1 <	).5 <1 <	1 <1 <1	<1 <0.5		+ - + -	+ - + -	+ - + -	+ - +	<del>+++</del>	<50 <50	<5 <5	<5 <5
Site 5	2023-08	16/08/2023	ES2327616	<del>-   -</del>			0.7 10	12 18 11	100 57.1	58.7 26	0 1.41 0.4	7 0.01	+ - +		<del>:   :  </del>	<del>                                     </del>	<del>                                     </del>	<del>-   -  </del>	<del>-   -   -</del>	<del>                                     </del>	<del>                                     </del>	<del>                                     </del>	<del>                                     </del>	<del>-   -  </del>	<del>:   :  </del>	<del>:   :  </del>	<del>.   .   .</del>	<del>                                     </del>	+ - +	<del>         </del>	- <50		<del></del>					
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	equirement			1	1 1	4 4	4 4	4 4 4	4	4	4	4		1	1 1						1	1 1	1 1	1 1	1 1	1 1	1 1 1	1 1	1 1							4		
Samples Collec		Lierenie		1	1 1	4 4	4 4	4 4 4	4	4	4	4		1	1 1						1	1 1	1 1	1 1	1 1	1 1	1 1 1	1 1	1 1							3		
Site C	2023-07	12/07/2023 16/08/2023	ES2323181 ES2327616	-		51 18	0.2 10	0 17 3	3.66	3.63 34	1 0.41 0.3	2 0.18 -	-	-   -		<del>-   -   -</del>	<del>  -   -</del> '	-   -	-   -   -		+ -   -	1 - 1 -	- -	-   -	-   -	-   -	-   -   -	<del>  -   -</del>					1 - 1 -	+ -	-+	- <50	-   -	
Site 6	2023-08 2023-09	26/09/2023	ES2327616 ES2332954	- <100	 0 <100 <100	0 47 17	0.2 10	0 15 3	36 3.71	3.65 35	1 1.24 0.0	0.05 -	+ - 1	 <5 <1	<2 <2 <	2 <2 -	2 <5 <5					5 <1 <1	 <1 <b>&lt;1</b>		1 21 2	1 21 2	0.5 <1 <	1 <1 <1	<1 <0 !	+ + + +	1:1:	+ - + -	+ - + -	+:+	<del>1 1 1 -</del>	- <50 - <50	 <5 <5	
$\vdash$	2023-03	12/07/2023	ES2323181				0.2 10		5 5.86	5.59 35	2.32 0.4	1 0.49	+ - +							, 3 3			31 81							<del>1 :   :</del>	<del>                                     </del>	+ - + -	+:+:	+ - +	<del>+++</del>	- <50		
Site 7	2023-07 2023-08	16/08/2023	ES2327616				0.3 13		53 5.66	5.48 31	1 1.6 0.2	8 0.67 -	- 1	-   -		-   -   -	<del>                                     </del>		-   -   -	1 - 1 -	1 - 1 -	1 - 1 -	1 - 1 - 1		-   -		-   -   -			1 - 1 -	-   <del>-</del>			1 - 1	<del>-   -   -</del>	- <50	-   -	
	2023-09	26/09/2023	ES2332954				0.3 12		53 5.24	5.4 30	1.47 0.3	6 0.15 -	- 1	<5 <1	<2 <2 <	2 <2 <2	2 <5 <5	<5 <5	<5 <5 <	5 <5 <5	<1 <0	.5 <1 <1	<1 <b>&lt;1</b>	<1 <1 •	1 <1 <	1 <1 <	).5 <1 <	1 <1 <1	<1 <0.5					1 - 1		- <50	<5 <5	<5 <5
	2023-07	12/07/2023	ES2323181	-		393 15	<0.1 3	31 24 18	80 14	11.7 4	8.79 <b>4.8</b>	5 0.06 -		- [ - ]	-   -	- [ - [	T - L - '	- [ - ]	-   -   -	1-1-				-   -	-   -	-   -	- [ - ] -		I - L -	<u> </u>	L - L -			1 -		- <50	- [ -	
Site 8	2023-08	16/08/2023	ES2327616	-			0.1 24		22 9.2	8.72 18		8 0.23 -	-																					-		- <50		
	2023-09	26/09/2023	ES2332954		<100 <100		<0.1 35		98 14.2	13.2 3		6 <0.01 -			<2 <2 <		2 <5 <5				<1 <0	.5 <1 <1	<1 <b>&lt;1</b>					1 <1 <1		5				1-			<5 <5	
Site 9	2023-09	28/09/2023	ES2332954		<100 790		0.2 10		0 3.55	3.45 22		2 0.63 -	-	<5 <1	<2 <2 <	2 <2 <2	2 <5 <5	<5 <5	<5 <5 <	<5 <5	<1 <0	.5 <1 <1	<1 <b>&lt;1</b>	<1 <1 •	1 <1 <	<1 <1 <	).5 <1 <	1 <1 <1	<1 <0.5		-   -	-   -	1 - 1 -	1 -			<5 <5	<5 <5
EPL Sample R	equirement			4	4 4	4 4	4 4	4 4 4	4	4	4 4	4																							بليك	4		
Samples Collec	2022 07	12/07/2023	ES2323181	1270	270 2090	0 1050 70	# #### ###	1 500 40	200 140	125 -4	0 2 96 05	## ##### 5 <0.1 -		<5 <1	-2 -2	2 -2 -1	1				-1	1 1							1 1				T - T -			· <1000	-   -	
	2023-07	16/08/2023	ES2323181 ES2327616				<10 6		200 146	135 <1					<2 <2 <		2	-   -	-   -   -	+-+-	<u> </u>	+-+-	1 - 1 -	-   -	-   -		-   -   -	<del></del>	+ - + -				+ - + -					
Site 10	2023-08	26/09/2023	ES2332954		<100 1040 <100 1240		0.5 63	3 587 14	140 163	170 <10		9 <0.1 - 30 <0.5 -			<2 <2 <		2			1:1:	<1 -	+:+-	1:1:1				<del>:   :   :</del>		+ : + :	1 1 1		+ - + -	+ : + :	-		· <50 · <50		

			Halogenated Aromatic Compounds	1	Halogenated Aliphatic Compounds	Trihalomethanes Chemical Par Bulk Organics	Alkalinity Dehablerinated Rinbanyl	kygenated Compound Sulfonated Compounds
			Haiogenated Aromatic Compounds	<del>                                     </del>	Transgenated Ampriatic Compounds	Titialonietilaries Ponemical Pai Bulk Organics	Alkalility Polycillorillated Diplientyls	kygenated compount Sunonated compounds
	202	23 EPL data					_	
	202	o Li L data					ő   m	
						일	8   8	
						g   g   u   u   g   u   u   u   u   u	3   3g   8	
							s   S   O	\( \frac{\xi}{2} \)
					[ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [	호   호   호   · 호   호   · 호   · 호   · 호   · 호   · 호		
				월   윤       1 등   윤   1 등	=   축   용   퍋   등   둦   ㄹ   ㅣ 。   퍋   ㅌ   ᅟ =   ざ   걍   몫   호   형   ㄹ		=   ₹   %   ∺	
			p   e   e   s   z   z   g   g		과   과   당   다   다   다   다   다   다   다   다   다	ge   H   G   H   H   H   H   H   H   H   H	g   a   a   E	발   호   토   명   발   호   발   발
			5   6   6   6   6   6   6   8   8		et   cc   cc   cc   cc   cc   cc   cc		조   꽃   훈   활	a   S   S   b   E   t   t   t   d   u   t
1			[주 [ 호   호   첫   5   8   보   표	[   풀   울   충   슐   울   울   토   월	S   E   E   E   E   E   E   E   E   E	ğ   호   콩   ㅌ   ㅌ   충   ㅌ   잘     으	ii e   at	for   for
			[한 [ 육   육   한   한   휴   휴   휴   윤   원	2   2   3   4   4   5   5   4   5   5   5   5   5	:   宀   宀   ㄹ   ㅌ   ㅌ   ㅌ   ㅌ   ㅌ   ㅌ   ㅌ   ㅌ   ㅌ	호   우   호   호   호   호   · 호   - 호		S   E   E   E   E   E   E   E   E   E
1			꽃   읕   응   욛   용   음   음   듯   둧	.   은   은   은   은   은   은   현   현	다		면   5   <del>로</del>   원	[ 문   탁   호   토   호   호   호   호   호   호   호   호
1			E   S   \( \frac{1}{2} \)   \( \frac{1}{2} \	[[호 축 호 축 등[국 용]	[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]		9   og	[편   편   편   편   편   편   편   편   편   편
			E W O V 4	- O O > M O F - O -	<u>-                                    </u>	<del>-</del>	<u> </u>	
FOL			ha/r ha/r ha/r ha/r ha/r ha/r ha/r ha/r	/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg	// ha/r ha/r ha/r ha/r ha/r ha/r ha/r ha		mg/L mg/L μg/L μg/L	µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L
EQL			5 5 5 5 5 5 5 5 5	50 50 50 50 50 50 50 5 5	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	5 5 5 5 5 5 1 1 2	1 1 1 1 1	50 50 50 50 5 5 0.5 0.5 0.5 0.5 0.5
ANZG (2018) I	reshwater 95% LO	OSP Toxicant DGVs	55 160 260 60 10 17	70 100 700	270 240 1900 330 6500 1100 70 400 80	770		0.02 0.01
EDI. Camala D								
Samples College	equirement		1 1 1 1 1 1 1 1 1 1 1 1 1		<u>                                     </u>	1 1 1 1 1 1 1 1	4 4 4 1 1	<u>                                     </u>
		ound Sampled Date Time Lab Report I	umb or			1 1 4 4 1	4 4 4 1	
Location Cou	2023-07	12/07/2023 ES2323181			-   -   -   -   -   -   -   -   -   -	-   -   -   -   4   1200   -	94 <1 94 -	
Site 1	2023-08	16/08/2023 ES2327616	<del>-   .   .   .   .   .   .   .   .   .   </del>	<del>.   .   .   .   .   .   .   .   .   .  </del>	<del>.   .   .   .   .   .   .   .   .   .  </del>		107 <1 107 -	
0.10	2023-09	26/09/2023 ES2332954	<5 <5 <5 <5 <5 <5 <5 <5 <5 <5	5 <50 <50 <50 <50 <50 <50 <50 <5	5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5		86 <1 86 <1	<50 <50 <50 <50 <50 <5 <0.5 <0.5 <0.5 <0
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Site 2	2023-08	16/08/2023 ES2327616	<del>-   .   .   .   .   .   .   .   .   .   </del>	<del>.   .   .   .   .   .   .   .   .   .  </del>	<del>.   .   .   .   .   .   .   .   .   .  </del>		5 <1 5 -	
	2023-09	26/09/2023 ES2332954	<5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5	5 <50 <50 <50 <50 <50 <50 <50 <5	5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5		11 <1 11 <1	<50 <50 <50 <50 <50 <5 <0.5 <0.5 <0.5 <0
	2023-07	12/07/2023 ES2323181		0 00 00 00 00 00 00			384 <1 384 -	
Site 3	2023-08	16/08/2023 ES2327616					320 <1 320 -	
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	2023-07	12/07/2023 ES2323181		0 00 00 00 00 00 00			204 <1 204 -	
Site 4	2023-08	16/08/2023 ES2327616			.   .   .   .   .   .   .   .   .   .		255 <1 255 -	
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	2023-07	12/07/2023 ES2323181					126 <1 126 -	
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EPL Sample R	equirement		1 1 1 1 1 1 1 1 1			1 1 4 4 1	4 4 4 1	1 1 1 1 1
Samples Collection	cted		1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1		1 1 4 4 1	4 4 4 1	1 1 1 1 1
	2023-07	12/07/2023 ES2323181		.   .   .   .   .   .   .   .   .			76 <1 76 -	
Site 6	2023-08	16/08/2023 ES2327616		.   .   .   .   .   .   .   .   .   .			73 <1 73 -	
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	2023-07	12/07/2023 ES2323181					141 <1 141 -	
Site 7	2023-08	16/08/2023 ES2327616		.   .   .   .   .   .   .   .   .   .	.   .   .   .   .   .   .   .   .   .		138 <1 138 -	
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	2023-07	12/07/2023 ES2323181	<del>-                                      </del>	0 00 00 00 00 00 00 0			142 <1 142 -	
Site 8		16/08/2023 ES2327616	<del>-   .   .   .   .   .   .   .   .   .   </del>	<del>.   .   .   .   .   .   .   .   .   .  </del>	<del>.   .   .   .   .   .   .   .   .   .  </del>		117 <1 117 -	
	2023-08			5 250 250 250 250 250 25 25	5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5		146 <1 146 <1	<50 <50 <50 <50 <50 <5 <0.5 <0.5 <0.5 <0
Site 6	2023-08 2023-09		< 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5   < 5					
Site 9	2023-08 2023-09 2023-09	26/09/2023 ES2332954 28/09/2023 ES2332954	<5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <		5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5	<5   <5   <5   <5   <5   <5   30   421   11	5 <1 5 <1	<50 <50 <50 <50 <50 <50 <5 <0.5 <0.5 <0.
Site 9	2023-09 2023-09	26/09/2023 ES2332954						<50 <50 <50 <50 <50 <5 <0.5 <0.5 <0.5 <0
Site 9	2023-09 2023-09 equirement	26/09/2023 ES2332954				4 4	4 4 4	<50   <50   <50   <50   <5     <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5
Site 9 EPL Sample R	2023-09 2023-09 equirement	26/09/2023 ES2332954 28/09/2023 ES2332954				#### #REF! #	4 4 4	<50
Site 9 EPL Sample R Samples Collect	2023-09 2023-09 equirement cted 2023-07	26/09/2023 ES2332954 28/09/2023 ES2332954 12/07/2023 ES2332181				1950 - 156 4	4 4 4	<50
Site 9 EPL Sample R	2023-09 2023-09 equirement	26/09/2023 ES2332954 28/09/2023 ES2332954		5 <50 <50 <50 <50 <50 <50 <50 <50 <50 <5	5 < 5 < 5 < 5 < 5 < 5 < 5 < 5 < 5 < 5 <	### #REF1 # 1950 - 156 4 313 - 36 3	4 4 4 4 ##### #### 4 4530 <1 4530 -	<50   <50   <50   <50   <50   <50   <5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <0.5   <

				bnor t	oont-	orus Pes	stinide -	(OB)														0	nochlorir	na Da-4	lioidos "	00)									Tı	organics
				апорп	iospilo	nus res	suciues	(JF)		$\neg$			-t		1							Organ	IOCIIIOFII	ne rest	iciues (	J 1						1			100	organics
	202	3 EPL dat	ta	zinon		imethoate	phos		alathion	rathion	rathion-methyl	irimphos-ethyl	othiofos	irin	Irin + Dieldrin	внс	внс	внс	-BHC (Lindane)		ns-Chlordane	dane			07+00E+000	sulfan 1	dosulfan 2	dosulfan sulfate	drin	ndrin aldehyde	ndrin ketone	ptachlor	oxide	xachlorobenzene (HCB)	thoxychlor	rbonate Alkalinity (as CaCO3)
				Diazi	ichl	ime thio	ena	ent	Malat Mong	arat	arat	iri	rot	Mdrin	Mdrin	Ŧ	H-	표	垂	Sis	rans			ΤQ	ŤQ.	opu:	opu:	e l	indri	in dri	in dri	de pt	le pt	lexa	Veth	Sarbo
				μg/L	µg/L ı	μg/L μg/	/L µg/L	μg/L μ	<u>e</u> e	/L µg	/L µg/L		μg/L μ	μg/L μg	_		μg/L	μg/L	µg/L	μg/L μ	ıg/L μ	g/L µg		μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L μ	ıg/L	μg/L μ	ıg/L μ	<u>μg/L</u> μg	ıg/L	mg/L
QL				0.5	0.5	0.5 0.		0.5	0.5 2	2 2	2			0.01 0.			0.01	0.01	0.01	0.01	0.01 0	.01 0.0		1 0.01	0.01			0.01	0.01		0.01 (	0.005	0.01	0.01 0.		1
NZG (2018) Fr	eshwater 95% LO	SP Toxicant DGVs		0.01		0.15		0	.05	0.0	04	$\Box$		_	_	1			0.2		0	.08	_	0.01	1				0.02		_	0.09	_	0.1		
PL Sample Re	auirement			1	1	1 1	1	1	1 1	1	1	1	1	4 4	4	4	4	4	4	4	4	4 4	. 4	4	4	4	4	4	4	4	4	4	4	4	4	4
amples Collecte	ed			1	1	1 1	1	1	1 1	1	1	1	1	4 4	4	4	4	4	4	4	4	4 4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
cation Code			ne Lab Report Number	r										-0 E   -0	- L - C -	- 1 -0 -	1.05	-0.5		40 F I	-0 F I		5 L 40 5	- 1	1 -0 -	-0.5	40 F	-0 F T	-0 = 1	-0.F.I	-0 F I		-0 F		-0	-4
Site 1	2023-07	12/07/2023 16/08/2023	ES2323181 ES2327616	1:1	-		-	-	-   -	+	-	1 -		<0.5 <0 <0.5 <0								0.5 <0 0.5 <0			<0.5	<0.5 <0.5	<0.5 <0.5							***	<2 <2	<1 <1
OILU I	2023-08	26/09/2023	ES2332954	<0.5	<0.5	<0.5 <0	.5 <0.5	<0.5	0.5 <	2 <	2 <2	<0.5		<0.01 <0								0.5 <0.				<0.01						0.005 <		0.01 <0		<1
	2023-07	12/07/2023	ES2323181		-			-	- 1	<u> </u>	±÷	-		<0.5 <0	.5 <0.5	<0.5	<0.5	<0.5	<0.5	<0.5 <	<0.5 <	0.5 <0	.5 <0.5	5 <b>&lt;2</b>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5 <	:0.5	<0.5 <	<0.5	<0.5	<2	<1
Site 2	2023-08	16/08/2023	ES2327616	-	-		-	-			-	-	- 1	<0.5 <0	.5 <0.5	<0.5			<0.5	<0.5 <	<0.5 <	0.5 <0			<0.5	<0.5	<0.5			<0.5 <		<0.5 <			<2	<1
	2023-09	26/09/2023	ES2332954	<0.5	<0.5	<b>&lt;0.5 &lt;</b> 0	.5 <0.5	<0.5	<0.5	2 <	2 <2	<0.5	<0.5	(0.01 < 0	01 < 0.0	1 < 0.0	1 <0.01	<0.01	<0.01	<0.01 <	0.01 <0	0.01 <0.	0.0		1 < 0.01	<0.01	<0.01			<0.01 <0		0.005 <		0.01 <0	0.01	<1
Site 3	2023-07	12/07/2023 16/08/2023	ES2323181 ES2327616	+ : +			+-			+	+-	-		<0.5 <0					<0.5 <0.5			0.5 <0 0.5 <0			<0.5 <0.5	<0.5 <0.5	<0.5 <0.5							***	<2 <2	<1 <1
OILE J	2023-08	26/09/2023	ES2327616 ES2332954	<0.5	<0.5	<0.5 <0	5 <0.5	<0.5	0.5 <	2 <	2 <2	_		<0.01 <0								0.5 <0.				<0.01	<0.01								0.01	<1
	2023-07	12/07/2023	ES2323181		-		-	-		.   -		-		<0.5 <0								0.5 <0			<0.5	<0.5	<0.5							0.01	<2	<1
Site 4	2023-08	16/08/2023	ES2327616		-		-	-	-   -			_	•	<0.5 <0	.5 <0.5	<0.5	<0.5	<0.5	<0.5	<0.5 <	<0.5 <	0.5 <0	.5 <0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5 <	:0.5	<0.5 <	<0.5	<0.5 <	<2	<1
	2023-09	26/09/2023	ES2332954	<0.5	<0.5	<b>&lt;0.5 &lt;</b> 0	.5 <0.5	<0.5	0.5	2 <	2 <2	<0.5		<0.01 <0						<0.01 <			01 < 0.0				<0.01			<0.01 <0			0.01 <		0.01	<1
0:4 5	2023-07	12/07/2023	ES2323181		-			-	-   -	+-	-	-		<0.5 <0								0.5 <0				<0.5	<0.5							<0.5 <	<2	<1
Site 5	2023-08	16/08/2023	ES2327616											<0.5 <0							<0.5 <	0.5 <0			< 0.5	< 0.5	< 0.5					<0.5 <	<0.5	<0.5 <	<2	<1
DI Comple De	2023-09	26/09/2023	ES2332954	<0.5	<0.5	<0.5 <0	.5 <0.5	<0.5	U.5 <	<u> ۲</u>	2 <2	<0.5	<0.5	<0.01 <0	01 < 0.0	1 .0.0	1 <0.01	<0.01	<0.01	<0.01 <	0.01 <	0.01 <0.	01 < 0.0	1 <0.01	1 <0.01	<0.01	<0.01	<0.01	<0.01	<0.01 <0	0.01 <	0.005 <	0.01 <	U.U1 <0	0.01	<1
PL Sample Re amples Collecte				1	1	1 1	1	1	1 1	1	1	1	1	4 4	4	4	4	4	4	4	4	4 4	4	4	4	4	4	4	4	4	4	4	4	4 4	4	4
piec Concett	2023-07	12/07/2023	ES2323181	T - T	- 1		1 -	- 1		-	-	- 1	- 1	<0.5 <0	.5 <0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5 <	0.5 <0	.5 <0.5	5 <2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<2	<1
Site 6	2023-08	16/08/2023	ES2327616	T - 1	- 1			-			-	-		<0.5 <0								0.5 <0			<0.5	<0.5	<0.5								<2	<1
	2023-09	26/09/2023	ES2332954	<0.5	<0.5	<0.5 <0	.5 <0.5	<0.5 <	0.5 <	2 <	2 <2	<0.5		<0.01 <0								0.01 <0.												0.01 <0		<1
	2023-07	12/07/2023	ES2323181	-	-	-   -		-	-   -			-	- 1	<0.5 <0	.5 <0.5	<0.5	<0.5			<0.5 <	<0.5 <	0.5 <0	.5 <0.5	5 <b>&lt;2</b>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5 <	:0.5	<0.5 <	<0.5 <	<0.5	<2	<1
Site 7	2023-08	16/08/2023	ES2327616	-	-	-   -		-	-   -			-	- 1	<0.5 <0	.5 <0.5	<0.5	<0.5	<0.5	<0.5	<0.5 <	<0.5 <	0.5 <0	.5 <0.5	5 <b>&lt;2</b>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5 <			<0.5 <	<0.5	<2	<1
	2023-09	26/09/2023	ES2332954	<0.5	<0.5	<0.5 <0	.5 <0.5	<0.5	0.5 <	2 <	2 <2	<0.5	< 0.5	<0.01 <0	0.0	1 <0.01				<0.01 <			0.0			<0.01	<0.01						0.01 <	0.01 <0	0.01	<1
	2023-07	12/07/2023	ES2323181	-	-	-   -		-	-   -			-	- 1	<0.5 <0	.5 <0.5	<0.5	<0.5	<0.5	<0.5	<0.5 <	<0.5 <	0.5 <0	.5 <0.5	5 <b>&lt;2</b>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5 <	:0.5	<0.5 <	<0.5 <	<0.5	<2	<1
Site 8	2023-08	16/08/2023	ES2327616	-	-			-				-	- 1	<0.5 <0	.5 <0.5	<0.5	<0.5	<0.5	<0.5	<0.5 <	<0.5 <	0.5 <0	.5 <0.5	5 <b>&lt;2</b>	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5 <	:0.5	<0.5 <	<0.5 <	<0.5	<2	<1
	2023-09	26/09/2023	ES2332954			<b>&lt;0.5 &lt;</b> 0		<0.5			2 <2			<0.01 <0		1 < 0.01	1 <0.01	< 0.01	<0.01	<0.01 <	0.01 <0	0.01 <0.	0.0	1 < 0.01	1 <0.01	< 0.01	<0.01	<0.01	<0.01	<0.01 <0	0.01 <	0.005 <	0.01 <	0.01 <0	0.01	<1
Site 9	2023-09	28/09/2023	ES2332954	<0.5	<0.5	<b>&lt;0.5 &lt;</b> 0	.5 < 0.5	<0.5	<0.5	2 <	2 <2	< 0.5	<0.5	<0.01 <0	0.0	1 < 0.01	1 < 0.01	<0.01	<0.01	<0.01 <	0.01 <0	0.01 <0.	0.0	1 < 0.01	1 <0.01	< 0.01	<0.01	<0.01	<0.01	<0.01 <0	0.01 <	0.005 <	0.01 <	0.01 <0	0.01	<1
														4 4	4	4	4	4	4	4	4	4 4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
PL Sample Re	quirement				_							_	_																							
	ed			#### ;	#### #	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	## ####	#### #	### ##	# ##	## ###	####	####	4 4	4	4	4	4	4	4	4	4 4	4	4	4	4	4	4	4	4	4	4	4	4 4	4	4
PL Sample Re amples Collecte	ed 2023-07	12/07/2023	ES2323181	####	#####	####	## ####	#### #	### ##	###	## ###	####		4 4 <0.5 <0						4 <0.5 <		4 4 0.5 <0			<0.5					4 <0.5 <		4 <0.5 <			<del>4</del> <2	<1
	ed	12/07/2023 16/08/2023 26/09/2023	ES2323181 ES2327616 ES2332954	##### 1	#### # - -	**************************************	## #### - -	#### # - -	#### ## - -	# ##	## ###	#### - -			.5 <0.5	<0.5	<0.5	<0.5		<0.5 <	<0.5 <	4 4 0.5 <0 0.5 <0	.5 <0.5		<0.5		<0.5	<0.5	<0.5		:0.5	4 <0.5 <0.5 0.005 <	<0.5	<0.5 <	4 <2 <2	

LMCC - Awaba Waste N Environment Protection	lanagement Facility I License 5873 1st gaurter water n	nonitoring	results	Quarterly											
Parameter	Unit	LOR	EPL 5873 I.D.	ANZG 2000 freshwater 95% LOP	MP1	MP2	MP	3 N	/1P4 N	1P5 M	P6 I	MP7	MP8  No available Data	MP9	MP10
Standing water level (m)					9.4	11	3.58	2.96	3.9	1.15					
pH (Lab)	pH un	ts 0.0	1		6.0	08	5.2	6.92	6.4	6.05	8.16	8.:	1		
pH (probe)	pH un	ts 0.0	1												8.2
Total Suspended Solids	mg/L		5 50 (MP6 & MP7)	)							21	2:	2		14
Reactive Phosphate	mg/kg	0.0	1												
Aluminium (Filtered)	mg/L	0.0	1	pH>6.5 0.055											
Arsenic (Filtered)	mg/L	0.00	1	0.013											
Barium (Filtered)	mg/L	0.00	1												
Cadmium (Filtered)	mg/L	0.000	1	0.002											
Chromium (Filtered)	mg/L	0.00	1												
Chromium (hexavalent) (Filter	ed) mg/L	0.0	1	0.01											
Cobalt (Filtered)	mg/L	0.00	1												
Copper (Filtered)	mg/L	0.00	1	0.014											
Iron (Filtered)	μg/L		2	449	44	19	134	78	32400	2640	70	6	5		660
Lead (Filtered)	mg/L	0.00	1	0.034											
Manganese (Filtered)	μg/L	0.		1.9		LO	65.5	548	846	683	13.9	1.:	1		6
Mercury (Filtered)	mg/L	0.000		0.006											
Zinc (Filtered)	mg/L	0.00		0.08											
Perfluorooctanoic acid (PFOA)		0.0													
Perfluorooctane sulfonic acid (		0.0													
Perfluorohexane sulfonic acid		0.0													
Sum (PFHxS + PFOS)	μg/L	0.0													
4:2 Fluorotelomer sulfonic acid		0.0													
6:2 Fluorotelomer sulfonic acid	l (6:2 FTS) μg/L	0.0	5												
8:2 Fluorotelomer sulfonic acid	l (8:2 FTS) μg/L	0.0	5												
10:2 Fluorotelomer sulfonic ac	id (10:2 FTS) μg/L	0.0	5												
Perfluorobutane sulfonic acid	PFBS) μg/L	0.0	2												
Perfluorobutanoic acid (PFBA)	μg/L	0.	1												
Perfluorodecane sulfonic acid	PFDS) $\mu g/L$	0.0	2												
Perfluorodecanoic acid (PFDA)	μg/L	0.0													
Perfluorododecanoic acid (PFI	oDA) μg/L	0.0	2												
Perfluoroheptane sulfonic acid		0.0													
Perfluoroheptanoic acid (PFHp		0.0													
Perfluorohexanoic acid (PFHxA		0.0													
Perfluorononanoic acid (PFNA		0.0													
Perfluorooctane sulfonamide (		0.0													
Perfluoropentane sulfonic acid		0.0													
Perfluoropentanoic acid (PFPe		0.0													
Perfluorotetradecanoic acid (P		0.0													
Perfluorotridecanoic acid (PFT		0.0													
Perfluoroundecanoic acid (PFL		0.0													
N-Ethyl perfluorooctane sulfor		0.0													
N-Ethyl perfluorooctane sulfor		0.0													
N-Ethyl perfluorooctane sulfor		0.0													
N-Methyl perfluorooctane sulf		0.0													
	onamidoacetic acid (MeFOSAA) μg/L	0.0													
N-Methyl perfluorooctane sulf	onamidoethanol (MeFOSE) μg/L	0.0	5		1										

Section   Sect					EPL 5873 I.D.	MP1	MP2	MP	2 M	IP4 M	DE M	DG 1	/1Р7	MP8	MP9	MP10
Page   Control		Sum of PFAS	μα/L		EPL 36/3 I.D.	 	IVIPZ	IVIP	5 IV	IP4 IV	ro ivi	PO II	/IP /	IVIPO	IVIPS	INIPIO
130   130	ST															<20
Calcide fraction (sm)	_ 통 휴	C10-C16 fraction		100												
Class   Clas	ota role ocar	C16-C34 fraction	μg/L	100												480
Class   Clas	Petr dro	C34-C40 fraction	μg/L	100												<100
	_ £	C10-C36 fraction (sum)	μg/L													610
Chloride	o o	C6-C10 fraction	μg/L													
Chloride	apl															
Chloride	호현															
Chloride	og eg															
Chloride	ᄻᆲ															
Chloride	걸ェ															
Calcium (Filtered)	•															
Fluoride																
Magnesium (Filtered)																
Polassium (Filtered)																
Total Cations   men/L   0.01	ous															
Total Cations   men/L   0.01	<u>.</u>															
Total Cations   men/L   0.01     40   113   9 < 1   2.58   40   13   5   5   5   5   10   10   10   10   1	Aaj		-			1	50	233	1/3	100	1120	44	30			1300
Sulfate (as SO4) (Filtered)	_															
Figure   Part							40	113	q	<i>&lt;</i> 1	258	40	13			<50
Miltrate (as N)							40	113	3	<b>1</b>	230	40	13			130
Nitrate (as N)					0.9	<0.	10 (	0.08	7.89	6.7	0.28	0.12	0.25			401
Total phosphorus   mg/L   0.01   Benzene   µg/L   5   950   Tolluene   µg/L   1   Ethylbenzene   µg/L   2   PREW PAP   PREW PAP   PREW PAP   Total BTEX   µg/L   2   Naphthalene (used F2 calc)   µg/L   5   Spropylbenzene   µg/L   5   Naphthalene   µg/L   1   Nacenaphthylene   µg/L   1   Nacenapht	ıts															
Total phosphorus   mg/L   0.01   Benzene   µg/L   5   950   Tolluene   µg/L   1   Ethylbenzene   µg/L   2   PREW PAP   PREW PAP   PREW PAP   PREW PAP   Total BTEX   µg/L   2   Naphthalene (used F2 calc)   µg/L   5   Spropylbenzene   µg/L   5   Naphthalene   µg/L   1   Nacenaphthylene   µg/L   1   Na	Ē.															
Total phosphorus   mg/L   0.01   Benzene   µg/L   5   950   Tolluene   µg/L   1   Ethylbenzene   µg/L   2   PREW PAP   PREW PAP   PREW PAP   Total BTEX   µg/L   2   Naphthalene (used F2 calc)   µg/L   5   Spropylbenzene   µg/L   5   Naphthalene   µg/L   1   Nacenaphthylene   µg/L   1   Nacenapht	Ĕ															
Benzene   mg/L   5   950	_															
Toluene				5	950											
Map-Xylene		Toluene		1												
O-Xylene Total Xylenes	~	Ethylbenzene	μg/L	2												
O-Xylene Total Xylenes	Ĕ	m&p-Xylene	μg/L	2												
Total BTEX	ш	o-Xylene	μg/L	2	350											
Naphthalene (used F2 calc)		•														
Styrene																
Isopropylbenzene					16											
1,2,4-trimethylbenzene $\mu g/L$ 5 1,3,5-trimethylbenzene $\mu g/L$ 1 Benzo(a)pyrene TEQ calc (Zero) $\mu g/L$ 0.5 Naphthalene $\mu g/L$ 1 Acenaphthylene $\mu g/L$ 1	.2	•														
1,2,4-trimethyloenzene $\mu g/L$ 5 1,3,5-trimethylbenzene $\mu g/L$ 1 Benzo(a)pyrene TEQ calc (Zero) $\mu g/L$ 0.5 Naphthalene $\mu g/L$ 1 Acenaphthylene $\mu g/L$ 1	m at															
1,2,4-trimethyloenzene $\mu g/L$ 5 1,3,5-trimethylbenzene $\mu g/L$ 1 Benzo(a)pyrene TEQ calc (Zero) $\mu g/L$ 0.5 Naphthalene $\mu g/L$ 1 Acenaphthylene $\mu g/L$ 1	ē ķ	•														
1,2,4-trimethyloenzene $\mu g/L$ 5 1,3,5-trimethylbenzene $\mu g/L$ 1 Benzo(a)pyrene TEQ calc (Zero) $\mu g/L$ 0.5 Naphthalene $\mu g/L$ 1 Acenaphthylene $\mu g/L$ 1	ic /															
1,2,4-trimethyloenzene $\mu g/L$ 5 1,3,5-trimethylbenzene $\mu g/L$ 1 Benzo(a)pyrene TEQ calc (Zero) $\mu g/L$ 0.5 Naphthalene $\mu g/L$ 1 Acenaphthylene $\mu g/L$ 1	χp															
1,2,4-trimethyloenzene $\mu g/L$ 5 1,3,5-trimethylbenzene $\mu g/L$ 1 Benzo(a)pyrene TEQ calc (Zero) $\mu g/L$ 0.5 Naphthalene $\mu g/L$ 1 Acenaphthylene $\mu g/L$ 1	일술															
1,3,5-trimethylbenzene $\mu g/L$ 1 Benzo(a)pyrene TEQ calc (Zero) $\mu g/L$ 0.5 Naphthalene $\mu g/L$ 1 Acenaphthylene $\mu g/L$ 1	ž															
Benzo(a)pyrene TEQ calc (Zero) $\mu g/L$ $0.5$ Naphthalene $\mu g/L$ $1$ Acenaphthylene $\mu g/L$ $1$																
Naphthalene $\mu g/L$ 1 Acenaphthylene $\mu g/L$ 1																
Acenaphthylene $\mu g/L$ 1																
1.5																
Anthracene $\mu g/L$ 1 Fluorene $\mu g/L$ 1 Phenanthrene $\mu g/L$ 1 Fluoranthene $\mu g/L$ 1 Fluoranthene $\mu g/L$ 1 Benz(a)anthracene $\mu g/L$ 1  Here $\mu g/L$ 1	SI															
Fluorene $\mu g/L$ 1  Phenanthrene $\mu g/L$ 1  Fluoranthene $\mu g/L$ 1  Fluoranthene $\mu g/L$ 1  Benz(a)anthracene $\mu g/L$ 1	bor			1												
Phenanthrene $\mu g/L$ 1 Fluoranthene $\mu g/L$ 1 Benz(a)anthracene $\mu g/L$ 1	car			1												
Figure 1 Fluoranthene $\mu g/L$ 1 Fluoranthene	dro	Phenanthrene		1												
Benz(a)anthracene μg/L 1	Ŧ	Fluoranthene		1												
	atic	Benz(a)anthracene	μg/L	1												

			EPL 5873 I.I	).	MP1	MP2	MP3	MP4	MP5	MP6	MP7	MP8	MP9	MP10
Ē	Benzo(k)fluoranthene	μg/L	1											
Polynuclear Arom	Benzo(b&j)fluoranthene	μg/L	1											
ar	Benzo(a)pyrene	μg/L	0.5											
亨	Chrysene	μg/L	1											
<u> </u>	Pyrene	μg/L	1											
2	Benzo(g,h,i)perylene	μg/L	1											
	Dibenz(a,h)anthracene	μg/L	1											
	Indeno(1,2,3-cd)pyrene	μg/L	1											
	Sum of PAHs	μg/L	0.5											
	3/4-Methylphenol (m/p-cresol)	μg/L	2											
	Phenol	μg/L	1	320	ס									
	2-Chlorophenol	μg/L	1	490	ס									
	2-Methylphenol (o-Cresol)	μg/L	1											
	2-Nitrophenol	μg/L	1											
Sic	2,4-Dichlorophenol	μg/L	1											
Phenols	2,4-Dimethylphenol	μg/L	1											
₹	2,6-Dichlorophenol	μg/L	1											
	4-Chloro-3-methylphenol	μg/L	1											
	2,4,6-Trichlorophenol	μg/L	1	20	ס									
	2,4,5-Trichlorophenol	μg/L	1											
	Pentachlorophenol	μg/L	2	10	י									
	Sum of Phenols	μg/L	50											
y,	1,2-Dibromoethane (EDB)	μg/L	5											
Fumigants	1,2-Dichloropropane	μg/L	5											
. <u></u>	2,2-Dichloropropane	μg/L	5											
교	cis-1,3-Dichloropropene	μg/L	5											
	trans-1,3-Dichloropropene	μg/L	5											
ي.	Bromobenzene	μg/L	5											
nat	Chlorobenzene 2-Chlorotoluene	μg/L	5 5											
ž š	4-Chlorotoluene	μg/L	5											
o ur	1,2-Dichlorobenzene	μg/L μg/L	5	160	2									
Halogenated Aromatic Compounds	1,3-Dichlorobenzene	μg/L μg/L	5	260										
ಕ್ಷ ೦	1,4-Dichlorobenzene	μg/L μg/L	5	60										
<u>a</u> 0	1,2,3-Trichlorobenzene	μg/L	5	10										
_	1,2,4-Trichlorobenzene	μg/L	5	170										
	Dichlorodifluoromethane (Freon 12)	μg/L	50											
	Chloromethane	μg/L	50											
	Vinyl chloride	μg/L	50											
	Bromomethane	μg/L	50											
	Chloroethane	μg/L	50											
	Trichlorofluoromethane (Freon 11)	μg/L	50											
	1,1-Dichloroethene	μg/L	5											
	Iodomethane	μg/L	5											
S	1,1-Dichloroethane	μg/L	5											
ဋ	cis-1,2-Dichloroethene	μg/L	5											
Alphatic Compounds	trans-1,2-Dichloroethene	μg/L	5											
Ë	1,1,1-Trichloroethane	μg/L	5											
ö	1,1-Dichloropropene	μg/L	5											
hat	Carbon Tetrachloride	μg/L	5											
Alp	1,2-Dichloroethane	μg/L	5											
g	Trichloroethene	μg/L	5											
genated /	Dibromomethane	μg/L	5											
8	1,1,2-Trichloroethane	μg/L	5	6800	וי									

			EPL 5873 I.D.		MP1	MP2	MP	3 М	P4 N	/IP5	MP6	MP7	MP	8 MP9	MP10
Halo	1,3-Dichloropropane	μg/L	5												
I	Tetrachloroethene	μg/L	5												
	1,1,1,2-Tetrachloroethane	μg/L	5												
	trans-1,4-Dichloro-2-butene	μg/L	5												
	cis-1,4-Dichloro-2-butene	μg/L	5												
	1,1,2,2-Tetrachloroethane	μg/L	5												
	1,2,3-Trichloropropane	μg/L	5												
	Pentachloroethane		5												
		μg/L	5												
	1,2-Dibromo-3-chloropropane	μg/L													
	Hexachlorobutadiene	μg/L	5												
ne.	Bromodichloromethane	μg/L	5												
ihalom hanes	Bromoform	μg/L	5												
Trihalomet hanes	Chloroform	μg/L	5												
F	Dibromochloromethane	μg/L	5												
	Total Organic Carbon	mg/L	1			13	6	27	64	10	15	5 1	18		538
	Electrical conductivity (probe)	μS/cm	1												4803
	Electrical conductivity (lab)	μS/cm	1		10	60 1	1330	1460	1450	5860	522	2 41	15		
	Biological Oxygen Demand	mg/L	2												79
₹	Bicarbonate Alkalinity as CaCO3	mg/L	1			21	8	497	282	140					3360
<u>=</u>	Carbonate Alkalinity as CaCO3	mg/L	1			<1	<1	<1	<1	<1			<1		135
Alkalinity	Hydroxide Alkalinity as CaCO3	mg/L	1			<1	<1	<1	<1	<1			<1		<1
⋖	Total Alkalinity as CaCO3	mg/L	1		1	21	8	497	282	140	108	3 12	29		3500
	Polychlorinated Biphenyls	μg/L	1												
ted ds	Vinyl acetate	μg/L	50												
E E	2-Butanone (MEK)	μg/L	50												
ger	2-hexanone (MBK)	μg/L	50												
Oxygentated Compounds	4-Methyl-2-pentanone (MIBK)	μg/L	50												
0 -	Carbon disulfide	μg/L	5												
	Azinphos Methyl	μg/L	0.5	0.02											
	Bromophos-ethyl	μg/L	0.5	0.02											
	Carbophenothion	μg/L μg/L	0.5												
	Chlorfenvinphos		0.5												
	•	μg/L	0.5	0.01											
S	Chloropyrifos	μg/L	0.5 0.5	0.01											
ë	Chlorpyrifos-methyl	μg/L	0.5 0.5												
esti	Demeton-S-methyl	μg/L	0.5 0.5	0.01											
S P	Diazinon	μg/L ''		0.01											
L	Dichlorvos	μg/L	0.5												
ğ	Dimethoate	μg/L	0.5	0.15											
Organophosphorus Pesticides	Ethion	μg/L	0.5												
g	Fenamiphos	μg/L	0.5												
gan	Fenthion	μg/L	0.5												
ŏ	Malathion	μg/L	0.5	0.05											
	Monocrotophos	μg/L	2												
	Parathion	μg/L	2	0.004											
	Parathion-methyl	μg/L	2												
	Pirimphos-ethyl	μg/L	0.5												
	Prothiofos	μg/L	0.5												
	Aldrin	μg/L	0.5		<0.5	<0.5	<0.5				<0.5	<0.5			<0.5
	Dieldrin	μg/L	0.5		<0.5	<0.5	<0.5				<0.5	<0.5			<0.5
	Aldrin + Dieldrin	μg/L	0.5		<0.5	<0.5	<0.5				<0.5	<0.5			<0.5
	Alpha-BHC	μg/L	0.5		<0.5	<0.5	<0.5				<0.5	<0.5			<0.5
	Beta-BHC	μg/L	0.5		<0.5	<0.5	<0.5	5 <0	.5 <	0.5	<0.5	<0.5			<0.5
	Delta-BHC	μg/L	0.5		<0.5	<0.5	<0.5	5 <0	.5 <	0.5	<0.5	<0.5			<0.5
	Gamma-BHC	μg/L	0.5	0.2	<0.5	<0.5	<0.5	5 <0	.5 <	0.5	<0.5	<0.5			<0.5

			EPL 5873 I.D.		MP1	MP2	MP3	MP4	MP5	MP6	MP7	MP8	MP9	MP10
	cis-Chlordane	μg/L	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5
des	trans-Chlordane	μg/L	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5
Ę	Total Chlordane	μg/L	0.5	0.08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5
Pes	DDD	μg/L	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5
<u>e</u>	DDE	μg/L	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5
ō	DDT	μg/L	2	0.01	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0			<2.0
딯	DDT+DDE+DDD	μg/L	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5
auc	Alpha-Endosulfan	μg/L	0.5	0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5
org.	Beta-Endosulfan	μg/L	0.5	0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5
	Beta-BHC	μg/L	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5
	Endrin	μg/L	0.5	0.02	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5
	Endrin aldehyde	μg/L	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5
	Endrin ketone	μg/L	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5
	Heptachlor	μg/L	0.5	0.09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5
	Heptachlor epoxide	μg/L	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5
	Hexachlorobenzene (HCB)	μg/L	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5
	Methoxychlor	μg/L	2		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0			<2.0
	Total phenolics	mg/L	0.05		<0.05	<0.05	< 0.05	<0.05	<0.05	< 0.05	<0.05			<0.05



Appendix A – Summary of water quality monitoring data FY 23/24 (post EPL 5873 update)

Quarterly

pH	inding water level tal Dissolved Solids	m mg/L	10			9.9	2.91	2.47	2.78	0.79			243	n				3	.6 2.5	54 2.1	4 13	.81
nН	(Lab)	pH units pH units	0.01			6.38	5.21	7.1	6.51	6.13	7.66	73	87 8.0 N/a		6.5	9 6.8	12 5.5	55 7.5	9 4.4	41 6.0	6 73	1.6
	yp,	,		50 @ MP6 and MP7 for																		
To	tal Suspended Solids	mg/L	0.01	discharge							270		16 6	2 <5	1	2 5	2 1	70				
Alu	aminium (Filtered)	mg/kg mg/L	0.01		pH>6.5 0.055								0.1	7								
Ba	senic (Filtered) rium (Filtered)	mg/L mg/L	0.001 0.001		0.013								0.03 0.21 <0.0001	1								
Ch	dmium (Filtered) romium (Filtered)	mg/L mg/L	0.0001		0.002								0.17	7								
Co	romium (hexavalent) (Filtered) balt (Filtered)	mg/L mg/L	0.01 0.001		0.01								<0.01									
Co	pper (Filtered) n (Filtered)	mg/L μg/L	0.001		0.014	1580	12	2890	13000	565	125	1	0.00	166	25	6 345	0 24	40 2	10 5:	11 257	0 82	21
Les	ad (Filtered) anganese (Filtered)	mg/L μg/L	0.001		0.034			257		480	198		.9 37	4		8 68		7.6 4				
Me	ercury (Filtered)	mg/L mg/L	0.0001		0.006		-						<0.0001						_			
Zir	c (Filtered)	mg/L	0.005		0.08								0.04	7								
Pe	rfluorooctane sulfonic acid (PFOS)	μg/L μg/L	0.01																			
Su	m (PFHxS + PFOS)	μg/L μg/L	0.01																			
4:2	! Fluorotelomer sulfonic acid (4:2 FTS)	μg/L μg/L	0.05 0.05																			
8:2	! Fluorotelomer sulfonic acid (8:2 FTS)	μg/L	0.05																			
Pe	:2 Fluorotelomer sulfonic acid (10:2 FTS) rfluorobutane sulfonic acid (PFBS)	μg/L μg/L	0.05																			
Pe	rfluorodecane sulfonic acid (PFDS)	μg/L μg/L	0.1																			
Pe	rfluorodecanoic acid (PFDA) rfluorododecanoic acid (PFDoDA)	μg/L μg/L	0.02																			
Pe	rfluoroheptane sulfonic acid (PFHpS)	μg/L μg/L	0.02																			
Pe	rfluorohexanoic acid (PFHxA)	μg/L	0.02																			
Pe	rfluorooctane sulfonamide (FOSA)	μg/L μg/L	0.02 0.02																			
Pe	rfluoropentanoic acid (PFPeA)	μg/L μg/L	0.02																			
	rfluorotetradecanoic acid (PFTeDA)	μg/L	0.05																			
Pe N-I	rfluoroundecanoic acid (PFUnDA) Ethyl perfluorooctane sulfonamide (EtFOSA)	μg/L μg/L μg/L	0.02																			
N-I	thyl perfluoroctane sulfonamidoacetic scid (EtFOSAA)  Ethyl perfluoroctane sulfonamidoacetic scid (EtFOSAA)	μg/L μg/L	0.02																			
N-I	Methyl perfluorooctane sulfonamide (MeFOSA)	μg/L	0.05																			
N-I	Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	μg/L μg/L	0.05																			
C6	-C9 fraction	μg/L μg/L	0.01 20										3									_
C1	5-C28 fraction	μg/L μg/L	50 100										30 75									
C2		μg/L μg/L	50 50										<50 105									
C6	-C10 fraction	μg/L μg/L	20																			
>C	10-C16 (minus Naphthalene)(F2)	μg/L	100																			
>C	16-C34 fraction	μg/L μg/L	100																			
>C	34-C40 fraction 10-C40 fraction (sum) loride	μg/L μg/L mg/L	100 100																			
Ca	lcium (Filtered)	mg/L	1			233 27 <	102	53 46	76 52	1340 21	47 38		56 52 40 7	1 <1	10	8 17 9 1		4 3		2 2	3 !	39
Flu	oride	mg/L mg/L	0.1			0.4 35	0.1	0.5 18	0.4	0.6 87	0.2 12		.3 0. 15 4	3 < 0.1	1			0	.5 0	1.1 0. 18 6	5 0	0
Po	tassium (Filtered)	mg/L mg/L	1			7 148	2 101	30 86	15 90	18 859	21 51		30 21 53	20		9 2		3		3 1	7 3	33
To	tal Anions	meq/L	0.01			140	101	00	30	0,5				-		- 10				,		,,
Su	Ifate (as SO4-) (Filtered)	meq/L mg/L	1			39	67	14 -	<10	225	51		34 <10	12	2	0	8 2	20 5	4 2	39 7	2 < 0.10	
An	nic Balance Imonia (as N)	% mg/L	0.01		0.9			7.34	5.19	0.24		2.5					18 < 0.01	0.0				
	rate (as N)	mg/L mg/L	0.01		0.7	0.04	0.1	0.03	0.10	0.15	<0.01	5.	22 <0.10 <0.10	0.18	0.0	1 <0.01	0.0	0.0	7 0.0	0.0	3 < 0.10	
	rite + Nitrate as N tal phosphorus	mg/L mg/L	0.01			0.84	0.05	0.09	1.14	0.06	0.77	0.	14 4.6	4 01	<0.10	<0.10	<0.10	0.2	4 0.0	03	1 6.	. 6
		μg/L μg/L	1 5		950								<1									
To	uene	μg/L μg/L	1 2										<2									
må	kp-Xylene	μg/L	2																			
To	tal Xylenes	μg/L μg/L	2		350																	
To		μg/L μg/L	5		16																-	_
Sty	rene propylbenzene	μg/L ua/L	5																			
Iso	outylbenzene	μg/L μg/L																				
lso n-b	propylbenzene	ua/L	5																			
n-t n-g p-i	ropylbenzene sopropyltoluene	μg/L μg/L	5 5																			
n-b n-p p-i ser	propylbenzene sopropyltoluene	μg/L μg/L μg/L	5 5 5 5																			
n-t n-s p-i ser ter 1,2	ropyllensene sopropylindune - butyllensene - butyllensene - butylensene - d. 4 timethylkensene - f. 5 timethylkensene	μg/L μg/L μg/L μg/L μg/L	5 5 5 5 5																			
n-s p-i ser ter 1,2 1,3 Be	propylearene poppylearene bulylearene bulylearene bulylearene de timelikerene füg de (Den) phibberene	μg/L μg/L μg/L μg/L μg/L μg/L μg/L	5 5 5 5 5 5 1 0.5										<0.5									
n-t n-ser ter 1,2 Be Na Ac	propylenzane special propylenzane special propylenzane special propylenzane special propylenzane special special propylenzane special	μg/l μg/l μg/l μg/l μg/l μg/l μg/l μg/l	5 5 5 5 5 5 1 0.5 1 1										<1.0 <1.0 <1.0									
n-t n-p p-i ser 1,2 Be Na Ac Ac An	propylearane propylearane buyly desirene buyly desi	μg/L μg/L μg/L μg/L μg/L μg/L μg/L μg/L μg/L μg/L μg/L	1										<1.0 <1.0 <1.0 <1.0									
n-t n-t p-i ser ter 1,2 1,3 Be Na Ac Ac An Flu Ph	propylearane specypropylearane buylyearane	μg/L μg/L μg/L μg/L μg/L μg/L μg/L μg/L	1 1 1 1 1										<1.0 <1.0 <1.0 <1.0 <1.0 <1.0									
n-t n-s p-i ser 1,2 1,3 Be Na Ac Ac Ac An Flu Ph Flu Be	propylename geographicane especial propylename to be	μg/L μg/L μg/L μg/L μg/L μg/L μg/L μg/L	1										<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0									
n-t p-i ser 1,2 1,3 Be Na Ac An Flu Be Be Be	propylenzme popylenzme popylenzme busylenzme busylenzme de file de fil	#g/L #g/L #g/L #g/L #g/L #g/L #g/L #g/L	1 1 1 1 1 1 1 1 1 1										<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0									
n-ison n-	propylenzme popylenzme popylenzme busylenzme busylenzme busylenzme busylenzme de de trimetrylenzme de	#g/L #g/L #g/L #g/L #g/L #g/L #g/L #g/L	1 1 1 1 1 1 1 1 1 1 1 1 0.5										<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0									
n-lison n-liso	propylenzme propylenzme propylenzme busylenzme busylenz	#9/L #9/L #9/L #9/L #9/L #9/L #9/L #9/L	1 1 1 1 1 1 1 1 1 1 1 0.5										<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0									
n-t n-t p-i ser 1,2 1,3 Be Na Ac Ac An Flu Be Be Be Be Ch Py Be Dill	propylenzme specyptolene busy herease busy h	pg/L pg/L pg/L pg/L pg/L pg/L pg/L pg/L	1 1 1 1 1 1 1 1 1 0.5										<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0									
n-b n-g p-i ser ter 1,2 1,2 8e Na Ac Ac An Flu Be Be Be Ch Py Be Dill Inc	propylenzme popylenzme by a propylenzme	#9/L #9/L #9/L #9/L #9/L #9/L #9/L #9/L	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1										<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0									
n-lison n-liso	propylenzene by physicians busylenzene bus	#9/\ #9/\ #9/\ #9/\ #9/\ #9/\ #9/\ #9/\	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		320								<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0									
n-ison n-	propylenarea  propylenarea  to depression of the second of	### ### ### ### ### ### ### ### ### ##	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		320 490								<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0									
n-i n-i p-i ser 1,2 1,3 Be Na Ac Ac An Flu Ph Flu Be Be Ch Py Be Dit inc Su 2-4 2-1 2-1 2-1 2-1 2-1 2-1 2-1 2-1 2-1 2-1	propylename  propylename  propylename  \$ 1- \$1 \text{instruction}\$  \$ 1- \$	### ### ### ### ### ### ### ### ### ##	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1										<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0									
n-i n-i p-i sei tes 1,2 1,3 8e Na Ac Ac An Flu Be Be Be Be Ch Py Be Be Be Ch Py Be Ch 2,4 2,4 2,4 2,4 2,4 2,4 2,4 2,4 2,4 2,4	propylenzene geographicuses the physicises the phys	### ### ### ### ### ### ### ### ### ##	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1										<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0									
n-lison n-liso	propylenzme specyptolenem busy hereses busy	µg/L  µg/L	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1										<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0									
1,2   1,2	propylename googyaphulane the physical propylename the high propylename three me the physical propylename three me three me the physical propylename three me thre	µg/L	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		490								<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0									
n-line n-	propylename specipholarem the propylename three me the propylename three me the propylename three me		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		490								<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0									
n-line n-	propylenzmen specyptolenem - besy heresen - besy he		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		490								<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0									
Source   S	propylensme propylensme propylensme to displaneme to displ		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		490								<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0									
Second	propylensmen googyaphulam the propylensmen the propylensm	### ### ### ### ### ### ### ### ### ##	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		490								10 10 10 10 10 10 10 10 10 10 10 10 10 1									
ison ison ison ison ison ison ison ison	propylename googyapholane 1-bu ylytarane 1-bu ylyta		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		490								100 100 100 100 100 100 100 100 100 100									
Ison Ison Ison Ison Ison Ison Ison Ison	propylename  propylename  to displantame  to displantame  to displantame  displanta		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		20								100 100 100 100 100 100 100 100 100 100									
Ison In-Pi- series In- pi- series In- series	propylensmen googypholusen the physician of the physician		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		20 10								410 410 410 410 410 410 410 410 410 410									
Ison In Private In International Internation	propylename googyapholame 1-bulylarane 1-bul		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		160 260 60								410 410 410 410 410 410 410 410 410 410									
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bob	propylename propyl		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		160 260 60								410 410 410 410 410 410 410 410 410 410									
Inches   I	propriemene proprieme propri		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		160 260 60								410 410 410 410 410 410 410 410 410 410									
Ison m-p	propylename specipholarem the physician of the physician		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		160 260 60								410 410 410 410 410 410 410 410 410 410									
Ison in property in the proper	propylename propylename propylename to depresent to the state of the s		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		160 260 60								010 010 010 010 010 010 010 010 010 010									
Source   S	propylename propylename propylename to depresent to the state of the s		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		160 260 60								410 410 410 410 410 410 410 410 410 410									
Ison In-	propylename groupylename groupylename the phylamene the ph		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		160 260 60								40 40 40 40 40 40 40 40 40 40 40 40 40 4									
Ison mr.m. m	propriesses propopholises to be displacement to be displacement to be displacement to the displacement to		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		160 260 60								40 40 40 40 40 40 40 40 40 40 40 40 40 4									
ison members in the second sec	propriesses propopholoses the standard propophol		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		160 260 60								40 40 40 40 40 40 40 40 40 40 40 40 40 4									
lson in many many many many many many many man	propylename propylename propylename to depression of the state of the		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		160 100 100 160 160 170								40 do									
Indian In	propriemene proportionare to deplayment to d		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		160 260 60								40 40 40 40 40 40 40 40 40 40 40 40 40 4									
lson men men men men men men men men men me	propriesses propopholeum to pr		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		160 100 100 160 160 170								40 40 40 40 40 40 40 40 40 40 40 40 40 4									
ison men in the property of th	propylename propyl		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		160 100 100 160 160 170								40 40 40 40 40 40 40 40 40 40 40 40 40 4									
Inches   I	propriesses propopholacies to buylariane to buylariane to buylariane to buylariane to the first property to the company to the		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		160 100 100 160 160 170								40 40 40 40 40 40 40 40 40 40 40 40 40 4									

			EPL 5873 I.D.	MP1		MP2	MP3	MP4	MP5	MP6	MP7	MP10	MP11	MP12	MP14	MP15	MP19	MP20	MP21	MP22	MP23
8	Bromodichloromethane	μq/L	5																		
Ēβ	Bromoform	μq/L	5																		
율품	Chloroform	μq/L	5																		
<u> </u>	Dibromochloromethane		5																		
-		μg/L			_												_				
	Total Organic Carbon	mg/L	1		9	4	4	16 5	2	6 3	31 :	30 19	4 1	9 1	4 3	3 12		7	7 1	4 336	6 27
	Electrical conductivity (probe)	μS/cm	1									N/a									
	Electrical conductivity (lab)	μS/cm	1		1120	536	6 7	95 80	4 519	90 55	51 6	61 552	0 15	0 39	6 73	8 312	49:	3 165	0 481	0 8400	0 3120
	Biological Oxygen Demand	mg/L	2									3	5								
#	Bicarbonate Alkalinity as CaCO3	mq/L	1		150	11	1 3	50 32	7 14	14 16	59 2	11 214	0	5 3	2 11	8 5	19	1	6 28	2 3210	0 97
4 >	Hydroxide Alkalinity as CaCO3	mq/L	1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
¥	Total Alkalinity as CaCO3	mq/L	1		150	11	1 3	50 32		14 16		11 214		5 3	2 11	8 5	19	1	6 28		
-	Polychlorinated Biphenyls	μq/L	1						_					_					-		
	Vinyl acetate	μq/L	50																		
\$ 5																					
Orygen ed Compor	2-Butanone (MEK)	μg/L	50																		
8 8	2-hexanone (MBK)	μg/L	50																		
0 8	4-Methyl-2-pentanone (MIBK)	μg/L	50																		
	Carbon disulfide	μg/L	5																		
	Azinphos Methyl	μg/L	0.5	0.02								< 0.5									
	Bromophos-ethyl	µq/L	0.5									< 0.5									
	Carbophenothion	μq/L	0.5									< 0.5									
	Chlorfenvinphos	μq/L	0.5									< 0.5									
	Chlorpyrifos	μq/L	0.5	0.01								<0.5									
e e	Chlorpyrifos-methyl	μq/L	0.5	0.01								<0.5									
- 5			0.5									<0.5									
葡	Demeton-S-methyl	μg/L	0.5	0.01								<0.5									
-	Diazinon	μg/L		0.01																	
2	Dichlorvos	μg/L	0.5									<0.5									
ĕ	Dimethoate	μg/L	0.5	0.15								< 0.5									
8	Ethion	μg/L	0.5									< 0.5									
5.	Fenamiphos	μg/L	0.5									< 0.5									
2	Fenthion	μq/L	0.5									< 0.5									
2	Malathion	μg/L	0.5	0.05								< 0.5									
0	Monocrotophos	µq/L	2									<2.0									
	Parathion	μq/L	2	0.004								<2.0									
	Parathion-methyl	μq/L	2									<2.0									
	Pirimphos-ethyl	μg/L	0.5									< 0.5									
	Prothiofos	μq/L	0.5									<0.5									
	Aldrin	μq/L	0.01	<0.5		<0.5	< 0.5	<0.5	< 0.5	<0.5	<0.5	<0.5	<0.5	< 0.5	<0.5	<0.5	< 0.5	<0.5	< 0.5	<0.5	<0.5
	Dieldrin		0.01	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Aldrin + Dieldrin	μg/L	0.01	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
		μg/L																			
	a-BHC	μg/L	0.01	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	b-BHC	μg/L	0.01	<0.5		<0.5	< 0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	d-BHC	μg/L	0.01	<0.5		<0.5	< 0.5	<0.5	<0.5	<0.5	<0.5	< 0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	< 0.5	< 0.5	<0.5
	g-BHC (Lindane)	μg/L	0.01	0.2 < 0.5		<0.5	< 0.5	<0.5	< 0.5	< 0.5	<0.5	< 0.5	<0.5	< 0.5	<0.5	<0.5	<0.5	<0.5	< 0.5	< 0.5	<0.5
	cis-Chlordane	μg/L	0.01	<0.5		<0.5	< 0.5	<0.5	< 0.5	< 0.5	<0.5	< 0.5	<0.5	< 0.5	< 0.5	<0.5	< 0.5	<0.5	< 0.5	< 0.5	<0.5
ě	trans-Chlordane	μg/L	0.01	<0.5		<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5
뀵	Chlordane	μq/L	0.01	0.08 < 0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
e e	DDD	µq/L	0.01	<0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5
2	DDE	μq/L	0.01	<0.5		<0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	< 0.5	<0.5	< 0.5	< 0.5	<0.5	< 0.5	<0.5	< 0.5	< 0.5	<0.5
-E	DDT	μq/L	0.01	0.01 <2.0		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
ž	DDT+DDE+DDD	μq/L	0.01	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ĕ	Endosulfan 1	μq/L μq/L	0.01	0.2 <0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
5.	Endosulfan 2	μq/L	0.01	0.2 <0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
ŏ																					
	Endosulfan sulfate	μg/L	0.01	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Endrin	μg/L	0.01	0.02 <0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Endrin aldehyde	μg/L	0.01	<0.5		<0.5	< 0.5	<0.5	<0.5	<0.5	<0.5	< 0.10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	< 0.5	<0.5	<0.5
	Endrin ketone	μg/L	0.01	<0.5		<0.5	< 0.5	<0.5	< 0.5	< 0.5	<0.5	< 0.11	<0.5	< 0.5	< 0.5	<0.5	< 0.5	<0.5	< 0.5	< 0.5	<0.5
	Heptachlor	μg/L	0.005	0.09 < 0.5		<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.12	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5
	Heptachlor epoxide	μg/L	0.01	<0.5		<0.5	< 0.5	<0.5	< 0.5	< 0.5	<0.5	< 0.13	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5
	Hexachlorobenzene (HCB)	μg/L	0.01	<0.5		<0.5	< 0.5	<0.5	< 0.5	< 0.5	<0.5	< 0.14	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Methoxychlor	µq/L	0.01	<2.0		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
	Total phenois	mq/L	0.05	<0.0	5 <	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05

EPL 5873 I.D.

MP6 MP7

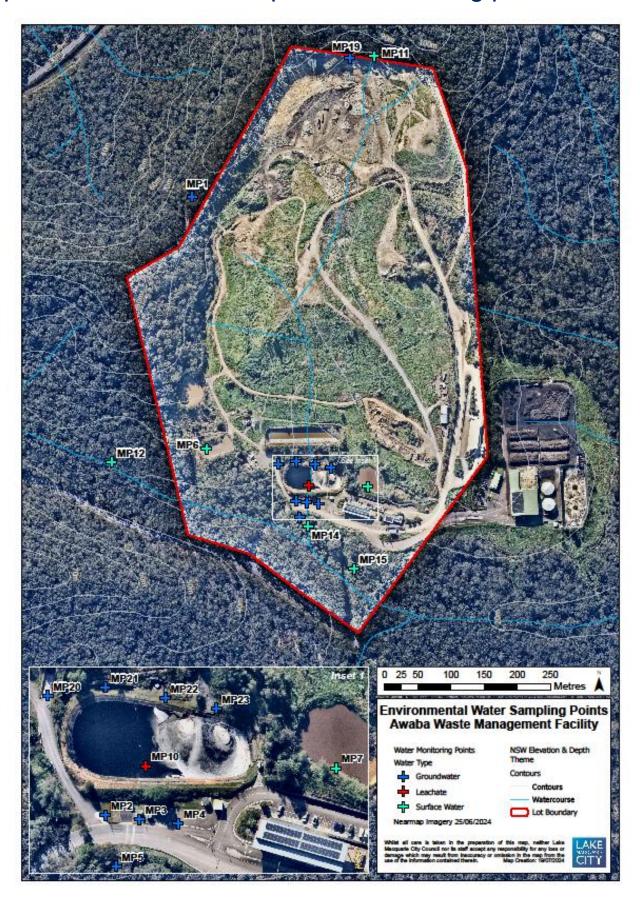
MP5

MP10 MP11

MP12 MP14

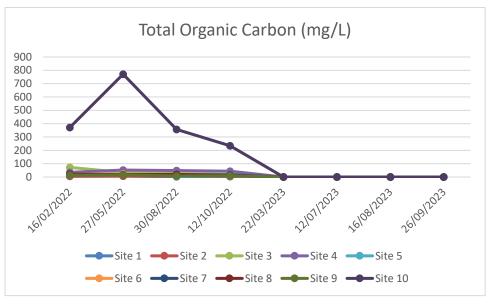


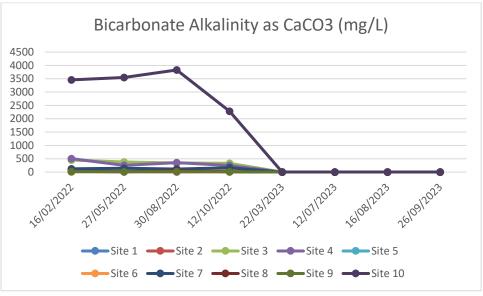
## Appendix B - EPL 5873 updated monitoring point locations

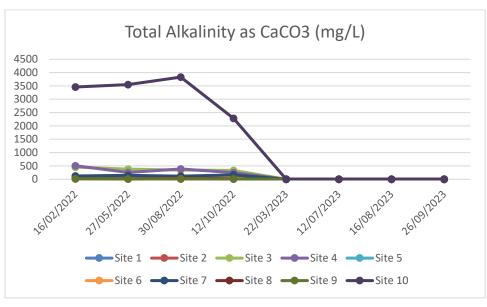




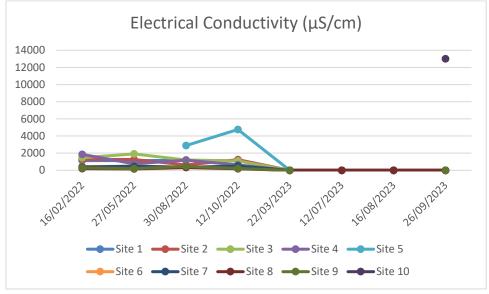
## Appendix C – Historical water monitoring charts

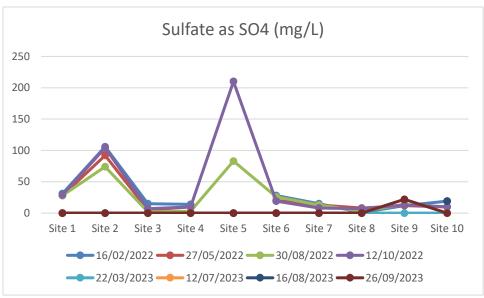


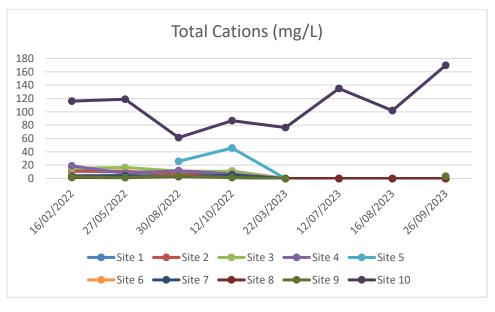




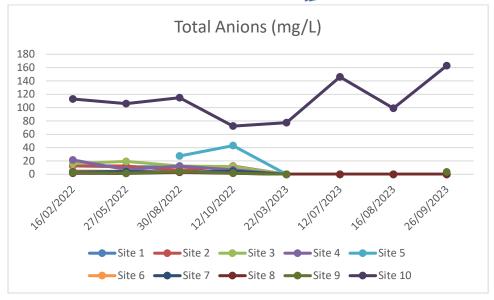


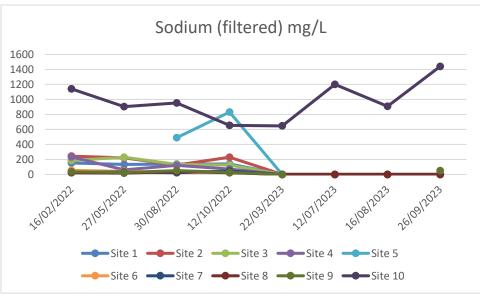


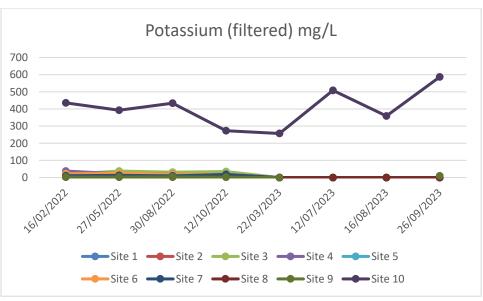




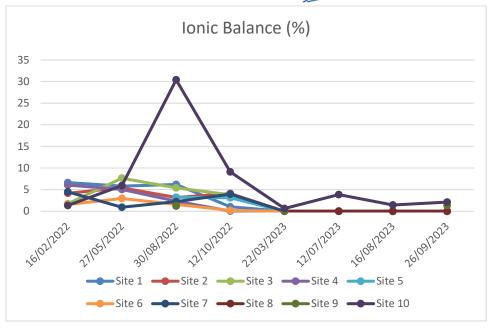


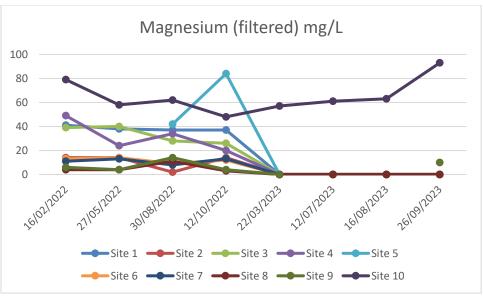


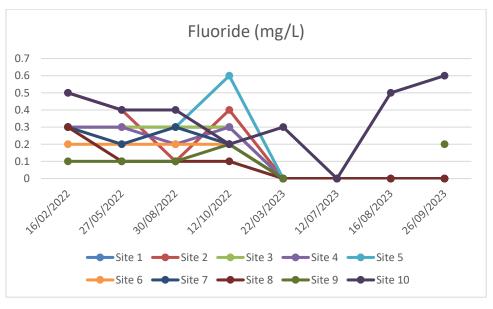




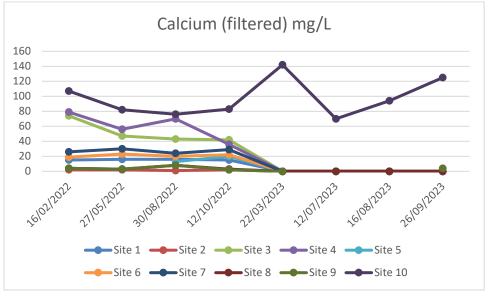


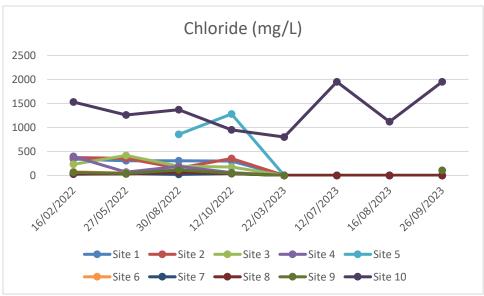


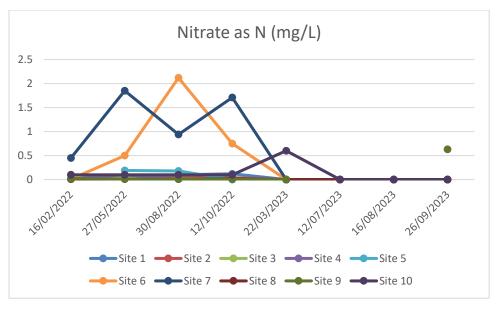




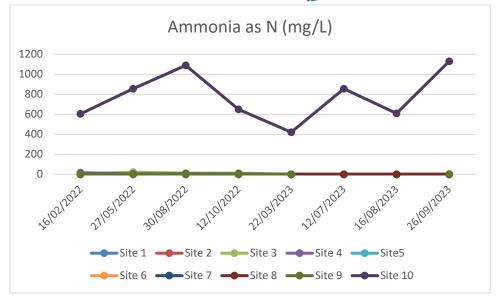


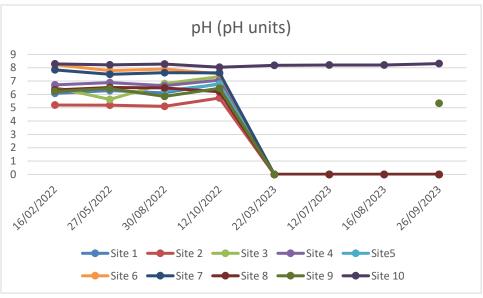


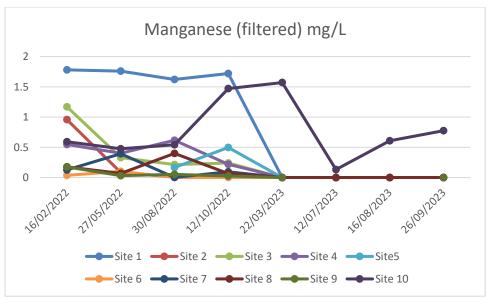




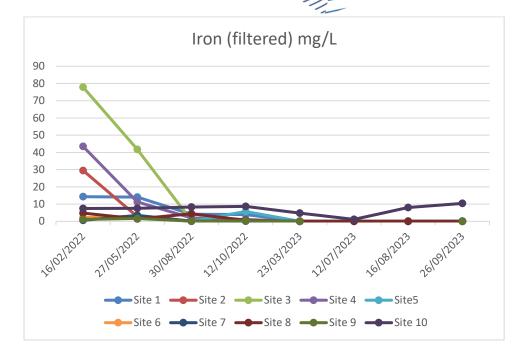












#### Department of Planning, Housing and Infrastructure



NSW Planning ref: MP10\_0139-PA-41

Ainslee Roser
Awaba Waste Management Facility - Environmental Officer
LAKE MACQUARIE CITY COUNCIL
126-138 MAIN ROAD
SPEERS POINT New South Wales 2284
23/09/2024

Sent via the Major Projects Portal only

Subject: Annual Environmental Management Review 2023 - 2024

Dear Miss Roser,

I refer to the Awaba Waste Management Facility Annual Review (AEMR) for the period 1 July 2023 – 30 June 2024, submitted as required by Schedule 5, Condition 4 of MP10\_0139 as modified (the consent) to the NSW Department of Planning, Housing and Infrastructure (NSW Planning) on 29 July 2024.

NSW Planning has reviewed the Annual Review and considers it to generally satisfy the reporting requirements of the consent.

Please note that the NSW Planning's acceptance of this Annual Review is not an endorsement of the compliance status of the project.

Non-compliances identified in the Annual Review have been assessed by NSW Planning in accordance with its Compliance Policy, with NSW Planning on this occasion determining to record the breaches with no further enforcement action proposed. However, please note that recording the breach does not preclude NSW Planning from taking an alternative enforcement action, should it become apparent that an alternative response is more appropriate.

Should you wish to discuss the matter further, please contact Laura Gothard, Senior Compliance Officer on 0484269988 or email <a href="mailto:compliance@planning.nsw.gov.au">compliance@planning.nsw.gov.au</a>

Yours sincerely

Heidi Watters Team Leader Compliance

As nominee of the Planning Secretary