dulverton
waste management

Landfill Public Environmental Report

July 2019 to June 2022

By Dulverton Waste Management

This report was researched and prepared by:

Dulverton Waste Management

Author: Abbie Allan, Environmental Administration
Company: Dulverton Waste Management
Address: Level 1/17 Fenton Way
Devonport TAS 7310
Email: admin@dulverton.com.au
Website: www.dulverton.com.au
ABN: 11 784 477 180

For:

EPA

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Contents

1. Introduction

This report has been prepared to detail the operations and environmental compliance of the Dulverton Landfill from July 2019 to June 2022. This is a requirement of the Annual Fee Remission Guidelines under the Environmental Management and Pollution Control (General Fees) Regulations 2007. This report follows the criteria set out in those guidelines.

2. Acronyms

DWM Dulverton Waste Management

EPA Environment Protection Authority

EPN Environment Protection Notice

DORF Dulverton Organic Recycling Facility

EMS Environmental Management System

CAR Corrective Action Request

3. Business Profile

Dulverton Waste Management (DWM) is a jointly authority of Devonport City Council, Kentish Council, Central Coast Council, and Latrobe Council. DWM exists to provide regional waste management services for its owners, the community and industry, in a manner that is compliant with current environmental standards and expectations.

The Landfill is not open to the public; arrangements must first be made with the DWM office to become a customer before disposals can be made at the site. DWM's aim is to promote the facility as a 'last resort' and encourage all waste items to be recycled and reused wherever possible to limit the amount of waste to landfill. During the period that this report covers, site operation was un contractual arrangements. A Site Supervisor and an average of four full time staff are employed to operate the site. Peak times and during special projects additional staff may be employed.

DWM accepts various controlled wastes for disposal provided the waste products are below Level 3 contaminant levels. EPA approval is sought wherever items are difficult to classify.

DWM have in place an accredited Environmental Management System (EMS) which is annually audited by an approved company. To maintain accreditation, DWM is required to show ongoing improvements to the management which minimise adverse impacts on the environment. DWM also combine work health and safety requirements, such as Safe Work Method Statements, into the EMS so that the system encompasses all relevant day to day instructions for staff. To this end, the site contractor has worked continuously with DWM to ensure that all procedures used on site accurately reflect how the task is to be completed safely and with minimal impact.

4. Environmental Policy

Refer to Appendix A **-** DWM's Environmental Policy

5. Reporting Period

The reporting period for this report is July 2019 to June 2022.

6. Activity Profile

Listed below is infrastructure on the landfill site, and plant and machinery used in daily operations.

6.1 Plant and Operations

- Site office and crib room
- Gas collection system and flare
- Weighbridge and boom gate
- Workshop and equipment storage shed
- Firefighting pump and portable water storage tank for use on truck, supported by pressurised ring main.
- Mains, sprinklers, and stormwater storage dam, for firefighting purposes
- Two lined leachate storage dams for collection of leachate from landfill
- One lined emergency leachate storage
- Lined stormwater collection ponds
- Pump stations and an underground leachate pipeline from site to the Latrobe sewerage treatment plant for transferring landfill leachate (as trade waste)
- Bulldozer for spreading waste
- Compactor for compacting waste
- Backup compactor
- Excavator for unloading and burial of waste, and for spreading cover material
- Articulated truck for transporting cover to site
- Water cart for dust suppression
- Other earthmoving machinery during construction of new landfill cells, landfill cell rehabilitation, for road maintenance and for other non-routine tasks
- Light vehicles for moving personnel around site

6.2 Production Capacity and Actual Production Capacity

The EPN issued to DWM allows a maximum of 80,000 tonnes of waste per year to be received for disposal in the landfill.

The following tables detail the quantities of waste disposed in landfill from July 2019 to June 2022.

Table 1 - Landfill Quantities for July 2019 to June 2020

Waste Type	Contribution to total (%)	Total Contribution (Tonnes)	Monthly Average (Tonnes)
Commercial and Industry	34.67%	20,988	1,749
Construction and Demolition	1.4%	864	72
Controlled Waste	7.12%	4,311	359
Municipal Solid Waste	56.78%	34,370	2,864
TOTAL	**100%**	**60,533**	**5,044**

Table 2 - Landfill Quantities for July 2020 to June 2021

Waste Type	Contribution to total (%)	Total Contribution (Tonnes)	Monthly Average (Tonnes)
Commercial and Industry	29.06%	22,044	1,837
Construction and Demolition	0.85%	643	53
Controlled Waste	10.20%	7,724	644
Landfill Special Projects	12.67%	9,620	801
Municipal Solid Waste	47.22%	35,813	2,985
TOTAL	**100%**	**75,845**	**6,320**

Table 3 - Landfill Quantities for July 2021 to June 2022

Waste Type	Contribution to total (%)	Total Contribution (Tonnes)	Monthly Average (Tonnes)
Commercial and Industry	31.32%	24,111	2,009
Construction and Demolition	1.54%	1,189	99
Controlled Waste	9.85%	7,587	632
Landfill Special Projects	10.11%	7,786	649
Municipal Solid Waste	47.18%	36,316	3,026
TOTAL	**100%**	**76,988**	**6,415**

6.3 Raw Material Consumption Level

- Clay is used for capping and cell construction.
- Growing medium and soil overburden is used for day cover and rehabilitation purposes.

6.4 Product Markets and Sources of Raw Materials

This is not applicable to the Landfill operation.

6.5 Pollution Discharges and Control Measures

As required by the EPA's Annual Fee Remission Guidelines, this section briefly discusses the pollution discharges and wastes generated by the Landfill, and their control measures, in relation to air, water, noise and soil. It also covers general waste and controlled waste, energy use, water use, measures to manage and minimise greenhouse gas emissions, flora/fauna/biodiversity, and cultural and aboriginal heritage.

Air Emissions from Machinery

The use of machinery is a necessary part of the operation and is consistent with the activity. Machinery use has minimal potential for actual impacts on the local environment. The Landfill has a sufficient vegetative and distance buffer for any air emissions from machinery to be dispersed. Site plant and equipment is modern and well maintained. In 2019 DWM purchased a landfill compactor with Tier IV engine technology to minimise air emissions.

Air Emissions from Landfill (Odour)

There is potential for the Landfill to generate odour, at times, due to the nature of the activity. This is minimised by the implementation of the EMS, initially with the use of the Aspects and Impacts Register to assess the risks and controls required to avoid air pollution. The EMS follows on with waste acceptance procedures, with some waste types automatically deep buried on arrival to minimise odour.

Should any failure occur in this procedure, it would be raised as a Corrective Action Request (CAR) and the site contractors would be required to rectify the issue.

Water Emissions

The landfill generates leachate – the result of rainwater filtering through the open landfill or moisture contained within the waste. This leachate is collected and stored in two lined storage dams. From here it is pumped via an underground pipeline to the Latrobe sewerage treatment plant, under a Trade Waste Agreement.

There is potential for environmental pollution to be caused to the nearby waterways and soil if contaminated water were to unintentionally leave the site. A substantial amount of work is done to manage the generation of leachate on site, and the groundwater surrounding the site is sampled and analysed on a regular basis in accordance with EPN conditions.

Stormwater is collected on site and is directed around the site into either Stormwater Pond 3, or to surface drains off site.

Noise emissions

The type of noise generating activity on site is generally heavy vehicle operations and is of a type consistent with the activity and land use. There is potential for the site to be noisy, at times, but the actual impact of this is minimal as the site has strict opening hours so noise is generated only during typical business hours. Also, the noise level is sporadic and considering the significant buffer in the surrounding vegetation and distances to neighbouring properties, it is unlikely to create a nuisance. No Corrective Action requests have been raised in relation to noise on DWM's site, however, a complaint was received in 2022 relating to harvesting works on land neighbouring DWM's site. DWM played an active role in ensuring this was corrected by the neighbouring landowner.

Land/soil contamination

The construction of the site is such that contaminated soil, either existing or in disposed waste, is within the boundaries of a constructed cell and therefore contained to prevent land contamination of areas outside those approved.

There is potential for soil to become contaminated with leachate should the storage ponds overflow, therefore substantial work is done to manage leachate on site to prevent this occurring. Most of this work is preventative in nature.

General waste and controlled waste

General waste and controlled waste are not generated on site, but by the nature of the activity are brought to the site for disposal. Leachate, potentially at controlled waste levels, is a by-product generated by this activity and is discussed under water emissions.

Energy use

Energy used on site is purchased from the grid and is used for the site office, workshop, and pump operations.

Water use

The site is not connected to a reticulated water supply and has rainwater for staff facilities. Stormwater is collected and available (with a pressurised ring main added in 2021) for firefighting and dust suppression as needed.

Greenhouse gases

The greatest contributor to greenhouse gas emissions in a landfill operation is the landfill itself. The landfill emissions far outweigh the combined emissions from electricity and fuel usage.

DWM operate a composting facility (Dulverton Organics Recycling Facility) to divert organic waste from the landfill and reduce greenhouse gas emissions. The current rate of diversion to the DORF is estimated to be the same as removing over 30,000 cars per year from the road.

In 2014, DWM had landfill gas recovery infrastructure installed. This system of underground pipes and manifold stations draws anaerobic gases to a flare where methane is converted to carbon dioxide delivering significant environmental benefits. Periodically new gas collection infrastructure is installed to capture gas from new landfill areas.

Flora, fauna, and biodiversity

A fauna conservation area has existed for some time along the eastern boundary of the landfill site to protect vegetation around Caroline Creek, which is habitat for the Giant Freshwater Crayfish. DWM have also created a protected area which includes native vegetation along Caroline Creek to the east of the landfill.

EMS procedures are in place for management of weeds and fire track clearing in this area, but otherwise there is negligible impact from the landfill. A permanent litter fence has been installed to prevent windblown litter entering the area. Three groundwater bores are in this area to monitor any impacts from the landfill on groundwater. Caroline Creek is also sampled regularly to monitor any potential impacts from the landfill.

DWM would like to note that recent forestry activity has occurred on both the north and south boundary of site by neighbouring landowner.

DWM have also recently purchased a forestry buffer on the north side of the site boundary.

Cultural and Aboriginal heritage

There is no known cultural or aboriginal heritage associated with the Landfill.

6.6 The Local Environment

DWM operates a composting facility on a neighbouring title of land. Both these businesses are controlled by licences from the EPA.

The landfill is surrounded by privately-owned forest plantations and some natural vegetation. In the wider vicinity there are natural waterways, a railway line coming from Cement Australia, Railton Road (sealed) and unsealed roads leading into the site, small farm holdings and 'lifestyle' blocks.

6.7 The Regional Environment

Temperature Data is collected from a station situated in Sheffield.

Rainfall Data is collected from a station situated in Railton.

Data from the nearest able weather station:

Month	Mean maximum temp	Mean minimum temp	Mean rainfall
January	24.3ºC	19.8 ºC	17.0
June	11.8 ºC	3.6 ºC	136.2

(Source; www.bom.gov.au)

There are no air monitoring stations around the site, but the air quality is particularly good.

The typical prevailing winds are South-Westerly.

6.8 Significant Changes during the Reporting Period

Briefly, significant changes to the Landfill operation in the reporting period are as follows:

- An in-depth review of the Site Induction process including the video and the booklet provided to inductees.
- Installation of an additional gas well in 2022.
- Construction of cell B1 North/South and signed contracts for construction of cell B2.
- Construction of water ring main.
- Utilisation of GPR for resource management

7. Permit Conditions

A copy of EPN 7158/3, is attached in Appendix B.

The EPA provided a variation to EPN No. 7158/3 dated 07/02/2022, for approval to operate outside of normal operating hours for a set period to assist with a mass fish mortality event.

The EPA provided an initial and two subsequent Environmental Approval No. 10411/1,2 &3, for the disposal of clinical and related waste beginning March 2020 and currently forecasted until mid-2024.

8. Relevant Environmental Legislation

- Environmental Management and Pollution Control Act 1994 (Tas)
- Environmental Management and Pollution Control (Waste Management) Regulations 2010
- Land Use Planning and Approvals Act 1993 (Tas)
- Threatened Species Protection Act 1995 (Tas)
- Weed Management Act 1999 (Tas)
- Information Bulletin No. 105; Classification and Management of Contaminated Soil for Disposal 2010
- Landfill Sustainability Guide 2004
- State Policy on Water Quality Management 1997
- Tasmanian Biosolids Reuse Guidelines, 2020
- Classification and management of contaminated soil for disposal, Bulletin 105
- AS/NZS ISO 14001:2015 – Environmental Management Systems

9. Complaints Received by the Public

Complaints received by the public are dealt with as Corrective Action Requests (CAR's) under the EMS.

See Appendix C for a list of these CAR's.

10. Non-Compliance with Permit Conditions

Environmental incidents and incidents of non-compliance with permit conditions and legislation are dealt with as Corrective Action Requests (CAR's) under the EMS.

See Appendix C for a list of these CAR's.

11. Infringement Notices and EPN's

The Landfill is permitted to operate under the conditions of Environment Protection Notice 7158/3. No other EPN's or Infringement Notices have been issued in the reporting period.

12. Actions under EMPCA; Environmental Agreements, Improvement Programs, and Mandatory Environmental Audits.

12.1 Environmental Agreements

No environmental agreements, in respect to Division 2, s28 of EMPCA, were made during this reporting period.

12.2 Environmental Improvement Programs

No Environmental Improvement Program, in respect to Division 7, s37 of EMPCA, were made during this reporting period.

12.3 Mandatory Environmental Audits

In respect to Division 3, s30 of EMPCA, there have been no mandatory audits undertaken at DWM.

13. Prosecutions and Enforcement Action

No proceedings have occurred in relation to the activity during the reporting period, either under Tasmanian or Commonwealth environmental legislation, other legislation, or local government by-laws.

14. Environmental Monitoring

A copy of the most recent annual monitoring data during the reporting period is attached in Appendix D.

15. Staff and Contractor Environmental Training

Before commencing work all personnel must be inducted onto the DWM site. This includes watching the Site Induction video, reading the Site Induction booklet, completing a Site Induction acknowledgement form, and signing any appropriate Safe Work Method Statements (SWMS). This process provides staff and contractors with an outline of the EMS and why it is used on site. SWMS are an industry requirement for construction activities and the like and are used by DWM for all activities where control measures are required to minimise risk, whether they be ongoing day-to-day tasks or one-off project works.

After inductions, personnel working on site are required to participate in an EMS Awareness session, to develop further understanding of the legal requirements of DWM's operation and expand their general knowledge of the significant environmental risks on the DWM site.

To ensure that the EMS is a relevant and useful tool for daily operations, DWM expands on the SWMS work health and safety format by requiring that staff writing the SWMS consider the activity and any potential environmental impacts it may have. Any necessary control measures are then listed for site personnel to understand and adhere to.

In addition to this the site contractor has regular toolbox meetings using a set agenda. This agenda includes the review of one EMS Work Instruction, one EMS Procedure and one SWMS, to assist in maintaining awareness of the system and giving staff a broader understanding of site operations other than their specific role.

16. Community Engagement

During the reporting period, numerous tours of the site have been conducted by the team at DWM. Tour participants range from council staff from within and outside of the region, local community groups, general members of the public and students from local schools. At times, DWM have also collaborated with local waste collection companies to provide a combined knowledge approach for tour participants.

DWM provide updates to Kentish and Latrobe Council when it is believed that information may be of interest to the communities near DWM.

17. Environmental Management over and above Permit Requirements

Since July 2008, DWM has implemented and maintained an Environmental Management System (EMS) to ensure that best practice operations are conducted on site. The EMS System is certified by BSI and audited annually. The benefits to DWM of implementing this system have been wide ranging, and far outweigh the significant effort it takes to maintain a certified system. DWM staff continue to receive full support from the Board and CEO for its implementation. The overall aim of the EMS is to ensure that the site is operated at the optimum level of environmental management.

Please see DWM's most recent BSI External Audit report in Appendix E, and DWM's BSI Certification in Appendix F.

18. Commitments to Improve Future Environmental Performance

All personnel involved with the DWM operation – Board, CEO and staff, and site contractors – are committed to continual improvement and refinement of the Environmental Management System (EMS) as the best method of assessing and managing environmental issues.

19. Statement by Chief Executive Officer

"I acknowledge the contents of this periodic Environmental Report."

Matthew Layton

Interim Chief Executive Officer

Dulverton Waste Management

Date: 19 / 08 / 2022

13 Appendices:

- Appendix A – DWM's Environmental Policy
- Appendix B - Copy of EPN 7158/3
- Appendix C – Table of Complaints Received by Public, Incidents and Non-Compliance.
- Appendix D – Environmental Monitoring Report
- Appendix E – BSI Audit Report
- Appendix F – BSI EMS Certificate

Environmental Policy

OBJECTIVE

Dulverton Waste Management (DWM) is committed to responsible environment management and the pursuit of providing a safe and sustainable waste management, minimisation and recycling service for our community.

LEGISLATION

Environmental Management & Pollution Control Act 1994 (Tas)

DEFINITIONS

Environmental Management System (EMS)	An Environmental Management System (EMS) is a structured management tool which provides a methodical approach to planning, implementing and reviewing the performance of an organisation in regard to its compliance obligations for environmental management. It follows the standards set out in AS/NZS ISO 14001:2015, and is regularly audited independently to assess adherence and for ongoing improvement.
Stakeholders	a person or group that has an investment, share, or interest in something, as a business or industry.

RESPONSIBILITIES

Board:

- To provide the financial and human resources required to support the objectives of this policy.

Chief Executive Officer:

- To provide the systems and procedures to support the objectives of this policy

Employees, Contractors & Sub-Contractors:

- To comply with all the systems and procedures relating to the environment;
- To at all times consider the effect of an activity on the environment; and
- To discontinue an activity if it becomes apparent that environmental harm may occur.

POLICY STATEMENT

DWM is committed to:

- Playing a leading role in promoting best practice in our industry;
- Protection of the local environment and minimisation of waste;
- Compliance with applicable compliance obligations and with other requirements to which the organisation subscribes;
- Communicating with all persons working for or on behalf of the organization the requirements of the Environmental Management System (EMS);
- Minimising and where possible avoid adverse impacts on our stakeholders, environment and social surrounds;
- The reduction of suitable waste stream volumes to landfill, through effective reuse, composting and minimization strategies; and
- Understanding and minimising our greenhouse gas contribution

DWM will:

- Actively pursue continual improvement in environmental management;
- Provide a framework for setting and reviewing environmental objectives and targets;
- Implement and maintain an Environmental Management System (EMS) certified to ISO 14001:2015; and
- Regularly review its environmental performance through:
    - Management review of the system;
    - Progress against objectives and targets; and
    - An internal and external audit.

OTHER KEY RELATED POLICIES

Nil

REVIEW

This policy will be reviewed every four years or as required by the Board.

REFERENCE			
APPROVED BY:	DWM Board of Directors	**MINUTE NO:**	MFID 1570156
APPROVAL DATE:	12th August 2020	**REVIEW DATE:**	by September 2024

ENVIRONMENT PROTECTION NOTICE No. 7158/3

Issued under the *Environmental Management and Pollution Control Act 1994*

Issued to: **DULVERTON REGIONAL WASTE MANAGEMENT AUTHORITY**
ABN 11 784 477 180
LEVEL 1, 35 STEWART ST
DEVONPORT TAS 7300

Environmentally Relevant Activity: **The operation of a waste depot (ACTIVITY TYPE: Other (non-inert) Waste Depots)**
DULVERTON REGIONAL LANDFILL, DAWSONS SIDING RD
DULVERTON TAS 7310

GROUNDS

I, Wes Ford, Director, Environment Protection Authority, (the Director), being satisfied in accordance with section 44(1)(d) of the *Environmental Management and Pollution Control Act 1994* (EMPCA) that in relation to the above-mentioned environmentally relevant activity that it is desirable to vary the conditions of a permit (see table below) hereby issue this environment protection notice to the above-mentioned person as the person responsible for the activity.

Permit No.	Date Granted	Granted By
5931	26 November 1993	Director of Environmental Control

PARTICULARS

The particulars of the grounds upon which this notice is issued are:

1 A regulatory limit which sets the maximum scale or throughput of the activity is needed because any increase in scale or throughput may result in additional environmental impacts or emissions that were not considered at the time of granting of the permit.

2 The permit does not include a condition requiring the person responsible to take action to minimise environmental harm if an incident occurs. It is necessary to update conditions to be in accordance with current incident response protocols.

3 The permit conditions need to be varied to more specifically identify when approvals to effect change are required.

4 A condition requiring notification of a change of ownership of The Land is needed because this Notice may affect title to land and the new owner's interests may be affected by pollutants emitted or disturbed by the activity.

5 It is necessary to add a condition requiring a public complaints register to be maintained so that the Director can appraise the frequency and characteristics of complaints which may indicate nuisance should any complaints be received.

6 The permit does not contain conditions relating to adequate management of stormwater on The Land. It is necessary to add a condition requiring adequate management of stormwater to prevent environmental harm and/or nuisance being cause by stormwater leaving The Land.

7 Conditions relating to receivable wastes need to updated to include all materials currently considered acceptable for deposition at the activity.

8 A condition is included to require the submission of an Annual Environmental Review to ensure timely reporting of environmental performance.

9 It is necessary to add a condition requiring the submission of a publicly available Annual Environmental Review to inform the Director and the public of the environmental performance of the activity.

10 A number of conditions relating to the DPEMP have been removed as they have been fulfilled and are no longer required.

11 It is necessary to add a condition to ensure effective management measures to control dust emissions from The Land to prevent environmental nuisance.

12 The permit does not contain conditions requiring leachate management. Conditions have been included to protect water quality.

13 The permit does not contain a requirement for quality assurance for new cell construction or the notification of commencement of works. Conditions have been included to ensure that new cell construction is adequate to prevent environmental harm.

14 It is necessary to add a condition requiring notification of the likely permanent cessation of the activity so that the Director has sufficient time in which to ensure that appropriate measures are in place to minimise environmental harm arising from the permanent cessation of the activity.

15 Conditions are required to ensure that infrastructure to manage water traversing and discharged from The Land is installed and maintained in order to minimise release of sediment entrained in stormwater.

16 The permit does not contain conditions requiring the management of sediment in the settling ponds.

17 A condition is included to require the maintenance of existing perimeter drains to ensure that their performance is not impeded.

18 A condition is included to require fire-fighting wastewater that is generated from on-site firefighting to be managed to prevent environmental harm from contaminated firewater.

19 The permit does not contain conditions in relation to dealing with environmentally hazardous substances. Environmentally hazardous substances are likely to be stored and handled on The Land and current best practice environmental management necessitates conditions to be included for the storage and handling of environmentally hazardous substances.

20 It is desirable to add a condition to the permit to require the establishment and maintenance of an inventory of environmentally hazardous substances so that the potential environmental harm arising from any escape of such substances into the environment can be properly assessed and/or responded to.

21 The permit has no requirement for the maintenance of a register of controlled wastes deposited on the Land. A condition requiring the maintenance of such a register is included to reduce the risk of environmental harm resulting from the accidental release of these materials.

22 A condition is required to ensure that waste deposition is restricted to specified areas. Uncontrolled deposition of waste may result in environmental harm.

23 The permit does not specify the management of a number of waste types. A condition specifying the management of potentially environmentally hazardous wastes is included to reduce the risk of environmental harm arising from their mismanagement.

24 The permit does not contain a condition requiring compliance with curent requirements for the reporting of waste data. A condition requiring compliance is included to reflect contemporary waste management practices.

25 The permit does not contain a condition requiring the installation of lysimeters within the final capping material for cells. A condition requiring the installation of lysimeters is necessary to measure water flow through the capping material.

26 The permit does not contain a condition that requires signage identifying monitoring points. This signage is necessary to protect monitoring points from damage during operations and to faciliitate their location for monitorig purposes.

27 Monitoring and reporting requirements set out in the permit conditions need to be varied to reflect current best practice environmental management and to require accurate measurement of environmental parameters and their impact upon the receiving environment and to consistently inform the Director of the results of monitoring.

28 It is necessary to add a condition requiring notification in the event of a noise complaint so that the Director can appraise the frequency and characteristics of complaints should any noise complaints be received.

29 It is desirable to add conditions setting noise emission limits, in accordance with the Environment Protection Policy (Noise) 2009.

30 There are no conditions in the permit relating to staff attendance during operating hours. It is necessary to include a requirement for staff to be present during operational hours to manage the deposition of waste and protect against environmental harm.

31 The permit does not contain a condition prescribing the management of tipping faces. In order to prevent environmental harm arising wind-blown debris, the release of odour and the provision of feeding and breeding sites for nuisance animals, it is necessary to include such a condition.

32 The permit does not contain a condition prescribing the management of waste capping to be employed. It is necessary to include such a condition to prevent environmental harm arising from excessive leachate generation, odour production and feeding and breeding of feral animals.

33 The permit does not contain a condition prescribing the management of litter on site. It is necessary to include a condition requiring that litter generation be controlled and loose litter be collected in order to prevent environmental harm arising from the activity.

34 The permit does not include any fencing requirement. Fencing of the activity is required to discourage unauthorised persons or animals from entering the site and coming into contact with waste or any hazardous substance which may give rise to environmental harm.

35 The permit does not contain a condition requiring a fire management plan for the activity. It is necessary to include a condition to require this as landfills contain flammable materials and gases that, if ignited may cause environmental harm.

36 The permit does not contain a condition requiring a weed management plan for the activity. It is necessary to include a condition to require this plan as landfills are point sources of weed infestation and failure to manage any weed outbreak may cause environmental harm..

37 The permit does not contain a condition requiring infrastructure for the management of landfill gas for the activity. It is necessary to include conditions that require this infrastructure as landfills generate greenhouse and flammable gases which must be collected or destroyed to prevent environmental harm arising from the activity.

38 The permit does not contain a condition prohibiting composting on the Land. It is necessary to include a condition prohibiting this activity as the site lacks the infrastructure necessary for the operation and to prevent environmental harm arising from the activity.

39 The permit does not contain a condition prescribing maintenance activities for the settling ponds. It is necessary to include a condition to require these actions to ensure the continuing function of the settling ponds and to prevent environmental harm arising from the activity.

40 The permit does not contain a condition specifying signage for the activity. It is necessary to include a condition to require signage to allow members of the public to report incidents to the person responsible in a timely manner, to prevent environmental harm arising from the activity.

41 The permit does not have a condition requiring the provision of spill kits. It is desirable to add a condition requiring provision, in suitable locations, of spill kits appropriate for the environmental hazardous substances held on The Land for use in any incident to minimise the emissions of a pollutant into the environment.

42 The permit does not contain a condition requiring that leachate be stored in leachate ponds. It is necessary to include a condition to protect groundwater from contamination by leachate.

DEFINITIONS

Unless the contrary appears, words and expressions used in this Notice have the meaning given to them in Schedule 1 of this Notice and in the EMPCA. If there is any inconsistency between a definition in the EMPCA and a definition in this Notice, the EMPCA prevails to the extent of the inconsistency.

REQUIREMENTS

The person responsible for the activity must comply with the varied permit conditions as set out in Schedule 2 of this Notice.

INFORMATION

Attention is drawn to **Schedule 3**, which contains important additional information.

PENALTIES

If a person bound by an environment protection notice contravenes a requirement of the notice, that person is guilty of an offence and is liable on summary conviction to a penalty not exceeding 1000 penalty units in the case of a body corporate or 500 penalty units in any other case (at the time of issuance of this Notice one penalty unit is equal to $154.00).

NOTICE TAKES EFFECT

This notice takes effect on the date on which it is served upon you.

APPEAL RIGHTS

You may appeal to the Appeal Tribunal against this notice, or against any requirement contained in the notice, within 14 days from the date on which the notice is served, by writing to:

The Chairperson
Resource Management and Planning Appeal Tribunal
GPO Box 2036
Hobart TAS 7001

Signed: _____

DIRECTOR, ENVIRONMENT PROTECTION AUTHORITY

Date: 22/4/16

Table Of Contents

Attachments

Schedule 1: Definitions

Aboriginal Relic has the meaning described in section 2(3) of the *Aboriginal Relics Act 1975.*

Activity means any environmentally relevant activity (as defined in Section 3 of EMPCA) to which this document relates, and includes more than one such activity.

Authorized Officer means an authorized officer under section 20 of EMPCA.

Best Practice Environmental Management or **'BPEM'** has the meaning described in Section 4 of EMPCA.

Capping means the placement of one or more layers to form a permanent covering above landfilled waste and includes a reference to such a layer

Classification And Management Of Contaminated Soil For Disposal means the document *Information Bulletin No. 105 Classification and Management of Contaminated Soil for Disposal* published by the Department of Tourism, Arts and the Environment (Revised 2012) and includes any subsequent versions of this document.

Clean Fill means soil, rock, concrete, bituminised pavement or similar non-putrescible and non-water-soluble material that is not contaminated by other waste; and that does not contain contaminant levels exceeding limits for 'fill material' set by the Director in *Classification and Management of Contaminated Soil for Disposal.*

Composting means the controlled microbiological transformation of organic materials under aerobic and thermophilic conditions

Construction means activities associated with the construction phase of the activity, including but not limited to, activities associated with the clearance of vegetation, site works to create a level site, rock breaking, installation of fences and other infrastructure whether on land or in water.

Controlled Waste has the meaning described in Section 3(1) of EMPCA.

Daily Cover means a cover applied to deposited material at the end of the day's activity that is of a standard to prevent animal access to the waste, movement of the waste by wind and release of odour.

Director means the Director, Environment Protection Authority holding office under Section 18 of EMPCA and includes a person authorised in writing by the Director to exercise a power or function on the Director's behalf.

DRP means Decommissioning and Rehabilitation Plan.

Effluent means wastewater discharged from The Land.

EMP means the document *Dulverton Landfill - EMP for Operation from 2004 to 2007* and includes any amendment to or substitution of this document approved in writing by the Director.

EMPCA means the *Environmental Management and Pollution Control Act 1994.*

Environmental Harm and **Material Environmental Harm** and **Serious Environmental Harm** each have the meanings ascribed to them in Section 5 of EMPCA.

Environmental Nuisance and **Pollutant** each have the meanings ascribed to them in Section 3 of EMPCA.

Environmentally Hazardous Material means any substance or mixture of substances of a nature or held in quantities which present a reasonably foreseeable risk of causing serious or material environmental harm if released to the environment and includes fuels, oils, but does not include waste disposed in the landfill.

Final Capping means capping that complies with Section 5.3.3 of the *Landfill Sustainability Guide* (2004).

Inert Waste means waste that does not undergo environmentally significant physical, chemical or biological transformations and has no potentially hazardous content and is not contaminated with non-inert material, such as putrescible waste, and includes clean fill.

Intermediate Cover means a temporary, uncompacted soil cover that has only limited ability to prevent water penetration, designed to be removed and replaced or amended with a final compacted cover at a later date.

Lagoon Means the feature labelled as Leachate Lagoon in Attachment 1 of this Notice.

Landfill means a waste depot as described in Schedule 2 of EMPCA

Landfill Gas means gaseous emissions arising from the decomposition of waste in a landfill

Landfill Sustainability Guide means the document of this title published by the Department of Primary Industries, Water and Environment in September 2004, and includes any subsequent versions of this document.

Leachate means any liquid that is either released by or has percolated through waste.

Liquid Waste means any waste that is in liquid form or is substantially comprised of free liquids or is not spadeable (able to be lifted and moved in heaps with a spade).

Noise Sensitive Premises means residences and residential zones (whether occupied or not), schools, hospitals, caravan parks and similar land uses involving the presence of individual people for extended periods, except in the course of their employment or for recreation.

Permeability means the level of saturated hydraulic conductivity also known as the K-value.

Person Responsible is any person who is or was responsible for the environmentally relevant activity to which this document relates and includes the officers, employees, contractors, joint venture partners and agents of that person, and includes a body corporate.

Planning Authority means the Council(s) for the municipal area(s) in which The Land is situated.

Putrescible Waste means waste containing materials that are capable of rapid biological decay or rotting

Recycling means a set of processes (including biological) for converting recovered materials that would otherwise be disposed of as wastes, into useful materials and/or products

Reporting Period means the 12 months ending on 26 November of each year.

Sanitary Waste means disposable nappy and incontinence waste as well as feminine hygiene sanitary products such as tampons and sanitary pads. Includes bulk sanitary waste generated from public areas or commercial premises.

Sewage Sludge means concentrated solids separated from wastewater during the wastewater treatment process.

Stormwater means water traversing the surface of the land as a result of rainfall.

Tasmanian Noise Measurement Procedures Manual means the Noise Measurement Procedures Manual referred to in regulation 4 of the *Environmental Management and Pollution Control (Miscellaneous Noise) Regulations 2014*.

The Land means the land on which the activity to which this document relates may be carried out, and includes: buildings and other structures permanently fixed to the land, any part of the land covered with water, and any water covering the land. The Land falls within the area defined by:

1 Title Reference 153999/1

2 as further delineated at Attachment 1 "The Land".

Waste has the meaning ascribed to it in Section 3 of EMPCA.

Wastewater means spent or used water (whether from industrial or domestic sources) containing a pollutant and includes stormwater which becomes mixed with wastewater.

Weed means a declared weed as defined in the *Weed Management Act 1999*.

Schedule 2: Conditions

Maximum Quantities

Q1 Regulatory limits

1 The activity must not exceed the following limits (annual fees are derived from these figures):

1.1 80,000 tonnes per year of waste received or likely to be received (excluding materials for recycling)

General

G1 Access to and awareness of conditions and associated documents

A copy of these conditions and any associated documents referred to in these conditions must be held in a location that is known to and accessible to the person responsible for the activity. The person responsible for the activity must ensure that all persons who are responsible for undertaking work on The Land, including contractors and sub-contractors, are familiar with these conditions to the extent relevant to their work.

G2 Incident response

If an incident causing or threatening environmental nuisance, serious environmental harm or material environmental harm from pollution occurs in the course of the activity, then the person responsible for the activity must immediately take all reasonable and practicable action to minimise any adverse environmental effects from the incident.

G3 No changes without approval

1 The following changes, if they may cause or increase the emission of a pollutant which may cause material or serious environmental harm or environmental nuisance, must only take place in relation to the activity if such changes have been approved in writing by the EPA Board following its assessment of an application for a permit under the *Land Use Planning and Approvals Act 1993*, or approved in writing by the Director:

1.1 a change to a process used in the course of carrying out the activity; or

1.2 the construction, installation, alteration or removal of any structure or equipment used in the course of carrying out the activity; or

1.3 a change in the quantity or characteristics of materials used in the course of carrying out the activity.

G4 Change of ownership

If the owner of The Land upon which the activity is carried out changes or is to change, then, as soon as reasonably practicable but no later than 30 days after becoming aware of the change or intended change in the ownership of The Land, the person responsible must notify the Director in writing of the change or intended change of ownership.

G5 Complaints register

1 A public complaints register must be maintained and made available for inspection by an Authorized Officer upon request. The public complaints register must, as a minimum, record the following detail in relation to each complaint received in which it is alleged that environmental harm (including an environmental nuisance) has been caused by the activity:

1.1 the time at which the complaint was received;

1.2 contact details for the complainant (where provided);

1.3 the subject-matter of the complaint;

1.4 any investigations undertaken with regard to the complaint; and

1.5 the manner in which the complaint was managed, including any mitigation measures implemented.

2 Complaint records must be maintained for a period of at least 3 years.

G6 Landfill area

The deposition of waste must be confined to within landfill cells constructed in accordance with CN1, CN2, CN3 and CN4. Documentation which demonstrates compliance with these conditions must be provided to an Authorized Officer upon request.

G7 Permitted waste types

1 Unless otherwise approved by the Director, no wastes may be deposited or stored on The Land other than wastes of the following types:

1.1 General Wastes:

1.1.1 inert waste;

1.1.2 clean fill; and

1.1.3 putrescible waste; and

1.2 The following controlled wastes (subject to Hazardous Substances conditions):

1.2.1 asbestos waste, provided that the waste is appropriately wrapped to avoid the release of asbestos fibres into the atmosphere during handling;

1.2.2 scrap tyres for storage and/or recycling in accordance with these conditions;

1.2.3 spadeable sewage sludge (including grit, silt and screenings), provided that the total and leachable concentration values of the sludge do not exceed those specified for Low Level Contaminated Soil in Classification and Management of Contaminated Soil for Disposal;

1.2.4 animal effluent and residues, provided that the waste is of a spadeable consistency;

1.2.5 sanitary waste;

1.2.6 low level contaminated soil (as defined in *Classification and Management of Contaminated Soil for Disposal*)

1.2.7 batteries (where stored for recycling); and

1.2.8 waste oil (where stored for recycling).

1.3 Where there is doubt concerning the classification of waste as controlled waste, clarification must be sought from the Director.

G8 Non-permitted waste types

1 Unless otherwise approved under these conditions or in writing by the Director, the following waste types must not be accepted for disposal on The Land:

1.1 controlled wastes; and

1.2 liquid waste.

G9 Annual Environmental Review

1 Unless otherwise specified in writing by the Director, a publicly available Annual Environmental Review for the activity must be submitted to the Director each year within three months of the end of the reporting period. Without limitation, each Annual Environmental Review must include the following information:

1.1 a statement by the General Manager, Chief Executive Officer or equivalent for the activity acknowledging the contents of the Annual Environmental Review;

1.2 subject to the *Personal Information Protection Act 2004*, a list of all complaints received from the public during the reporting period concerning actual or potential environmental harm or environmental nuisance caused by the activity and a description of any actions taken as a result of those complaints;

1.3 details of environment-related procedural or process changes that have been implemented during the reporting period;

1.4 a summary of the amounts (tonnes or litres) of both solid and liquid wastes produced and treatment methods implemented during the reporting period. Initiatives or programs planned to avoid, minimise, re-use, or recycle such wastes over the next reporting period should be detailed;

1.5 details of all non-trivial environmental incidents and/or incidents of non compliance with permit or environment protection notice conditions that occurred during the reporting period, and any mitigative or preventative actions that have resulted from such incidents;

1.6 a summary of the monitoring data and record keeping required by these conditions. This information should be presented in graphical form where possible, including comparison with the results of at least the preceding reporting period. Special causes and system changes that have impacted on the parameters monitored must be noted. Explanation of significant deviations between actual results and any predictions made in previous reports must be provided;

1.7 identification of breaches of limits specified in these conditions and significant variations from predicted results contained in any relevant DPEMP or EMP, an explanation of why each identified breach of specified limits or variation from predictions occurred and details of the actions taken in response to each identified breach of limits or variance from predictions;

1.8 a list of any issues, not discussed elsewhere in the report, that must be addressed to improve compliance with these conditions, and the actions that are proposed to address any such issues;

1.9 a summary of fulfilment of environmental commitments made for the reporting period. This summary must include indication of results of the actions implemented and explanation of any failures to achieve such commitments; and

1.10 a summary of any community consultation and communication undertaken during the reporting period.

G10 Change of Responsibility

1 Within 30 days of becoming aware that the person responsible for the activity will cease or has ceased to be responsible for the activity, that person must:

1.1 notify the relevant planning authority in writing of the fact;

1.2 notify the Director in writing of the fact;

1.3 provide the relevant planning authority and the Director with full particulars in writing of any person succeeding him or her as the person responsible; and

1.4 notify any such person of the requirements of any relevant permit, environment protection notice or other environmental management obligations.

G11 Environmental Management Plan (EMP)

1 The Land must be developed and the activity must be carried out and monitored in accordance with the EMP and in accordance with Best Practice Environmental Management, unless otherwise specified in these conditions or contrary to EMPCA.

2 Within 15 months of the date on which these conditions take effect, or by a date otherwise specified in writing by the Director, the EMP must be must be critically reviewed by the person responsible and a revised EMP must be submitted to the Director for approval.

3 The revised EMP must detail prescriptions, consistent with these conditions, for the prevention or mitigation of environmental harm and environmental nuisance arising from the activity.

4 The revised EMP must include specific Plans, as detailed in Attachment 5 'Guidelines for EMP Production' attached to this Notice.

5 When reviewing the EMP, the person responsible must take into account environment related complaints, incidents and changes to the activity since the previous EMP.

6 The EMP must be critically reviewed at 5 yearly intervals and the person responsible must submit a revised EMP in accordance with the above requirements within 5 years of the date on which the Director approved the previous EMP. Such a revised EMP may take the form of a substitute EMP or a written statement that the previous EMP remains substantially current together with any written amendments to the previous EMP.

Atmospheric

A1 Control of dust emissions

Dust emissions from The Land must be controlled to the extent necessary to prevent environmental nuisance beyond the boundary of The Land.

A2 Odour management

The person responsible must institute such odour management measures as are necessary to prevent odours causing environmental nuisance beyond the boundary of The Land.

Construction

CN1 Leachate barrier

1 The landfill must be designed and constructed so that pollution of groundwater or surface water by leachate is prevented.

2 Waste must not be deposited in any new cell on The Land until the engineered liner and leachate collection system for that new cell has been constructed and completed in accordance with these conditions and in accordance with any design specifications approved by the Director.

3 Unless otherwise approved by the Director the landfill liner for any new cell must comply with the prescriptions in Table 3.1 of the *Landfill Sustainability Guide*.

CN2 Leachate collection system

1 A leachate collection system must be designed and constructed to collect all leachate likely to arise from waste deposited on The Land and to prevent it from escaping from The Land into groundwater or surface waters.

2 The landfill leachate system must be designed and constructed to ensure that leachate accumulating on the landfill liner does not exceed a hydraulic head of 0.3 metres above any part of the landfill liner.

CN3 Quality assurance

1 As new cells are constructed, a suitably qualified person with sound knowledge and relevant experience must be present for as much time as is necessary to enable him to properly discharge the responsibilities specified in this condition.

2 The person must supervise liner installation and construction quality control. The person must be directly responsible for:

2.1 The supervision of all technical staff involved;

2.2 'Signing off' of all quality control testing;

2.3 The recording of engineering construction and quality assurance activities; and

2.4 Full testing of clay material (where used) using methods outlined in Australian Standard 1289.5 series (*Methods Of Testing Soils For Engineering Purposes. Soil Compaction and Density Tests*).

3 Quality assurance specifications must be prepared for construction and testing of landfill engineering works, including liners, capping and the leachate collection system. In particular:

3.1 Construction supervision must include Level 1 supervision and field testing by a qualified geotechnician, as per Australian Standard 3798 (*Guidelines On Earth Works For Commercial And Residential Developments*), for Type 1 earthworks;

3.2 The geometry and thickness of clay liners must be measured by a registered surveyor;

3.3 All testing and certification must be performed by a person who is independent of both the person responsible and the construction contractor; and

3.4 A report documenting conformity with the specifications and these conditions must be prepared on completion of the works, and submitted to the Director within 30 days of such completion.

CN4 Commencement of works

Preparatory works for a new cell must not be undertaken unless at least 28 days prior notice in writing has been given to the Director of the intention to do so. The notification must include details of the works that are to be undertaken and the date of commencement of these works.

Decommissioning And Rehabilitation

DC1 Notification of cessation

Within 30 days of becoming aware of any event or decision which is likely to give rise to the permanent cessation of the activity, the person responsible for the activity must notify the Director in writing of that event or decision. The notice must specify the date upon which the activity is expected to cease or has ceased.

DC2 Temporary suspension of activity

1 Within 30 days of becoming aware of any event or decision which is likely to give rise to the temporary suspension of the activity, the person responsible for the activity must notify the Director in writing of that event or decision. The notice must specify the date upon which the activity is expected to suspend or has suspended.

2 During temporary suspension of the activity:

2.1 The Land must be managed and monitored by the person responsible for the activity to ensure that emissions from The Land do not cause serious environmental harm, material environmental harm or environmental nuisance; and

2.2 If required by the Director a Care and Maintenance Plan for the activity must be submitted, by a date specified in writing by the Director, for approval. The person responsible must implement the approved Care and Maintenance Plan, as may be amended from time to time with written approval of the Director.

3 Unless otherwise approved in writing by the Director, if the activity on The Land has substantially ceased for 2 years or more, rehabilitation of The Land must be carried out in accordance with the requirements of these conditions as if the activity has permanently ceased.

DC3 Decommissioning and Rehabilitation Plan

1 At least 12 months prior to the planned cessation of waste deposition or by a date specified in writing by the Director a Decommissioning and Rehabilitation Plan for the activity must be prepared in accordance with the Acceptable Standards provisions of Section 5 of the *Landfill Sustainability Guide* and must specify, without limitation, the following:

- **1.1** the closure date;
- **1.2** redundant site structures and equipment to be removed;
- **1.3** details relating to interim cover and final capping;
- **1.4** details of signs to be erected to inform the public that the site has closed;
- **1.5** perimeter fences to be installed or maintained and other security measures to be implemented to prevent unauthorised access to waste deposition areas on The Land;
- **1.6** post-closure management procedures for the leachate collection and containment system;
- **1.7** post-closure maintenance procedures for stormwater drains and landfill capping;
- **1.8** intended final profile of The Land;
- **1.9** revegetation plans;
- **1.10** proposed post-closure groundwater and surface water monitoring program; and
- **1.11** any other details requested in writing by the Director.

DC4 Implementation of the DRP

Following permanent cessation of the activity, the decommissioning of the activity and the rehabilitation of The Land must be carried out in accordance with the most recent Decommissioning and Rehabilitation Plan (DRP) approved by the Director, as may be amended from time to time with written approval of the Director.

DC5 Progressive Rehabilitation

1 Progressive rehabilitation must be carried out during the operational phase of the activity and in accordance with the following:

- **1.1** revegetation of each cell must commence as soon as is practicable after completion of final capping of the cell; and
- **1.2** rehabilitation must include planting or seeding compatible with the proposed end use of the The Land and protection of the capping.

2 Maintenance and monitoring of rehabilitated areas must continue until the potential for environmental harm resulting from the deposition of waste in those areas has been mitigated in accordance with the Acceptable Standards provisions of Section 5 of the Landfill Sustainability Guide.

Effluent

EF1 Stormwater

1 Polluted stormwater that will be discharged from The Land must be collected and treated prior to discharge to the extent necessary to prevent serious or material environmental harm, or environmental nuisance.

2 Notwithstanding the above, all stormwater that is discharged from The Land must not carry pollutants such as sediment, oil and grease in quantities or concentrations that are likely to degrade the visual quality of any receiving waters outside the Land.

3 All reasonable measures must be implemented to ensure that solids entrained in stormwater are retained on The Land. Such measures may include appropriately sized and maintained sediment settling ponds or detention basins.

4 Stormwater discharged in accordance with this condition must not be directed to sewer without the approval of the operator of the sewerage system.

EF2 Contamination of stormwater

1 In the event that stormwater becomes polluted by leachate, measures must be implemented immediately to prevent pollutants from discharging beyond the boundaries of The Land. Polluted stormwater may be either:

1.1 transferred to the leachate collection system, providing that the leachate dam has adequate capacity; or

1.2 irrigated over the landfill cells; or

1.3 removed to an approved Wastewater Treatment Plant.

EF3 Design and maintenance of settling ponds

1 Sediment settling ponds must be designed and maintained to the satisfaction of the Director and in accordance with the following requirements:

1.1 ponds must be designed to successfully mitigate reasonably foreseeable sediment loss which would result from a 1 in 10 year storm event;

1.2 discharge from ponds must occur via a stable spillway that is not subject to erosion;

1.3 all pond walls must be maintained in such a manner as to prevent erosion; and

1.4 sediment settling ponds must be periodically cleaned out to ensure that the pond design capacity is maintained.

EF4 Retention of sediment

During construction activities all reasonable measures must be implemented to ensure that solids entrained in stormwater traversing the construction site are retained on The Land. Such measures may include provision of strategically located sediment fences, and appropriately sized and maintained sediment settling ponds.

EF5 Fire fighting wastewater

In the event of a fire, potentially contaminated wastewater arising from fire fighting must be treated on The Land to the satisfaction of the Director or removed from the site by a person holding all necessary approvals for such transport.

EF6 Leachate Storage

Unless otherwise approved in writing by the Director, leachate may only be stored in the leachate lagoons.

EF7 Perimeter drains

1 Perimeter cut-off drains must be constructed at strategic locations on The Land to prevent surface run-off from entering the area that is being used for landfilling. All reasonable measures must be implemented to ensure that sediment transported along these drains remains on The Land. Such measures may include provision of strategically located sediment fences, appropriately sized and maintained sediment settling ponds, vegetated swales, detention basins and other measures designed and operated in accordance with the principles of Water Sensitive Urban Design.

2 Drains must have sufficient capacity to contain run-off that could reasonably be expected to arise during a 1 in 10 year rainfall event. Maintenance activities must be undertaken regularly to ensure that this capacity does not diminish.

Hazardous Substances

H1 Storage and handling of hazardous materials

1 Unless otherwise approved in writing by the Director, all environmentally hazardous materials, including all chemicals, fuels, and oils, held on The Land in volumes exceeding 250 litres must be stored and handled in accordance with the following:

1.1 Any storage facility must be contained within a spill collection bund with a net capacity of whichever is the greater of the following:

1.1.1 at least 110% of the combined volume of any interconnected vessels within that bund; or

1.1.2 at least 110% of the volume of the largest storage vessel; or

1.1.3 at least 25% of the total volume of all vessels stored in that spill collection bund; or

1.1.4 the capacity of the largest tank plus the output of any firewater system over a twenty minute period.

1.2 All activities that involve a significant risk of spillages, including the loading and unloading of bulk materials, must take place in a bunded containment area or on a transport vehicle loading apron.

1.3 Bunded containment areas and transport vehicle loading aprons must:

1.3.1 be made of materials that are impervious to any environmentally hazardous material stored within the bund;

1.3.2 be graded or drained to a sump to allow recovery of liquids;

1.3.3 be chemically resistant to the chemicals stored or transferred;

1.3.4 be designed and managed such that any leakage or spillage is contained within the bunded area (including where such leakage emanates vertically higher than the bund wall);

1.3.5 be designed and managed such that the transfer of materials is adequately controlled by valves, pumps and meters and other equipment wherever practical. The equipment must be adequately protected (for example, with bollards) and contained in an area designed to permit recovery of any released chemicals;

1.3.6 be designed such that chemicals which may react dangerously if they come into contact have measures in place to prevent mixing; and

1.3.7 be managed such that the capacity of the bund is maintained at all times (for example, by regular inspections and removal of obstructions).

H2 Hazardous materials (< 250 litres)

1 Unless otherwise approved in writing by the Director, each environmentally hazardous material, including chemicals, fuels and oils, held on The Land in discrete volumes not exceeding 250 litres, but not including discrete volumes of 25 litres or less, must be located within bunded containment areas or spill trays which are designed to contain at least 110% of the volume of the largest container.

2 Bunded containment areas and spill trays must be made of materials that are impervious to any environmentally hazardous materials stored within the bund or spill tray.

H3 Spill kits

Spill kits appropriate for the types and volumes of materials handled on The Land must be kept in appropriate locations to assist with the containment of spilt environmentally hazardous materials.

H4 Inventory of hazardous materials

An inventory must be kept of all environmentally hazardous materials stored and handled on The Land. The inventory must specify the location of storage facilities and the maximum quantities of each environmentally hazardous material likely to be kept in storage and must include material safety data sheets for those environmentally hazardous materials.

H5 Record of controlled wastes

1 A record of all controlled waste deposited at the landfill must be kept and provided to the Director as part of the Annual Environmental Review. This record must include:

1.1 the composition and description of the waste;

1.2 the quantity of controlled waste deposited;

1.3 where possible, the person or organisation which generated the waste.

H6 Sanitary waste

1 Sanitary waste from non-patient areas, commercial premises, aged care facilties, geriatric and maternity wards, child care centres, restaurants, and other public places must be buried immediately under supervision and covered with 300mm of cover material in a designated area of the landfill.

2 Untreated sanitary waste from patient areas and sanitary waste that is saturated with or contains free flowing blood or other body fluids and sanitary waste from those receiving chemotherapy treatment must not be deposited at the landfill.

H7 Lead acid batteries

Used motor vehicle lead acid batteries may only be received at the landfill if stored in a facility that conforms to Australian Standard 3780 (*Storage and Handling Of Corrosive Substances*).

H8 Scrap tyres

1 Scrap tyres must be managed in accordance with the following:

1.1 no more than 500 whole tyres may be stored on The Land unless otherwise approved in writing by the Director. Such storage may only occur as an interim measure while awaiting disposal or removal to another site;

1.2 tyre stockpiles must contain no greater than 200 tyres per stockpile;

1.3 tyre storage must be on a clean, hard stand area that has all weather access;

1.4 no whole tyres except earthmoving tyres may be disposed in the landfill. Where cut tyres are disposed in the landfill the size of the pieces must not exceed 250 mm in any dimension; and

1.5 earthmoving vehicle tyres must be individually buried and must be filled completely, to remove any voids, with an inert and non-degradable material such as soil or sand.

Monitoring

M1 Dealing with samples obtained for monitoring

1 Any sample or measurement required to be obtained under these conditions must be taken and processed in accordance with the following:

1.1 Australian Standards, NATA approved methods, the American Public Health Association Standard Methods for the Analysis of Water and Waste Water or other standard(s) approved in writing by the Director;

1.2 measurement equipment must be maintained and operated in accordance with the manufacturer's specifications;

1.3 samples must be tested in a laboratory accredited by the National Association of Testing Authorities (NATA), or a laboratory approved in writing by the Director, for the specified test;

1.4 results of measurements and analysis of samples and details of methods employed in taking measurements and samples must be retained for at least three years after the date of collection; and

1.5 noise measurements must be undertaken in accordance with the Tasmanian Noise Measurement Procedures Manual.

M2 Reporting of waste tonnage

1 The person responsible must submit to the Director a report on the quantity of waste (measured as tonnes) disposed of at the landfill during each financial year. The report must be submitted by 30 September each year and must, as a minimum, contain details of:

1.1 the total quantity of waste disposed of at the facility, measured as tonnes using a methodology approved by the Director; and

1.2 the method by which the quantity disposed of has been calculated.

M3 Waste data reporting

1 The person responsible must submit to the Director a report on the destination and source of waste received while carrying on the activity as follows:

1.1 By 30 September each year the person responsible must submit to the Director a report detailing the Processing Route, the Primary Source and Secondary Source for all waste received in the preceding financial year. The report must break down the total tonnage disposed using the categories listed in the tables below.

1.2 Processing Route for waste received may be broken down into any of the following categories:

Processing Route
1 Recycling
2 Composting
3 Incineration
4 Landfill
5 Other

1.3 Source of waste received may be broken down into any of the following categories:

Primary Source	Secondary Source
A Municipal	1 Domestic Waste
	2 Other Domestic
	3 Other Council
	X Waste Processing Facility
B Commercial & Industrial	0 Unknown
	X Waste Processing Facility
C Construction & Demolition	0 Unknown
	2 Other Domestic
	3 Other Council
	X Waste Processing Facility

1.4 For the purposes of this condition the following definitions apply:

1.4.1 'Commercial & Industrial' means the component of waste stream originating from wholesale, retail or service establishments and the waste stream arising from industrial processes and manufacturing operations;

1.4.2 'Construction and Demolition' means materials in the waste stream which arise from construction, refurbishment or demolition activities and includes bricks, tiles, concrete, steel, glass, plastics, and soil or naturally occurring excavated material;

1.4.3 'Domestic waste' means all household waste placed on the kerbside for collection by council or council contractors;

1.4.4 'Municipal' means waste arising from domestic premises and Council activities largely associated with servicing urban areas; such as street sweeping, street tree lopping, park and garden maintenance, and litter bins. (For waste data purposes, Municipal waste = Domestic Waste + Other Domestic waste + Other Council waste.)

1.4.5 'Other Council' means waste collected by council or council contractors from the clean-up of municipal parks and gardens, street sweepings, council engineering works, litter bins, and other clean-up resulting from large festivities organised within the council's jurisdiction;

1.4.6 'Other Domestic' means waste collected by council or council contractors from irregular residential clean-ups at the kerbside; and other wastes transported by residents (*e.g.* in cars, vans or utes) directly to a waste management facility;

1.4.7 'Waste Processing Facility' means a facility approved to receive waste and includes a waste transfer station

M4 Leachate Generation Management Plan

Within 18 months of the date on which these conditions take effect, a Leachate Generation Management Plan in accordance with the requirements of Attachment 5 must be submitted to the Director for approval. The person responsible must implement the approved plan as may be amended from time with the written agreement of the Director.

M5 Signage of monitoring points

With the exception of open water sampling, all monitoring points must be clearly marked to indicate the location and name of the monitoring point.

M6 Surface water monitoring

1 Representative samples of surface water must be collected at sampling points numbered S1 to S8 inclusive as identified in Attachment 3 of this Notice.

2 Surface water must be sampled at 3 monthly intervals. If there is no flow at time of sampling then the sample must be collected, as far as is practicable, at the next occurrence of flow.

3 Unless otherwise approved in writing by the Director, the parameters listed in Column 1 of Table 1 must be monitored by sampling and analysis or by field measurement as the case may be.

4 If leachate has become mixed with the surface water, or if required in writing by the Director, additional sampling of the parameters listed in Column 1 of Table 1 must be undertaken in accordance with the requirements of the Director.

5 **Table 1 Surface Water Monitoring**

Column 1
MONITORING PARAMETER
pH
Biological Oxygen Demand (mgO2/L)
Total Suspended Solids (TSS) (mg/L)
Conductivity Ds/m)
Total Nitrogen (mg/L)
Ammonium (ug-N/L)
Oxides of nitrogen (ug-N/L)
Total phosphorus (mg/L)
Dissolved Free Phosphorus (ug - P/L)

M7 Leachate monitoring

1 If required in writing by the Director, results of analyses of leachate water collected as a requirement of any Trade Waste Agreement, including the location of leachate sampling points, must be supplied within 14 days of receipt.

2 If required in writing by the Director, leachate pond water must be sampled for the monitoring parameters listed in Column 1 of Table 2 at the frequency specified by the Director.

3 All metals are to be tested for total content, but also for filtered content on written request of the Director.

4 Table 2 Leachate Monitoring

Column 1
MONITORING PARAMETERS (units)
pH
Conductivity (uS/cm)
Total Suspended Solids (TSS) (mg/L)
Alkalinity (as CaCO3) (mg/L)
Total Nitrogen (mg/L)
Ammonia (ug-N/L)
Nitrate (ug-N/L)
Nitrite (ug-N/L)
Total phosphorus (mg/L)
Orthophosphate (ug-P/L)
Dissolved Organic Carbon (mg/L)
Biochemical Oxygen Demand (mgO2/L)
Dissolved Oxygen (mg/L)
Total CN (as CN) (mg/L)
Total Iron (Fe) (mg/L)
Aluminium (Al) (mg/L)
Copper (Cu) (mg/L)
Zinc (Zn) (mg/L)
Chromium (Cr) (mg/L)
Manganese (Mn) (mg/L)
Nickel (Ni) (mg/L)
Lead (Pb) (mg/L)
Cadmium (Cd) (mg/L)
Chloride (mg/L)
Sulphate (mg/L)
Sodium (Na) (mg/L)
Potassium (K) (mg/L)
Magnesium (Mg) (mg/L)
Arsenic (As) (mg/L)
Mercury (Hg) (mg/L)
Selenium (Se) (mg/L)

Column 1
TPH

M8 Groundwater monitoring

1 Unless otherwise approved in writing by the Director, groundwater bores B2, B6, B7, B8, B11, B12, B14, B15, B16, and B17 identified in Attachment 4 of this Notice, must have the parameters listed in Column 1 of Table 4 monitored in accordance with the frequency specified in Column 2 of Table 4.

2 **Table 4. Groundwater Monitoring**

Column 1	Column 2
MONITORING PARAMETERS	**FREQUENCY**
Bore depth (m)	Once within 6 weeks of the issue date of these conditions, then at 6 monthly intervals
Ground water depth (m)	Once within 6 weeks of the issue date of these conditions, then at 6 monthly intervals
Co ordinates, GDA 94 Zone 55 - Easting, Northing, AHD	Once within 6 weeks of the issue date of these conditions, then at 6 monthly intervals
pH	**Once within 6 weeks of the issue date of these conditions, then at 12 monthly intervals**
Conductivity (uS/cm)	**Once within 6 weeks of the issue date of these conditions, then at 12 monthly intervals**
Total Dissolved Salts (TDS) (mg/L)	Once within 6 weeks of the issue date of these conditions, then at 6 monthly intervals
Redox potential (Eh) (mV)	Once within 6 weeks of the issue date of these conditions, then at 6 monthly intervals
Total Nitrogen(ug-N/L)	Once within 6 weeks of the issue date of these conditions, then at 6 monthly intervals
Ammonia (ug-N/L)	Once within 6 weeks of the issue date of these conditions, then at 6 monthly intervals
Nitrate (ug-N/L)	**Once within 6 weeks of the issue date of these conditions, then at 12 monthly intervals**
Nitrite (ug-N/L)	Once within 6 weeks of the issue date of these conditions, then at 6 monthly intervals
Total phosphorus (mg/L)	Once within 6 weeks of the issue date of these conditions, then at 6 monthly intervals
Orthophosphate (ug-P/L)	Once within 6 weeks of the issue date of these conditions, then at 6 monthly intervals
Dissolved Organic Carbon (mg/L)	Once within 6 weeks of the issue date of these conditions, then at 6 monthly intervals

Column 1	Column 2
Biochemical Oxygen Demand (mO_2/L)	Once within 6 weeks of the issue date of these conditions, then at 6 monthly intervals
Total CN (as CN) (mg/L)	Once within 6 weeks of the issue date of these conditions, then at 6 monthly intervals
Total Iron and dissolved (Fe) (mg/L)	Once within 6 weeks of the issue date of these conditions, then at 6 monthly intervals
Copper (Cu) (mg/L)	**Once within 6 weeks of the issue date of these conditions, then at 12 monthly intervals**
Zinc (Zn) (mg/L)	**Once within 6 weeks of the issue date of these conditions, then at 12 monthly intervals**
Chromium (Cr) (mg/L)	**Once within 6 weeks of the issue date of these conditions, then at 12 monthly intervals**
Manganese (Mn) (mg/L)	**Once within 6 weeks of the issue date of these conditions, then at 12 monthly intervals**
Nickel (Ni) (mg/L)	**Once within 6 weeks of the issue date of these conditions, then at 12 monthly intervals**
Lead (Pb) (mg/L)	**Once within 6 weeks of the issue date of these conditions, then at 12 monthly intervals**
Cadmium (Cd) (mg/L)	**Once within 6 weeks of the issue date of these conditions, then at 12 monthly intervals**
Bromide (ug/L)	Once within 6 weeks of the issue date of these conditions, then at 6 monthly intervals
Iodide (ug/L)	Once within 6 weeks of the issue date of these conditions, then at 6 monthly intervals
Chloride (mg/L)	Once within 6 weeks of the issue date of these conditions, then at 6 monthly intervals
Sulphate (mg/L)	Once within 6 weeks of the issue date of these conditions, then at 6 monthly intervals
Sodium (Na) (mg/L)	Once within 6 weeks of the issue date of these conditions, then at 6 monthly intervals

Column 1	Column 2
Potassium (K) (mg/L)	Once within 6 weeks of the issue date of these conditions, then at 6 monthly intervals
Magnesium (Mg) (mg/L)	Once within 6 weeks of the issue date of these conditions, then at 6 monthly intervals
Arsenic (As) (mg/L)	Once within 6 weeks of the issue date of these conditions, then at 6 monthly intervals
Mercury (Hg) (mg/L)	Once within 6 weeks of the issue date of these conditions, then at 6 monthly intervals
Selenium (Se) (mg/L)	Once within 6 weeks of the issue date of these conditions, then at 6 monthly intervals
TPH	Once within 6 weeks of the issue date of these conditions, then at 6 monthly intervals

Note: Bold denotes annual sampling required

M9 Sampling of groundwater

1 Sampling of all groundwater bores must be recorded on a pre-drafted recording sheet which includes, at least, the following:

1.1 Standing water level;

1.2 Volume of water in litres within the installed casing before purging;

1.3 Volume of water in litres purged before sampling;

1.4 Time required to purge the bore casing before sampling;

1.5 Method of purging the casing water column;

1.6 Flow rate of the purging method used for sampling;

1.7 Time, date and identification code of the water sample; and

1.8 Field primary water quality parameters, including at least, conductivity, pH and temperature.

M10 Groundwater Monitoring program

1 Groundwater investigations must be carried out as follows:

1.1 Any new groundwater monitoring bore(s) must have an approved installation and development record as outlined in these conditions. A hydraulic pump test must be carried out within 7 days after the installation and development of any new bore(s) and the results forwarded to the Director within 7 days of receipt.

1.2 Any new groundwater monitoring bore(s) must be monitored quarterly for one year. Monitoring bore(s) must be monitored for the chemical analytes outlined in Column 1 of Table 4 (Groundwater Monitoring). After this period of initial monitoring, and dependent on results, the range of parameters and freqency of monitoring may be reduced with the Director's approval.

1.3 Groundwater monitoring results and interpretation must be included in the annual environmental review prepared in accordance with these conditions.

M11 Monitoring, record keeping and reporting

Unless otherwise approved in writing by the Director, the results of laboratory analysis of samples collected in the course of monitoring in accordance with these conditions, must be submitted to the Director in the Annual Environmental Review following completion of those analyses by the laboratory.

Noise Control

N1 Noise complaints

In the event that a noise complaint is received in relation to the activity, the complaint must be reported to the Director within 24 hours.

N2 Noise emission limits

1 Noise emissions from the activity when measured at any noise sensitive premises in other ownership and expressed as the equivalent continuous A-weighted sound pressure level must not exceed:

1.1 45 dB(A) between 0800 hours and 1800 hours (Day time); and

1.2 40 dB(A) between 1800 hours and 2200 hours (Evening time); and

1.3 35 dB(A) between 2200 hours and 0800 hours (Night time).

2 Where the combined level of noise from the activity and the normal ambient noise exceeds the noise levels stated above, this condition will not be considered to be breached unless the noise emissions from the activity are audible and exceed the ambient noise levels by at least 5 dB(A).

3 The time interval over which noise levels are averaged must be 10 minutes or an alternative time interval specified in writing by the Director.

4 Measured noise levels must be adjusted for tonality, impulsiveness, modulation and low frequency in accordance with the Tasmanian Noise Measurement Procedures Manual.

5 All methods of measurement must be in accordance with the Tasmanian Noise Measurement Procedures Manual.

Operations

OP1 Site staff

While The Land is open for reception of waste, The Land must be attended by a person or persons whose duties must include supervising the management of waste deposition and ensuring compliance with these conditions.

OP2 Tipping Faces

1 The person responsible may choose to operate separate tipping faces for inert and putrescible materials.

2 Active tipping face(s) for putrescible waste must not exceed 50 metres in combined length, and public access to the tipping face must be kept to a minimum.

3 Unless otherwise approved in writing by the Director, each successive landfilling lift must not exceed 2 metres in height, excluding cover material.

OP3 Waste Capping

1 Machinery capable of spreading, compacting and covering deposited waste must be kept on The Land at all times. A person competent in operating the machinery must be available for an adequate period of time to spread, compact and cover all waste deposited on a daily basis.

2 Daily cover of a standard to prevent animal access to the waste, movement of the waste by wind and the release of odour must be applied to the tipping face at the end of each day of operation.

3 The active tipping area without intermediate cover must not exceed 7,000 square metres. Intermediate cover comprised of, at least, low permeability (hydraulic conductivity $< 1 \times 10^{-7}$ m/s unless otherwise approved by the Director) materials must be applied to a depth of 300 mm to areas in excess of 7,000 square metres except where further waste deposition or final capping will be applied within 90 days.

4 Daily cover and intermediate cover may be provided simultaneously by a single 300mm layer.

5 Unless otherwise approved by the Director, areas to which intermediate cover has been applied must have final capping applied within 2 years unless further waste deposition occurs.

6 Unless otherwise approved by the Director, final capping must comply with Table 5.1 of the *Landfill Sustainability Guide*.

OP4 Litter management

1 Measures must be implemented and maintained throughout the operational life of the landfill to control and monitor the escape of litter from The Land.

2 Litter control measures, for example mobile litter fences of sufficient height to capture airborne litter, must be employed around and close to active landfilling areas. Fences must be regularly cleared of litter in order to maintain their effectiveness (i.e. the fences must remain permeable to wind).

3 Neighbouring properties within a one half kilometre radius of The Land and the access road, and areas of The Land outside active tipping face(s) must be kept clear of windblown litter originating from The Land.

4 The areas specified in the above paragraph must be inspected and all visible litter must be collected on a weekly basis, or more frequently when litter is readily visible on neighbouring properties. A record of the dates of inspections and litter collection activities must be kept. The responsible person must notify the Director if any owner of adjoining land refuses to allow staff to undertake litter removal on their land.

5 Waste compaction and covering must be carried out immediately after waste deposition if wind conditions are such that litter cannot be contained within the active landfill area.

6 During times of gale force wind and at any other time when wind strength is such that, notwithstanding all other litter control measures litter cannot be contained within the boundaries of The Land, the landfill must not receive putrescible waste. The person responsible must keep a record of all such occasions and provide a copy to an Authorized Officer upon request.

OP5 Fencing

1 Within 12 months of the issue of this Notice;

1.1 The current landfill footprint, as identified in Attachment 2 of this Notice, must be contained within a stock-proof fence sufficient to restrict the entry of native animals (excluding birds); and

1.2 The leachate management infrastructure must be contained within a secure fence sufficient to restrict unauthorised access.

OP6 Fire management

1 Fire control measures on The Land must be to the satisfaction of the Tasmania Fire Service (TFS). Correspondence from the TFS indicating the suitability of fire control measures must be submitted to the Director within 6 months of the date on which these conditions take effect.

2 Fires occurring on The Land must be extinguished as soon as possible using all practical means available.

3 The lighting of fires on The Land is not permitted.

4 The person responsible must make all reasonable efforts to prevent unauthorised ignition of green waste stockpiles.

OP7 Weed management

The Land must be kept substantially free of weeds to minimise the risk of weeds being spread through the transport of products from The Land.

OP8 Landfill gas management

1 If waste deposition on The Land, excluding cover material, exceeds 20,000 tonnes per annum in any three consecutive years, landfill gas management infrastructure must be installed progressively as final capping is installed.

2 Following installation of landfill gas management infrastructure landfill gas must either be collected and reused, or flared.

OP9 Landfill Gas Management Infrastructure

1 Unless gas management infrastructure approved in writing by the Director is installed within 12 months of this Notice taking effect, the person responsible must undertake an assessment of landfill gas arising from waste deposited on The Land. The assessment must be completed and results submitted to the Director within 18 months of the date on which these conditions take effect. This assessment must include:

2 Details of the volumes of gas produced;

3 Design details and a program for the installation of a gas recovery systems; and

4 An investigation of potential re-use or destruction options.

OP10 Composting

Composting activities must not occur on The Land without the prior written approval of the Director.

OP11 Lagoon maintenance

1 Floating matter including grass, weeds and rubbish must not be allowed to accumulate on the surface of any ponds or lagoons.

2 All lagoon and pond embankments must be kept in good repair and free of woody vegetation and rubbish.

OP12 Signage

1 Signs must be erected and maintained in legible condition to convey the following important operational and safety information:

1.1 contact staff/organisation and relevant telephone numbers to report any fire or other emergency incident on The Land.

1.2 The hours of operation.

Schedule 3: Information

Legal Obligations

LO1 EMPCA

The activity must be conducted in accordance with the requirements of the *Environmental Management and Pollution Control Act 1994* and Regulations thereunder. The conditions of this document must not be construed as an exemption from any of those requirements.

LO2 Storage and handling of Dangerous Goods, Explosives and dangerous substances

1 The storage, handling and transport of dangerous goods, explosives and dangerous substances must comply with the requirements of relevant State Acts and any regulations thereunder, including:

1.1 *Work Health and Safety Act 2012* and subordinate regulations;

1.2 *Explosives Act 2012* and subordinate regulations; and

1.3 *Dangerous Goods (Road and Rail Transport) Act 2010* and subordinate regulations.

LO3 Aboriginal relics requirements

1 The *Aboriginal Relics Act 1975*, provides legislative protection to Aboriginal heritage sites in Tasmania regardless of site type, condition, size or land tenure. Section 14(1) of the Act states that; Except as otherwise provided in this Act, no person shall, otherwise than in accordance with the terms of a permit granted by the Minister on the recommendation of the Director of National Parks and Wildlife:

1.1 destroy, damage, deface, conceal or otherwise interfere with a relic;

1.2 make a copy or replica of a carving or engraving that is a relic by rubbing, tracing, casting or other means that involve direct contact with the carving or engraving;

1.3 remove a relic from the place where it is found or abandoned;

1.4 sell or offer or expose for sale, exchange, or otherwise dispose of a relic or any other object that so nearly resembles a relic as to be likely to deceive or be capable of being mistaken for a relic;

1.5 take a relic, or permit a relic to be taken, out of this State; or

1.6 cause an excavation to be made or any other work to be carried out on Crown land for the purpose of searching for a relic.

2 If a relic is suspected and/or identified during works then works must cease immediately and the Tasmanian Aboriginal Land and Sea Council and the Aboriginal Heritage Tasmania be contacted for advice before work can continue. In the event that damage to an Aboriginal heritage site is unavoidable a permit under section 14 of the *Aboriginal Relics Act 1975* must be applied for. The Minister may refuse an application for a permit, where the characteristics of the relics are considered to warrant their preservation.

3 Anyone finding an Aboriginal relic is required under section 10 of the Act to report that finding as soon as practicable to the Director of National Parks and Wildlife or an authorized officer under the *Aboriginal Relics Act 1975*. It is sufficient to report the finding of a relic to Aboriginal Heritage Tasmania to fulfil the requirements of section 10 of the Act.

LO4 Change of responsibility

If the person responsible for the activity ceases to be responsible for the activity, they must notify the Director in accordance with Section 45 of the EMPCA.

Other Information

OI1 Notification of incidents under section 32 of EMPCA

Where a person is required by section 32 of EMPCA to notify the Director of the release of a pollutant, the Director can be notified by telephoning 1800 005 171 (a 24-hour emergency telephone number).

Attachment 1. The Land

Dulverton Landfill

Location of Dulverton Landfill in relation to Devonport

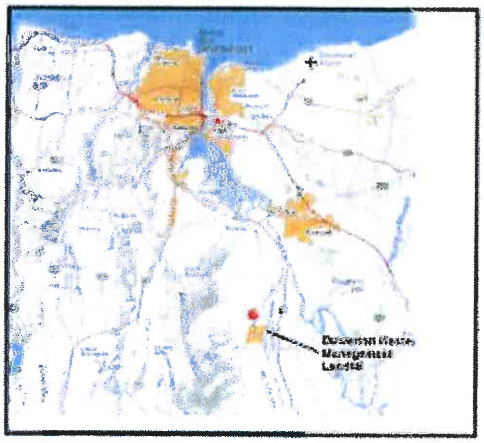
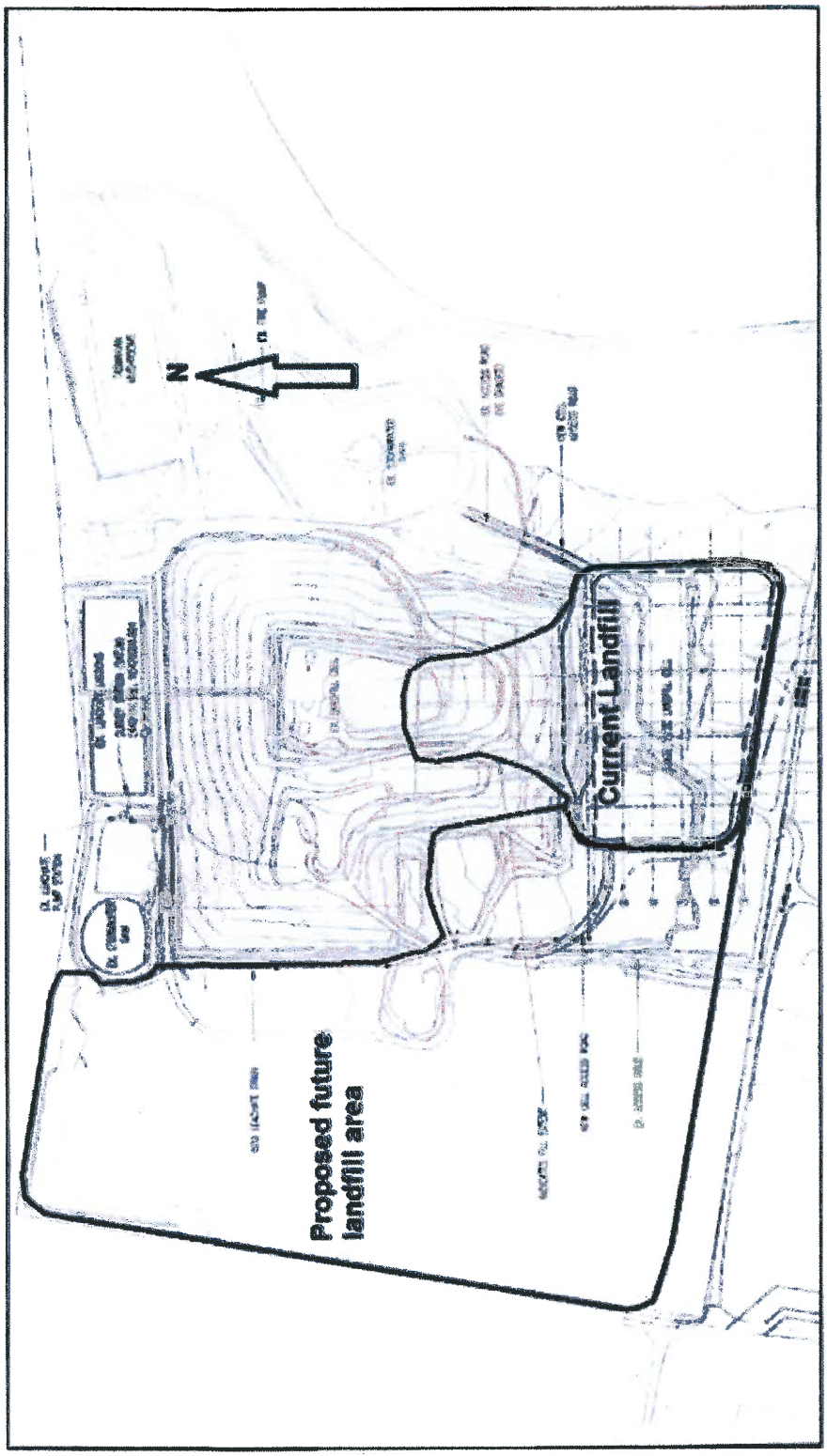


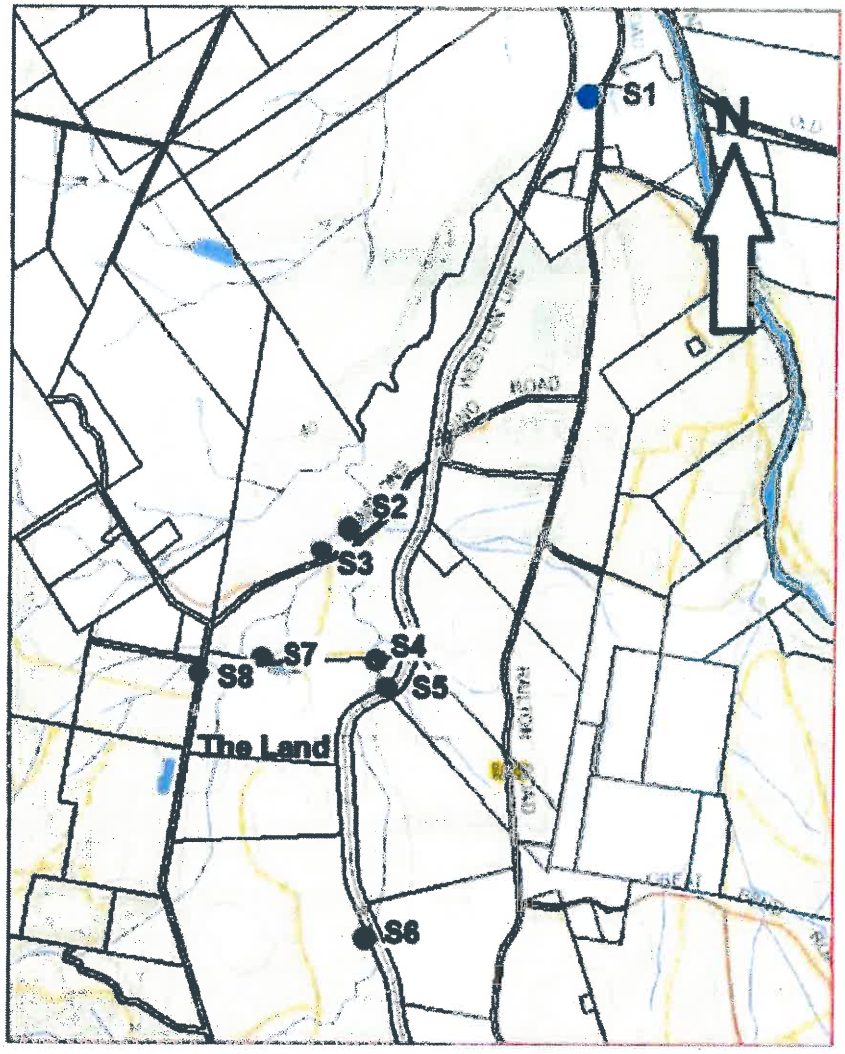
Image from theList

Attachment 2. Landfilling Footprint



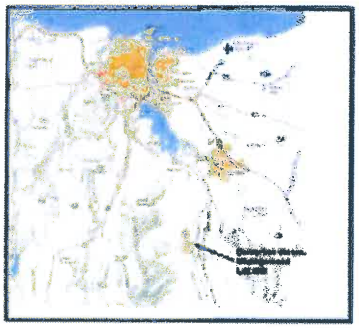
Base Image supplied by DRWMA

Attachment 3. Surface Water Monitoring Points



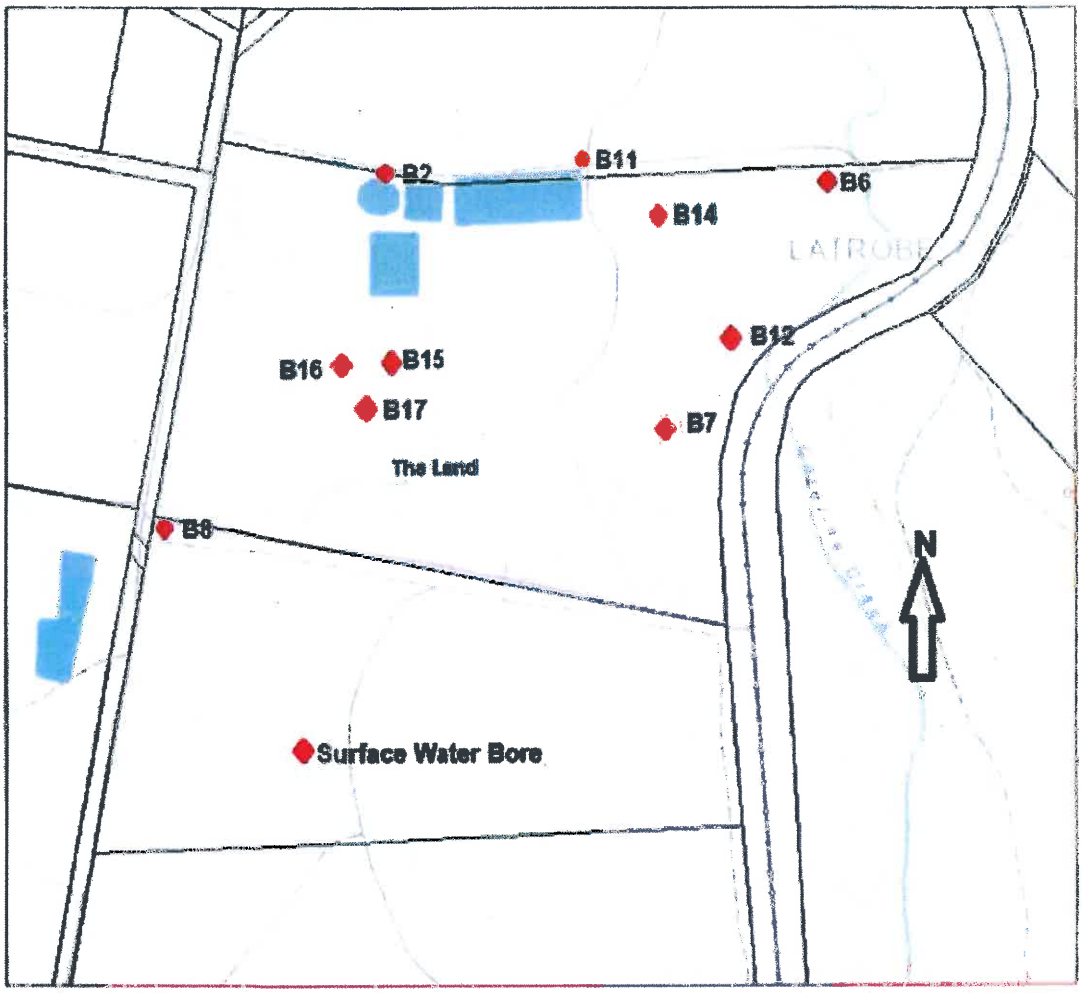
Approximate sampling point locations derived from Fig. 1 of Annual Review Report for Dulverton Landfill 2013-2014.

Location of the Dulverton Landfill in relation to Devonport

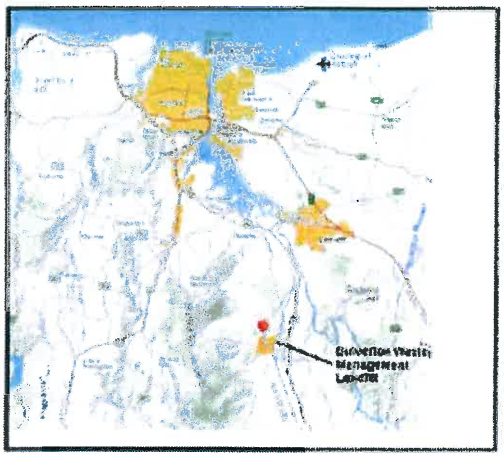


Images from theList

Attachment 4. Groundwater Monitoring Points



Location of the Dulverton Landfill in relation to Devonport



Images from theList

Attachment 5 Guidelines for EMP Production

Dulverton Landfill

The following Plans must be included in the EMP.

The plans may be

- Prepared, submitted and updated as a single item;
- Prepared, submitted and updated as individual plans; or
- Excerpts from existing Management Plans or Management Systems.

They must be prepared in accordance with best practice environmental management and include, but are not limited to the following content:

Site layout Plan

1. The plan must clearly show the actual location of all infrastructure associated with the activity including
    - Waste cells;
    - Buildings;
    - Machinery;
    - Roads;
    - Stockpiles;
    - Ponds, drains and drainage controls; and
    - Monitoring locations.
2. The plan must also depict the current and proposed future extent of disturbance associated with the activity.

Odour Management Plan

The Plan must

1. Identify:
    - All known potential odour sources.
    - Factors that influence the production of odour emissions from these sources.
    - Operational practices to effectively reduce these emissions and to minimise their impacts on neighbours and the local community
2. Include commitments to implement the identified operational practices to effectively reduce these emissions, and a schedule for the implementation of these practices.

Pest Animal Control Plan

The Plan must include

1. Provision to identify all pest animals known to be active on the Land;

2. Strategies designed to limit access or control the activity of the identified animals to putrescible materials on site. This may include control methods for the elimination of targeted species while not affecting non-targeted species; and
3. Actions specifically designed to restrict the ability of pest animals to breed and feed on the land.

Leachate Generation Management Plan

The Plan must:

- Include a description of the physical components of the leachate management system
- Identify all known mechanisms effecting leachate generation
- Identify trends in leachate generation of the activity
- Identify all existing controls to manage leachate generation mechanisms
- Identify operational practices and/or investigations to be implemented to manage leachate generation

dulverton waste management

Environmental Management System (EMS)

ENVIRONMENTAL & GENERAL - CORRECTIVE ACTION REGISTER (CAR)

Abbreviation Key:
AA - Abbie Allen
AW - Ashlee Wallace
DORF - Dulverton Organics Recycling Facility
DWM - Dulverton Waste Management
EMS - Environmental Management System
EPA - Environmental Protection Authority
JW - Jenna Westwood
MG - Mat Greskie
ML - Matthew Layton
MP - Mel Pearce
MS - Marg Smith
OPO - Operations & Project Officer
PO - Purchase Order
SESL - Independent Laboratory
RBD - RBD Electrical & Instrumentation
SP - Site Personnel
SS - Site Supervisor
SWMS - Safe Work Method Statement
TRES - Trees, Research &

Status
TC = Task Complete
IP = In Progress
OH = On Hold

INITIAL ACTION								FURTHER INVESTIGATION				
CAR No.	**DWM CAR ID Form #**	**Generated from**	**Date** *(The non-conformance occurred)*	**Description of Non-conformance/Area for Improvement** *(details of the incident as received by reporting officer)*	**Action Taken** *(Outlines direct action taken to rectify the non-conformance. Staff to include MFID for documents and notes kept).*	**Action By** *(Name of staff member who carried out 'action taken')*	**Action Date** *(Is the date that the staff member carried out the 'action taken' or commenced the action)*	**Root Cause of Problem** *(to be updated following an investigation of the non-conformance and what underlying factors may have contributed to it).*	**Preventative Action** *Measures put in place to prevent the non-conformance from reoccurring).*	**Preventive Action Verified By** *(Name of staff member who carried out 'Root Cause' and 'Preventative Action' investigations)*	**Verification Date** *(Is the date that the staff member has completed the 'Root Cause' and 'Preventative Action' investigations, this cell is to be left blank until both the investigations have been completed)*	**Status**
ENV-646	DWM1036	ML	23/07/2019	Site Supervisor witnessed leachate leaving the mushroom compost site and flowing into the stormwater dam at DWM	The Site Supervisor immediately advised the O&PO who immediately emailed and phoned Mushroom exchange. Mushroom Exchange implemented corrective actions the same day.	ML	23/07/2019	Inadequate leachate capturing capacity for rainfall runoff of liquid used for irrigating their compost.	Mushroom facility is being de-commissioned under the advice of EPA Tasmania.	ML	3/12/2019	TC
ENV-650	DWM1040	ML	30/10/2019	Site Supervisor received a call from a resident complaining of a strong odour (possibly from the landfill) during a severe weather event.	O&PO attended site and did not observe odour, confirmed no turning operations were being undertaken. DWM continue to monitor the situation.	ML	25/06/2019	Possibly the odour has been generated from one of the 2 activities on site. DWM are reviewing all procedures and refining any practices as appropriate.	DWM continue to improve processes and site personnel adhere to EMS procedures to reduce the likelihood of odour.	ML	25/06/2019	TC
ENV-651	DWM1041	ML	13/11/2019	OP&O received a call from a the EPA who received a call from a resident complaining of a strong odour in the vicinity of Youngman's Road.	O&PO rang the complainant to discuss the issue, she felt it was due to dairy waste being accepted.	ML	13/11/2019	Possibly the odour has been generated from one of the 2 activities on site. DWM are reviewing all procedures and refining any practices as appropriate.	DWM continue to improve processes and site personnel adhere to EMS procedures to reduce the likelihood of odour.	ML	13/11/2019	TC
ENV-653	0775	SS	13/11/2019	Site Supervisor received call from a resident in Sherwood Drive complaining of strong odour from landfill area during past week. The odour being more noticeable in the morning and afternoon. There were strong winds during the week that the complaint was made.	SS rang O&PO to discuss the complaint, the day of the complaint the winds were severe and growing medium had just being placed.	ML	13/11/2019	Possibly the odour has been generated from one of the 2 activities on site. DWM are reviewing all procedures and refining any practices as appropriate.	DWM continue to improve processes and site personnel adhere to EMS procedures to reduce the likelihood of odour.	ML	16/11/2019	TC
ENV-654	DWM1042	SS	5/12/2019	Sheets of iron were partially dislodged off a shed in the area DWM lease to a third party.	Third party was immediately contacted to make the situation safe. Repairs are complete.	ML	6/12/2019	Very high wind event.	No obvious defects or issues could be identified.	ML	9/12/2019	TC
ENV-648	DWM1038	ML	9/09/2019	Leachate System Maintenance Identified liner puncture	During routine maintenance performed on the leachate system in the pond closest to the weighbridge, the aerator was removed to rectify a raised section of liner underneath the aerator. Once lifting of the aerator was complete, gas was seen escaping from the underside of the liner, indicating a puncture. As the pond level had been optimised prior to the lift, the remaining liquid was pumped into the second leachate pond and the damaged pond was taken off line. Action to date; *Leachate pond removed from service and leachate transfer complete Thursday 12/09/2019. *Ground water samples taken. *EPA notified, who requested that DWM advise when the pond is back online. *Sludge levels surveyed as 200m3. *Sludge samples taken to inform the level of contaminants in the pond, *desludging commenced December. *Aeramix contacted and will be onsite to undertake the repair. *Down loaded SCADA data to confirm no loss of liquid. Immediate upcoming actions. *Risk assess the removal method of debris. *Both historic and recent lab results for ground water have been received and no issues evident. Follow up samples will be taken in December 2019.	ML	9/09/2019	The damage was caused in part due to contact with the aerator and in part due to poor preparation of the storage earthworks.	The storage floor has now been replaced/reworked and is free from rock/stone which causes liner damage. The storage has a new HDPE liner with an increased thickness. Geofabric has been placed underneath the liner to protect the liner material. It is not intended to reinstall the aerator. A new aeration system will be investigated with the new pump station design.	ML	12/02/2019	TC

ENV-652	DWM1042	ML	3/12/2019	In January, DWM are receiving a new Windrow Turner, this machine will have a number of impacts across the EMS system. This CAR is to recognise there maybe a number of SWMS's, WI's and Procedures which will need to be revised in preparation for the commissioning of the windrow turner.	A new suite of SWMS's, WI's and procedures have been implemented.	ML	10/01/2020	As this is a preventative action there is no root cause.	A new suite of SWMS's, WI's and procedures have been implemented.	MG	15/01/2020	TC
ENV-655	DWM1043	ML	13/12/2019	A load of Fish Blood Water was received and taken to the DORF	The load was removed from the DORF and was deep buried at landfill.	ML	13/12/2019	The carrier didn't make DWM aware the load characteristics had changed.	The site operators were sufficiently informed and confident to notify that a different product had been received. The preventative action was appropriate. The OP&O met with the carrier to ensure that the process was understood.	ML	13/12/2019	TC
ENV-657	DWM0780	SS	22/01/2020	The SS observed the green waste pile at the DORF started smouldering. Pulled Green Waste apart with excavator & placed sprinkler on fire	Using an excavator, the SS immediately broke the pile apart and placed a sprinkler nearby to extinguish the fire. The green waste pile was observed for the following two days, to ensure there wasn't a reigniting. This green waste was received from a local council, DWM contacted the council to make them aware of the incident.	SS	22/01/2020	Combustion of green waste received, which had been sitting at a WTS for approximately 12 months prior to coming to site. It is thought that the green waste had commenced the decomposition process, which generates heat and increases the risk of combustion.	Where possible ensure green waste is placed in smaller piles onsite to reduce the risk of combustion, especially if it has been sitting at the WTS for an extended period of time prior to being delivered to the DORF.	ML	13/02/2020	TC
ENV-643	N/A	EPA Audit	14/03/2019	***Non-Compliance Item M6*** **Irrigation Area Monitoring** - Provide an Irrigation Management Plan to EPA for approval. Include consideration of soil remedial work in relation to elevated soil sodicity, as recommended by SESL Australia (Laboratory report batch #48103A and results summary dated 12/6/18) and ongoing management of soil sodicity. - Comply with condition M6. This includes withholding irrigation when limits (e.g. BOD and electrical conductivity) set down in condition M6 are exceeded.	Correspondence from Darryl Cook of the EPA stated that the issuing of the Environmental Approval 10065/1 in addition to revising the Irrigation Management plan and implementing its actions will be considered to resolve this non-conformance. Environmental Approval 10065/1 was issued on the 23rd of October 2019. The Irrigation Management Plan was revised and approved. The Irrigation Management Plan soil remediation actions have been implemented.	ML	4/06/2020	N/A	With the use of a helicopter, the lime and gypsum were applied in accordance with the agronomy specification.	MG	30/10/2019	TC
ENV-656	DWM0779	SS	25/12/2019	Fire on landfill western face.	SS arrived and provided access to the site consistent with the agreed protocol. The fire was put out the same day. SS contacted OP&O to ensure DWM were aware.	ML	25/12/2020	The fire was likely caused by a battery being incorrectly disposed of. TFS potentially could have had quicker access if they were issued a DWM key.	Landfill fires are largely unavoidable. TFS to continue to be let in by DWM/Site staff. Protocols for accessing site afterhours is agreed to by TFS.	ML	15/06/2020	TC
ENV-658	N/A	Internal Audit	10/02/2020	***Issue No 2019-01 - 4.1-4.4*** Addresses not fully specified on certificate. Requires addition of Devonport office, and street number for Dawson Siding Rd.	02.03.2020 AA emailed external auditor Craig Hobbins, Requesting updated certificate. MFID - 1570085	AA	2/03/2020	Error in initial review of the certificate	Key internal audit findings were listed on the March Team Meeting agenda. The purpose of this action was to discuss and reinforce the need for accurate initial document processing. Updated Certificate RECEIVED, with both site and office details as requested.	AA	21/05/2020	TC
ENV-659	N/A	Internal Audit	10/02/2020	***Issue No 2019-02 - 6.1.1 General*** Certification body logo not updated on Site Induction Video	AA has advised JW to review and update the site induction documents (which is happening now in preparation for Site Inductions in July), to ensure the BSI Logo used. Correct logo has now been applied.	AA	2/03/2020	Reviewing error during auditing body transfer from SAI Global to BSI.	Key internal audit findings were discussed at the March Team Meeting. The purpose of this action was to discuss and reinforce the need for accurate initial document processing.	AA	24/03/2020	TC
ENV-660	N/A	Internal Audit	10/02/2020	***Issue No 2019-03 - 6.1.3 Compliance*** DPIPWE approved arrangement specifies bird deterrent measures to be in place at time of dumping, but DWM have only periodic bird deterrent measures	AA email to Sarah Treweek @ Biosecurity to determine what is classed as a deterrent and/or what type of deterrent is required under our agreement. (details saved in MFID 1570086)	AA	2/03/2020	No clear determination of what a bird deterrent is.	The noisy machinery used in/around the deep burial area act as a Bird Deterrent, this was confirmed as acceptable by Biosecurity. Although this is based on the activity level of birds and the risk level. If bird activity was to increase then further measures would need to be taken.	AA	4/03/2020	TC
ENV-661	N/A	Internal Audit	10/02/2020	***Issue No 2019-04 - 6.2 Env Obligations*** Items listed on DWM's Environmental Objectives Register are not clearly consistent with their Environmental Policy.	AA has conducted an initial review of the register in question (R052) including the procedure for creating new objectives.	AA	7/08/2020	Staff changes have had an impact on the consistency of objectives.	A number of desired updates have been made, including the layout of the register and the procedure for creating new objectives. Next year's objectives are also being drafted closely with the Environmental Policy.	AA	8/04/2020	TC
ENV-662	N/A	Internal Audit	10/02/2020	***Issue No 2019-05 - 7.3 Awareness*** No "acknowledgement of awareness of EMS" on Site Induction Form for Truck Drivers or Contractors.	EMS awareness is delivered on a basis of relevance/need and not a "one size fits all" approach. The site induction booklet (given to ALL inductees) gives an outline of what the EMS is and why we have one, as well as a summary of all high risk activities and their associated environmental hazards onsite.	AA	25/02/2020	N/A	N/A	MP	17/04/2020	TC

ENV-666	N/A	Internal Audit	10/02/2020	***Issue No 2019-09 - 8.1 Operational Planning*** DWMs EMS does not define the type of control or influence that are applied to outsourced processes at site.	Each Contractor is inducted before entry to site, the induction process consists of: Site induction Video, Site Induction form, and signing onto relevant SWMS. Within each induction step, contractors are given EMS awareness in areas relevant to the work they're conducting onsite. SWMS are reviewed by the Site Supervisor and DWM office who can determine to provide further EMS awareness if appropriate, this would typically be for substantial projects/operations onsite or similar.	AA	3/06/2020	N/A	N/A	MG	3/06/2020	TC
ENV-667	N/A	Internal Audit	10/02/2020	*Issue No 2019-10 - 8.1 Operational Planning* The established operating criteria for spray processes could be improved. Evidence: The Contractor use a checklist but not a SOP that can record relative humidity & temperature, which can be used to ensure that environmental requirements are met.	Spraying onsite is only completed by certified personnel, which is now done mainly by air, (in accordance with the Australian Code of Practice for Aerial Spraying) but is sometimes carried out by site staff on the ground as well. Temperature and Humidity are not "tested", before spraying as there isn't currently a means to test humidity onsite but personnel have been able to effectively judge if the weather is suitable for spraying and act accordingly.	AA	3/06/2020	N/A	N/A	MG	3/06/2020	TC
ENV-668	N/A	Internal Audit	10/02/2020	***Issue No 2019-11 - 8.2 Emergency*** Missing Safety Data Sheets (SDS) for chemicals stored on site.	The Hazardous Substances Register (R010) and all SDS's on it have been reviewed, the register and current SDS's have been printed and bound and placed in 3 signed areas onsite, The DORF Container, the Green Shed, and the Site Office.	AA	3/03/2020	No clear measures taken to identify new substances introduced onsite.	The Monthly Environmental Checklist has been updated to include a reminder for advising DWM of any new hazardous substances used or kept onsite.	AA	17/03/2020	TC
ENV-669	DWM1044	JW	12/03/2020	Latrobe Council called to record an odour complaint on behalf of a resident from Bucks Road. The resident advised that the odour is so strong it takes your breath away.	O&PO contacted resident and the EPA (Tim Hamilton) and a site investigation was undertaken.	ML	24/03/2020	*It should be noted there was an administrative delay in the O&PO being notified of these complaints due to a staff misunderstanding. This has now been rectified* Site investigation determined that a significant number of windrows were turned on the day of the complaint which may have contributed to the odour. The cold still weather conditions may have also played a role.	Interim action put in place on site, to only turn three windrows per day. WI151 has been revised to include restriction for turning compost similar to the amount of compost turned before the introduction of the windrow turner.	ML	14/04/2020	TC
ENV-670	DWM1045	JW	18/03/2020	A resident called stating that there has been an increase in odour over the last four months. She explained that it is so strong that they are unable to open their windows due to the smell. She believes the smell has been stronger and is lingering longer than in the past. She runs a small business from home as a wedding venue and it is affecting her business as potential customers are put off by the smell.	O&PO contacted resident and the EPA (Tim Hamilton) and a site investigation was undertaken.	ML	24/03/2020	*It should be noted there was an administrative delay in the O&PO being notified of these complaints due to a staff misunderstanding. This has now been rectified* Site investigation determined that an significant number of windrows were turned on the day of the complaint which may have contributed to the odour. The cold still weather conditions may have also played a role.	Interim action put in place on site, to only turn three windrows per day. WI151 has been revised to include restriction for turning compost similar to the amount of compost turned before the introduction of the windrow turner.	ML	14/04/2020	TC
ENV-671	DWM1046	AW	24/03/2020	Latrobe Council (LC) has emailed through details of a complaint received into LC from a resident in the Castle Drive area describing the odour as 'like a wallaby had died at his back door'	O&PO contacted residences effected and EPA (Tim Hamilton), site investigation undertaken, and restriction put in place on volume of compost being turned.	ML	24/03/2020	*It should be noted there was an administrative delay in the O&PO being notified of these complaints due to a staff misunderstanding. This has now been rectified* Site investigation determined that an significant number of windrows were turned on the day of the complaint which may have contributed to the odour. The cold still weather conditions may have also played a role.	Interim action put in place on site, to only turn three windrows per day. WI151 has been revised to include restriction for turning compost similar to the amount of compost turned before the introduction of the windrow turner.	ML	14/04/2020	TC
ENV-672	DWM1048	AW	8/04/2020	Odour complaint received from a resident located at Railton Road. The resident stated that the "tip is the worst it's ever smelt".	O&PO contacted the complainant to discuss and also spoke to the SS. There was nothing out of the ordinary occurring onsite.	ML	8/04/2020	Possibly the odour has been generated from one of the 2 activities on site (landfill or DORF). DWM are reviewing all procedures and refining any practices as appropriate.	DWM continue to improve processes and site personnel adhere to EMS procedures to reduce the likelihood of odour.	ML	14/04/2020	TC
ENV-673	DWM1049	SS	14/04/2020	Site was broken into. The power to the shed was turned off and a socket set screw driver set was taken. The side panel of the scissor lift that is being used to pull down the shed at the Mushroom Facility was damaged.	Doors on the shed were been replaced to assist with security.	ML	20/04/2020	Vandalism and stealing occurred by unknown person(s). Access was gained through damaging the boundary fence and shed doors.	A camera was installed facing the shed to attempt to identify the offender should another break-in occur.	ML	20/04/2020	TC

ENV-664	N/A	Internal Audit	10/02/2020	***Issue No 2019-07 - 7.4 Communication*** Contact list in site office is not up to date.	Key internal audit findings were discussed at the March Team Meeting. The purpose of this action is for further discussion on the best way to ensure site staff have updated documents onsite when they have been given the updated version. When a document is updated, it is sent to the SS, who then needs to confirm receipt of it, and that the use of any previous versions has ceased.	AA	24/03/2020	Error in the updating process, all updated documents should be sent to the SS for him to update within the site office.	An action has been added to the CTR, to physically review documents in the site office to make sure they are current during the months February and August. Documents Check occurred on 03/06/2020 (Late due to Covid-19), a number of documents needed updating in the site office, this was confirmed completed by SS later they day.	AA	3/06/2020	TC
ENV-665	N/A	Internal Audit	10/02/2020	***Issue no 2019-08 - 7.5 Documented Info*** Site documents require scrutiny, as some irregularities in information is occurring (e.g.. SS not on site between the 4th - 10th of November, but Toolbox Meeting records 6th to the 8th of November show SS conducted the meetings).	Met with SS and 2IC (who covers when the SS is absent) onsite on 04.03.2020 to discuss Internal Audit findings, during this meeting the date issues were discussed and the need for consistent and accurate documented information was stressed. This was positively received by both and they agreed to ensure consistency in the future.	AA	4/03/2020	No system in place to monitor that the expected documents are received from site. This is potentially exacerbated by the SS occasionally attending site when he is on leave to conduct pre work meetings.	The Admin Team now have a checklist of documents that should be received each Monday or after the end of the Month from site. If these are not received by the afternoon on that day, Admin will request them. Once they are received an initial review is conducted to ensure the document is whole and accurate to their knowledge. A second review is completed by the relevant staff member who the document relates to. The SS has also been advised that a hardcopy version of any document that is scanned to DWM also needs to be sent into the Office for the 2 step review process.	AA	20/04/2020	TC
ENV-674	DWM1050	AW	29/04/2020	A resident called with concerns about the odour this morning, stating that it has gone all through their house.	SS spoke to the resident and advised that DWM were investigating.	ML	29/04/2020	Possibly the odour has been generated from one of the 2 activities on site (landfill or DORF). DWM are reviewing all procedures and refining any practices as appropriate.	DWM continue to improve processes and site personnel adhere to EMS procedures to reduce the likelihood of odour. The particular incident was likely contributed to the atmospheric conditions on the night of the complaint.	ML	1/06/2020	TC
ENV-675	DWM1051	AW	5/05/2020	A resident called with an odour complaint stating that the smell has gotten progressively worse and that it smells like a septic.	O&PO spoke to the resident and SS. There was nothing out of the ordinary occurring onsite.	ML	5/05/2020	Possibly the odour has been generated from one of the 2 activities on site (landfill or DORF). DWM are reviewing all procedures and refining any practices as appropriate.	DWM continue to improve processes and site personnel adhere to EMS procedures to reduce the likelihood of odour. After discussion with industry SWME's the frequency of Windrow Turning was increased to reduce the opportunity for Anerobic conditions.	ML	1/06/2020	TC
ENV-628	DWM1026	ML	30/04/2019	Weighbridge reaching capacity	Review the opportunity to extend or replace the weighbridge	ML	3/05/2019	The current fleet of Trucks in Tasmania is changing, with larger trucks and truck trailers becoming more common resulting in the current weighbridge being too short in some cases. Recently this has been an issue with the trucks carting contaminated soil.	The new weighbridge has been installed. Walkways have been designed and constructed to ensure an improved level of safety, which are also now installed.	ML	4/08/2020	TC
ENV-636	N/A	BSI External Audit	4/06/2019	*Opportunity For Improvement* The Compliance Register could be reviewed to ensure information regarding Tasmanian weights and measures requirements and chain of responsibility are detailed.	Assignment sent to AA to investigate requirements and was discussed at the June team meeting.	AA	11/06/2019	N/A - this is an opportunity for improvement.	Chain of Responsibility details and relevant points of the Tasmanian Trade Measurement (Weighbridge) Regulations 2000 have been added to the Compliance Register.	AA	3/08/2020	TC
ENV-676	DWM1052	MG	1/07/2020	A resident has reported an odour complaint stating the odour has been bad for approx. the last 3 days but was particularly bad between 8-9pm Tues 30th June	At the time of the odour the site had been close for some hours with no activity at that time. DWM spoke to complainant to understand their concerns Atmospheric Observations were: No wind, 7 degrees overnight and fog was held in the Railton Valley.	ML	1/07/2020	Possibly the odour has been generated from one of the 2 activities on site. DWM are reviewing all procedures and refining any practices as appropriate.	DWM continue to improve processes and site personnel adhere to EMS procedures to reduce the likelihood of odour.	ML	1/07/2020	TC
ENV-677	DWM1053	MP	9/07/2020	A resident has reported an odour complaint stating that the odour is really bad this morning, they can hardly breathe and that this is an ongoing issue to which they are anxious to get a resolution	The Odour occurred early hours of the morning, before the site was operational. Complainant was clearly upset, and requested they not be contacted. Atmospheric observations: no wind, 4 degrees overnight and fog was held in the Railton Valley. Complaint received directly by DWM Weather Forecast reviewed.	ML	9/07/2020	Possibly the odour has been generated from one of the 2 activities on site. DWM are reviewing all procedures and refining any practices as appropriate.	DWM continue to improve processes and site personnel adhere to EMS procedures to reduce the likelihood of odour.	ML	9/07/2020	TC
ENV-678	DWM1054	ML	21/07/2020	During a site visit of the compost Facility 20/07/2020, it was observed that elements of the revised Work Instruction (WI) W151 hadn't been implemented by DORF staff.	Raised the concerns at a Site Meeting, documentation sent to the site contractor. The investigation identified the Work Instruction had been implemented, however three elements of the Work Instruction weren't fully understood.	ML	21/07/2020	A lack of operator support from the site contractor leadership team during staff changes.	CEO & OP&O meet with the site contractor to stress the need for higher level support, especially when the Site Supervisor is away and this was acknowledged by the site contractor who advised that there would be a higher presence of leadership staff in the Site Supervisor's absence.	ML	4/08/2020	TC

ENV-679	DWM1055	AW	27/07/2020	A resident called regarding odour, the resident had left a bedroom window open and the smell had gone right through their house. This has been an ongoing issue for this resident	At the time of the complaint the windrow turner was operating, there was minimal wind and very cold conditions. Both the Site Supervisor and DWM office spoke to the complainant and she requested no further action. The Site Supervisor stopped turning this day to assist in dissipation of any steam.	ML	21/07/2020	Possibly the odour has been generated from one of the 2 activities on site. DWM are reviewing all procedures and refining any practices as appropriate.	DWM continue to improve processes and site personnel adhere to EMS procedures to reduce the likelihood of odour.	ML	21/07/2020	TC
ENV-680	N/A	BSI External Audit	11/06/2020	***Opportunity for Improvement*** Record keeping from management review / meeting processes could be improved, particularly in respect to detailing outcomes and results arising from agenda items.	The BSI Audit report findings were discussed at the next team meeting	AA	16/06/2020	N/A this is an opportunity for improvement.	An item has been added to the September tab of the CTR to set the management review meeting date, and an item updated in October tab to include the minutes template reference.	AA	12/08/2020	TC
ENV-681	DWM1056	ML	11/08/2020	During a walk around site a green Algae was identified on the top of the Stormwater pond. It is noted there is no risk of overflow to storm water.	Site Supervisor to advise staff to use face shield when using the water if required. GHD came to site and took Algae samples to identify the Algae and whether there are any toxicity concerns and to advise of next steps.	ML	11/08/2020	Cause not identified.	A third party sampled water and results indicate no further action required. Algae is not toxic.	ML	8/09/2020	TC
ENV-683	DWM1058	JW	31/08/2020	Nearby resident called (31/08 and 03/09) to advise they were experiencing an influx of flies.	Increased day cover was placed and active area decreased.	ML	4/09/2020	Excessive active landfilling area and season likely to be contributors.	O&PO and contractor to regularly monitor active landfilling area and plan to minimise it.	ML	15/10/2020	TC
ENV-663	N/A	Internal Audit by TRES	10/02/2020	**Issue No 2019-06 - 7.3 Awareness*** The site contractor has no sufficient system to confirm which employees require induction.	Key internal audit findings were discussed at the March Team Meeting. The purpose of this action is for further discussion on the best way for site to be able to manage induction records. At this Team meeting, it was decided DWM would enter into discussion with the site contractor regarding whether a Key Card entry to site might assist with this, AA is following up these discussions. AA followed up with ML, who indicated that key swipe entry for inductees was favourable with the site contractor but obviously to be implemented when COVID -19 restrictions no longer apply. AA is looking into options ready for when we can begin.	AA	25/05/2020	It appears that the current systems in place (both the site contractors & DWM's) did not capture the induction of a site contractor employee (who the SS insists was inducted but this is not supported by paperwork).	A review of the current system for obtaining paperwork from site is being undertaken. There is a 2 step checking process in place (receiving both a scanned and hard copy of the document), however it seems that not all hardcopies of documents were being received by DWM. The need for DWM to receive all hard copies of documents has been discussed with the site staff, which is now occurring. Investigations are underway for the possibility of a swipe card entry system. Suitable options will be evaluated and this task will be TC'd if/once the chosen option has been implemented.	AA/ML	25/05/2020	TC
ENV-682	DWM1057	JW	21/08/2020	Customer called concerned that DWM compost is not "organic" due to the inclusion of Biosolids.	O&PO spoke to the complainant at length and the only outcome advised was that we would review the new Biosolids Guidelines (2020). The laboratory who tests DWM's compost, have been requested to review the changes in the Biosolids Guidelines and to advise whether there is any action required by DWM.	ML	20/10/2020	Some customers believe that bio-solids use in compost do not equate with being organic. The DWM website is clear that Biosolids are included in our compost.	DWM marketing material is appropriate - no action required. DWM met with EPA RE New Biosolids guidelines, which is an ongoing discussion point. DWM are awaiting advice from the EPA as to clarify the classification.	MP	20/10/2020	TC
ENV-684	0788	SS	7/11/2020	Smoke was observed to be coming from Green Waste pile.	Site Supervisor separated into smaller piles and wet down with water. A sprinkler was set up to keep wet over the weekend.	ML	7/11/2020	Internal combustion within the green waste pile.	No action required, this was observed during a daily inspection of the area prior to the plant opening in the morning. Personnel acted appropriately and contained the incident.	ML	2/12/2020	TC
ENV-685	N/A	ML	2/12/2020	Since commissioning B1 South, landfill leachate has become slightly odorous. Likely due to fresh waste being deposited.	ML has requested pricing to be provided to commission a pump, to be used to empty the lagoon. ML has engaged a third party to conduct leachate testing.	ML	2/12/2020	Unknown, it may be biological or algae based.	Commissioned pump that pumps from the base of the leachate pond and pumped all the leachate from the pond. Will monitor for future occurrences.	ML	27/01/2021	TC
ENV-686	1062	ML	7/12/2020	Due to the new tipping plate design, a third tipping plate is required to ensure consistency across the site. This will assist in standardising set up requirements	Ordering the manufacture of a Third Tipping plate.	ML	7/12/2020	DWM recognised the opportunity for improvement.	Tipping plate has been received, and installed.	ML	27/01/2021	TC
ENV-690	N/A	TRES Internal Audit	17/01/2021	**Moderate Risk Identified - Monitoring, Measurement, Analysis & Evaluation:** *The monitoring, measurement, analysis and evaluation of some outsourced processes might not be sufficient to capture errors that could impact environmental performance. Evidence: helicopters chemical application form (CAF) No TH 16251 dated 27-Jun-2020 has errors in total chemical used, with totals equating to 18.0 and not 16.8 hectares treated at the listed application rates for all four chemicals [Stinger, Clomac, Pulse, Crucial], thereby indicating possible recording errors, excessive application or waste.*	Requested and Reviewed copies of CAF's.	ML/AA	2/02/2021	CAF showed there were more chemicals loaded than the spraying ratio per Ha.	Workflow has been updated to require CAF's review on each supplier invoice, and discrepancies to be followed up. The Contractor has confirmed, the remaining chemicals on CAF #16251 were disposed of after spraying as stated on the CAF.	ML/AA	15/02/2021	TC

ENV-687	0793	SS	8/01/2021	Green shed was broken into and the internal door to the tool storage section damaged by the intruders. The fuel truck was tampered with resulting in missing tool pouch and other small things were stolen.	Incidents reported to the police, insurance and DWM. Inventory of items stolen was created.	ML	8/01/2021	Persons unknown gained access to the site through breaking into the locked gates.	Security Cameras have now been installed across the site. For information only: Tas Police advised they have made some progress in the case and would advise further if they are able to identify any of stolen DWM items.	ML	12/04/2021	TC
ENV-688	0794	SS	15/01/2021	SS arrived to find the boom gate lock forcefully opened and the office and crib room broken into. There were smashed windows and doors were open. Power tools, chainsaw, hose reel and air conditioner stolen.	Incidents reported to the police, insurance and DWM. Inventory of items stolen was created.	ML	15/01/2021	Persons unknown gained access to the site through breaking into the locked gates.	Security Cameras have now been installed across the site. For information only: Tas Police advised they have made some progress in the case and would advise further if they are able to identify any of stolen DWM items.	ML	12/04/2021	TC
ENV-693	0800	SS	19/03/2021	Odour Complaint received via the Site Supervisor, from a Railton Road Neighbour.	The Site Supervisor spoke with the neighbour, who advised it's the first time in a long time he has had any issues with odour at his property. The Site Supervisor confirmed with DWM that there did appear to be some odour onsite although the source was difficult to identify.	SS/AA	19/03/2021	It is believed a combination of factors, including the conditions on the day, contributed to the potential for odour to leave the site.	AA and the Site Supervisor completed a review of the circumstances to recognise and avoid this combination of factors in the future.	44274	AA	TC
ENV-694	N/a	ML	21/02/2021	A Director raised an ABC article regarding compost being contaminated with herbicides in Victoria. DWM conducted a due-diligence check to understand potential risk to DWM.	ML spoke to SESL in regards to the Victorian incident seeking further detail, SESL indicated the risk was likely low, but samples for testing have been sent to SESL.	ML	22/02/2021	The facility in Victoria, received a volume of feedstock contaminated with Herbicide.	DWM Tested the current stockpile for Herbicide, and pesticide and all results were clear at identifiable levels. This was added to the CTR for validation annually.	ML	24.03.2021	TC
ENV-695	N/a	ML	21/02/2021	A stakeholder raised concern with DWM regarding the amount of Hydrocarbons in Biosolids, being retained by compost. DWM conducted a due-diligence check to understand the potential risk to DWM	ML spoke to SESL regarding the concerns, further detail was provided, that when this test is carried out the component measures is carbon. SESL's initial thoughts were that the risk was extremely low.	ML	22/02/2021	Hydrocarbons, originate from the sewage treatment process, and associated facilities	DWM tested the current stockpile for hydrocarbons, and the levels returned were below 800 mg/kg. For context, the EPA guide for soil contamination requires a result of <1,000 mg/kg for soil to be classified as clean fill.	ML	24.03.2021	TC
ENV-696	0503	SS	7/04/2021	When processing, the green waste loader operator found a steel chair, hose reel, scrap steel & lots more rubbish in bucket of waste.	Site personnel are manually removing contamination from the green waste as its used.	SS	7/04/2021	After investigating, it was found the contamination entered the waste after it was mulched while still onsite at the Waste Transfer Station.	MP contacted the Waste Transfer Station to advise them of the contamination, and requested they be more conscious of this issue in the future. Site personnel are aware of the issue and are monitoring the incoming wastes for contamination.	MP	14/04/2021	TC
ENV-698	0505	SS	12/04/2021	There was a small fire on Landfill after the operator ran over something and it ignited.	The operator saw the smoke and put it out immediately by spreading and moving the waste to the edge of the landfill.	SS	12/04/2021	The machine drove over something in the landfill that sparked and caught alight.	It is not possible to completely prevent this from occurring due to the varied nature of the waste disposed in the landfill. Machinery operators will remove waste, such as batteries, if they are noticed before compacting.	AA	14/04/2021	TC
ENV-699	DWM-1063	AA	13/04/2021	The Site Supervisor has reported to AA that over a number of loads delivered today from DCC WTS, around 40 tyres have been disposed of in the Landfill.	MP contacted DCC and advised them we will not be able to accept their waste if it continues to be contaminated with tyres. DCC was asked to investigate and provide a response to DWM, at this stage it appears to be an isolated incident.	MP/AA	13/04/2021	Operators at the waste transfer station (WTS) not preventing and/or removing tyres incorrectly disposed of as general waste. This issue was not evident to the landfill operator until the bin contents were spread across the landfill by the compactor.	It is not possible to completely prevent this from occurring due to the varied nature of the waste disposed in the landfill. The DCC WTS Supervisor has raised this issue with WTS staff and provided a refresher on what can and cannot be placed into general waste and spotting suspect customers at the gate. DCC advised that they cannot pinpoint who or when the tyres came into the WTS and suspect it was a one off incident.	AA	14/04/2021	TC
ENV-689	0795	SS	18/01/2021	The Site Supervisor arrived to find burnout marks on road leading to site. Checked the security camera mounted in a tree and discovered the camera was missing	Incident reported to DWM by the Site Supervisor.	ML	18/01/2021	Persons unknown removed camera, possibly it wasn't well camouflaged and was spotted.	The camera was covered under DWM's insurance and a claim has been completed. Security cameras have been installed across the site. One is reserved for 'roaming' and setup where and as assessed it will be of use.	ML	11/06/2021	TC
ENV-691	N/A	TRES Internal Audit	17/01/2021	**Moderate Risk/Opportunity For Improvement Identified- Management Review:** *The management review minutes contain no obvious information on environmental performance trends in monitoring and measuring results, fulfilment of compliance obligations and results of audits. Evidence: Minutes dated 21-Oct-2020 at item 3 are "results of Internal Audits in 2020" yet these do not give results of past audit but indicate future audit and certification body audit is only mentioned as "took place" without any reference to results. There is absolutely no mention of monitoring and measuring results plus fulfilment of compliance obligations. The organisation could ask how figures were calculated.*	AO(E) has sought further clarification from the auditor on this item. As a consequence of that discussion, DWM believe that the management review is fit for purpose for an organisation of our scale. This is reinforced by the external auditor who has not had any issue with the conduct of the management review meeting.	AA	20/04/2021	Opportunity for improvement was recognised by the internal auditor.	A footnote has been developed for the management review meeting minutes template detailing what we already do with respect to ongoing review of the EMS (i.e. CAR list reviews and reporting, cyclic review of EMS documents like Policies, Procedures and Work Instructions, and routine review of the Objectives and Targets register etc.).	AA	9/06/2021	TC

ENV-697	0504	SS	12/04/2021	The Site Supervisor found two locks were removed from the back boom gate on the main entrance.	The Site Supervisor ordered and installed two new locks for the boom gate.	SS	12/04/2021	DWM cannot identify how the locks were removed, it is assumed to be by those wishing to trespass onsite.	The new locks have arrived onsite and are now in use.	SS	9/06/2021	TC
ENV-700	0507	SS	20/04/2021	The loader operator at the DORF noticed smoke coming from green waste pile.	Operator successfully followed DWM fire extinguishing procedures and the incident was quickly resolved.	SS	20/04/2021	Internal combustion within the green waste pile.	DWM procedures were reviewed and deemed sufficient. The concern was raised during the daily inspection of the area. Personnel acted appropriately and contained the incident.	ML	9/06/2021	TC
ENV-701	DWM1064	ML	21.04.2021	On the road travelling to site, OP&O found that a customer truck had left the road and was sitting in the drain with 2 wheels off the ground. The customer's management team were already on the scene.	DWM assisted with the incident through; using a DWM vehicle for traffic management; securing the truck with a wheel loader and , using an excavator to remove truck return truck to the road.	ML	21/04/2021	There was no evidence of road damage or hazards to have caused this incident. A combination of driver error and weather conditions was determined as the cause.	DWM/Contractor staff provided appropriate assistance to the customer and ensured safe access to and from the DWM site for others. The OP&O discussed the incident with the customers management team at the time of the event and they completed their own incident investigation. This event did not occur onsite and there is no further action required.	ML	9/06/2021	TC
ENV-703	N/A	BDO IT & Finance Systems Internal Audit Report	06.05.2021	**M-Files Backups** - Daily backups are all kept in one location. External backup / alternate location options are recommended.	Mfiles has been transferred to a cloud-based server version. The platform is designed to ensure that regular backup and contingencies are automated. Confirmation that this process is underway has been received.	MB	11/06/2021	M-files is currently backed up onsite daily and placed in a fire proof safe, external backups have been challenging to implement due to the significant file size.	Moving M-Files to the cloud has solved the backup issue as it is now backed up both in the cloud and at LinkTech site.	MB	10.05.21	TC
ENV-704	N/A	BDO IT & Finance Systems Internal Audit Report	06.05.2021	**File Security** - Files sent to external organisations (i.e. via email) or being accessed by staff from remote locations have little file security. It is recommended a Policy be designed for sensitive data to have password protections or similar be added to files under appropriate circumstances.	This concern has been discussed at SMT. It was decided not to proceed at this stage due to the difficulty to implement and the minimal risk of exposure.	MB	15/06/2021	Opportunity for improvement raised in the internal audit.	N/A	MP	7/05/2021	TC
ENV-705	N/A	BDO IT & Finance Systems Internal Audit Report	06.05.2021	**M-Files Workflows** - Ensure continuous improvements to workflows and organisational structure for efficiency optimisation.	Improving M-Files is always front of mind and DWM are continuously refining workflows and the M-Files structure to suit the business.	MP	12/05/2021	Opportunity for improvement raised in the internal audit.	N/A	MP	7/05/2021	TC
ENV-709	0509	SS	21.05.2021	Fire in green waste pile at the DORF.	DWM/Contractor staff followed procedure and successfully contained and extinguished the fire.	SS	21/05/2021	Internal combustion within the green waste pile.	No action required, this was observed during a daily inspection of the area. Personnel acted appropriately and contained the incident.	ML	9/06/2021	TC
ENV-702	N/A	BDO IT & Finance Systems Internal Audit Report	06.05.2021	**Overall IT Environment** - Perform initial cyber risk vulnerability scan to identify current risk exposure and any weakness and then periodic vulnerability scans to monitor exposure profiles and ensure patching is complete to demonstrate best practice .	DWM have signed a new IT service contract which includes cyber security and vulnerability scans. These will be implemented in July, 2021. Auditor response to contract inclusions - "This is a lot better. In particular, make sure patches are actually deployed and the external vulnerability scans are run, and any findings dealt with.'	MB	5/07/2021. Regular scans confirmed.	Opportunity for improvement raised in the internal audit.	N/A	MP	7/05/2021	TC
ENV-706	N/A	BDO IT & Finance Systems Internal Audit Report	06.05.2021	**MYOB Reporting Validation (refers to monthly financial reporting excel spreadsheet)** - Ensure continuous improvement in regards to data validation and reporting errors. Include error reports for scenarios to improve forward planning and decision making. Lock calculations to reduce risks of human error or fraudulent activity.	Processes have been assessed for options to restrict user error. Research has not identified any satisfactory solution to replace Excel.	MB/JW	3/08/2021	Opportunity for improvement raised in the internal audit.	AO(F) has refreshed the monthly financial spreadsheet to improve efficiency and simplify creation of reports. This will reduce the user error moving forward.	MP	8/05/2021	TC
ENV-710	1065	SS	04.06.2021	During routine maintenance the Site Supervisor discovered a partial blockage within the Landfill leachate system.	The Site Supervisor notified DWM, a contractor was engaged and the blockage was successfully removed.	SS	3/08/2021	Routine inspections not adequate to ensure blockages are actioned in timely manner.	The Monthly Environmental checklist has been updated to include routine inspections of the leachate flow. Regular cleaning schedule has been added to the Core Task Register. Although blockages are not completely avoidable, increased inspections and cleaning will prevent problems relating to long term build-up.	ML	4/06/2021	TC
ENV-692	N/A	SS	3/03/2021	The Site Supervisor has noted on the February Environmental Checklist that some vegetation within the DORF irrigation area are showing signs of distress.	DWM and contractor management believe the issue is related to the current sprinkler system. The site contractor has investigated alternative sprinkler options, one has been selected for trial. Trial is on-going.	ML	12/04/2021	DWM believe the cause is due to a sediment build up within the DORF Leachate pond, causing the irrigation sprinklers to block frequently.	All sprinklers within the irrigation zone have been replaced. The trial has so far demonstrated better coverage and less blockages. Filter has been installed.	ML	20/08/2021	TC
ENV-707	N/A	IT & Finance Systems Internal Audit Report	06.05.2021	**MYOB Reporting Validation** - Consider using software solutions to 'hardwire' reporting currently based in spreadsheets to reduce the risk of human error and fraudulent activity.	Demonstration of available software from Auditor was received and the reporting software does not appear to be suitable for DWM's needs. Demonstration of Microsoft product showed valuable uses in other areas, but unlikely to assist with Board reporting. No further software options easily available. Linking reports directly to MYOB using Mfiles still under consideration.	MB/JW	31/07/2021	There is a risk of user error or fraudulent activity in the reporting system currently used. This could be improved with direct inputs between systems - removing the human inputs.	AO(F) has refreshed the monthly financial spreadsheet to improve efficiency and simplify creation of reports. This has reduced potential for user error moving forward. Multiple staff are trained in creating reports.	MP	8/05/2021	TC

ENV-711	1066	AW	23.06.2021	Odour complaint received from Garrett Street resident via Latrobe Council	Reviewed site operations data, and there appears no direct link to DWM	AA	1/07/2021	Nil	DWM continue to improve processes and site personnel adhere to EMS procedures to reduce the likelihood of odour.	ML	2/08/2021	TC
ENV-712	N/A	BSI External Audit	16.06.2021	***Opportunity For Improvement** Internal audit planning documents could outline more detail regarding: * Internal auditing activities in place. * Processes / system audits that are programmed on risk and the importance of the activity being assessed.	Details of the concern were sent to the Internal Auditor. Internal Auditor to update Audit plan based on the feedback received.	MB	3/08/2021	Opportunity for Improvement Raised at external audit.	Internal Audit plan received on 31.08.21 included expanded details as requested from the External Audit Report. Internal Audit Report details Risk levels and compliance concerns.	MB	31/08/2021	TC
ENV-713	1067	AW	18.08.2021	Excess fly complaint received from resident at Great Bend Road. The past week has seen a significant increase in flies for this time of year.	Site inspection was conducted. Good cover was evident at the DORF and Landfill.	ML	18.08.21	No evidence on Site of excess flies. High probability issue unrelated to DWM.	N/A	ML	20.08.21	TC
ENV-714	N/A	Internal Audit	17.09.2021	Internal Audit ISSUE No 2021-02 = R 010 Register of Hazardous Substances has not been updated to indicate latest SDS date as per "REMINDER: If this is a current SDS, don't forget to link it to the R 010 [MFID 15570]" on the meta-data card. Also, the table has "MSDS" rather than "SDS".	Hazardous Substances Register has been updated.	MB	20/09/2021	SDS Metadata does not contain the information to assist updating of the Register. Workflow can be improved to ensure update occurs when documents are updated.	Instructions have been added to the Mfiles workflow to ensure the register details are updated at the same time as the SDS is checked.	MB	1/10/2021	TC
ENV-715	N/A	Internal Audit	17.09.2021	ISSUE N0 2021-01 = Consider including more clear reference to emergency scenario actions that refer to prevention or mitigation of adverse environmental impacts. For instance, the 12/05/2021 scenario had "Plant/Interaction Collision" and the control of potential petrochemical spills, pollution and contamination of soil and water could be noted.	Review of how scenarios are planned and how environmental aspects and impacts can be included in the event.	MB	22/09/2021	Contractor staff plan the scenarios. Environmental factors are not included in the template during the planning stages.	Contractor scenario planners have been requested to include environmental aspects and impacts in the template and planning for scenario days.	MB	30/09/2021	TC
ENV-716	N/A	Internal Audit	17.09.2021	ISSUE No 2021-03 = Record of helicopter application of lime indicates 8.5 tonnes total used, application rate of 0.25 tonnes per load and 36 loads does not calculate correctly.	Helicopter spraying will be unlikely to be performed in the future. DWM and the Contractor have reverted to previous weed control measures to reduce risks to Flora and Fauna and ensure cost controls are in place.	ML	20/09/2021	It has proved difficult to uniformly apply herbicide with Helicopter spraying.	Have reverted to conventional herbicide application techniques.	ML	30/09/2021	TC
ENV-717	N/A	Internal Audit	17.09.21	ISSUE No 2021-04 = Record of management review does not have start time even though it is meant to show "Meeting Start Date and Time"	Start and finish times have been noted in Management Review meeting minutes for October 2021.	MB	15.10.2021	Details of meeting start and end time were not completed on the minutes template.	Importance of details being recorded correctly has been communicated to staff.	MB	20.09.2021	TC
ENV-718	N/A	Finance	15.08.21	Conhur Pty Ltd placed in voluntary administration. Outstanding debts to DWM at just under $250,000.	Review of account and debts outstanding. Weighbridge tags have been deactivated. New account with TasWater has been created. Debtor forms have been submitted with Administrators.	JW/MG/ ML	24/08/2021	Customer account not secured.	DWM credit terms and debtor follow up procedures have ben reviewed. Account forms have been updated with assistance from DWM lawyers. Credit caps have been applied to new accounts.	MB	14.10.2021	TC
ENV-719	0513	SS	23/11/2021	Small fire on the landfill.	The operator pushed the smouldering material to the side of the landfill and smothered it with soil. Contractor CAR - HAII 1129	Site Staff	23/11/2021	Combustible materials in the landfill	N/A	ML	25/11/2021	TC
ENV-720	0514	SS	30/11/2021	Fire on the landfill.	The compactor operator squashed a small battery in a load of waste which ignited a small fire. The operator picked up the battery with a spade and removed it from the landfill. The excavator operator removed the remaining smouldering material from the landfill. Contractor CAR - HAII 1132	Site Staff	30/11/2021	Combustible materials in the landfill	N/A	ML	2/12/2021	TC
ENV-721	0515	SS	1/12/2021	Fire on the landfill.	The compactor operator noticed smoke coming from a load disposed of at the tipping plate. The compactor and excavator operators removed the load from the landfill, placed it on a clay surface and smothered it with material. Contractor CAR - HAII 1133	Site Staff	1/12/2021	Combustible materials being delivered	N/A	ML	3/12/2021	TC
ENV-722	DWM1068	AO	31/12/2021	A Youngmans Road resident called to report odour coming from site. They were frustrated this was still occurring and felt nothing had been done to fix the issue. The resident advised the odour has been bad for around a week.	AO contacted site who advised windrow turning had been underway and with the increased heat and wind, the odour problem was suspected to have been exacerbated. Turning had since finished and therefor the odour issue should ease.	AO	31/12/2021	It is suspected a combination of weather conditions contributed to odour leaving the site.	DWM continue to improve processes and site personnel adhere to EMS procedures to reduce the likelihood of odour.	ML	3/02/2022	TC
ENV-723	DWM1069	AO	31/12/2021	A Dalys Road resident called to report odour coming from site. The resident advised the odour has been quite bad for the last week.	AO had contacted site regarding the earlier complaint and advised the resident that windrow turning had finished and the odour issue should ease.	AO	31/01/2021	It is suspected a combination of weather conditions contributed to odour leaving the site.	DWM continue to improve processes and site personnel adhere to EMS procedures to reduce the likelihood of odour.	ML	3/02/2022	TC
ENV-724	DWM1070	AO	31/12/2021	A second Youngmans Road resident called to report odour coming from site. The resident advised the odour had been strong for the last week.	AO had contacted site regarding the earlier complaint and advised the resident that windrow turning had finished and the odour issue should ease.	AO	31/01/2021	It is suspected a combination of weather conditions contributed to odour leaving the site.	DWM continue to improve processes and site personnel adhere to EMS procedures to reduce the likelihood of odour.	ML	3/02/2022	TC

ENV-725	0517	SS	31/12/2021	Fire on the landfill.	The operator used the excavator to move the burning material from the landfill to gravel area away from other material. The burning material was covered with growing medium to extinguish the fire. The site supervisor confirmed the fire had been extinguished before leaving site for the day.	SS	31/01/2021	Combustible materials in the landfill	N/A	ML	3/02/2022	TC
ENV-726	DWM1071	AO	19/01/2022	A Dalys Road resident called to report the odour from site was very bad both this afternoon and yesterday afternoon. Odour wasn't a problem in the morning, but became almost unbearable in the afternoon.	The OP&O conducted an initial investigation and found no obvious causes for the increased odour leaving site.	ML	19/01/2022	After further investigation, it is suspected a combination of weather conditions has contributed to odour leaving the site.	DWM continue to improve processes and site personnel adhere to EMS procedures to reduce the likelihood of odour.	ML	3/02/2022	TC
ENV-727	DWM1072	AO(E)	2/02/2022	During stage 3 of Railton Road upgrade, the road works contractor punctured the leachate pipeline between DWM site and Latrobe. The pump station was isolated at the time (standard practice during road upgrade). This allowed only the residual pressure to escape into the excavation area. The contractor notified O&PO.	The O&PO notified site staff to maintain pump isolation, a contractor was organised to pump the escaped liquid from the excavation area which was then disposed of onsite. Nutrien Water were engaged to repair the pipeline which was fixed by end of day on 03/02/2022.	ML	2/02/2022	Documentation at State Growth showed inaccurate information for the pipeline infrastructure.	OP&O to work with State Growth to update pipeline mapping. The section of pipeline will be aligned with contractor survey as part of stage 3 works.	ML	15/02/2022	TC
ENV-729	DWM1074	ML	14/02/2022	Latrobe Council received a complaint from a resident on Dawsons Siding Rd. Resident advised that noise is starting at 4.00am, when inspecting the noise at 4.00am machinery was seen working to the left of the DWM weighbridge.	The OP&O spoke with Forico due to logging in the same area.	ML	14/02/2022	After discussion with Forico, they confirmed they were responsible for the noise.	The OP&O met with Forico and an agreement to alter their start time to 6am was made.	ML	15/02/2022	TC
ENV-730	DWM1075	ML	10/02/2022	The EPA received an odour complaint which they have associated with DWM operations, the EPA advised the caller described the odour to be like dead animals/rotting flesh.	DWM and the EPA have agreed that the odour is related to a specific waste stream, which was being disposed of at DWM as part of an environmental emergency response. The OP&O spoke with the EPA and agreed that DWM would review current processes and provide the EPA with an update. As an immediate action DWM would stop receiving additional loads and would frequently cover the deep burial area with day cover.	ML	10/02/2022	The OP&O spoke with the EPA and both determined the odour to be related to a specific waste stream.	The OP&O reviewed the waste stream disposal process in conjunction with the customer. Multiple changes were made, including the frequency of loads brought in, and the acceptable age of those loads. The covering process of the deep burial area was also updated to include thicker and more frequent covering requirements.	ML	15/02/2022	TC
ENV-731	DWM1076	AA	22/02/2022	Resident from Youngman's Rd called complaining about the odour coming from site.	The OP&O conducted an initial investigation and found no obvious causes for the increased odour leaving site.	ML	22/02/2022	Possibly the odour has been generated from one of the 2 activities on site (landfill or DORF).	DWM continue to improve processes and site personnel adhere to EMS procedures to reduce the likelihood of odour.	ML	5/04/2022	TC
ENV-732	SWM1077	AW	25/02/2022	Resident from Daleys Road Dulverton called with odour complaint.	The OP&O conducted an initial investigation and found no obvious causes for the increased odour leaving site.	ML	25/02/2022	Possibly the odour has been generated from one of the 2 activities on site (landfill or DORF).	DWM continue to improve processes and site personnel adhere to EMS procedures to reduce the likelihood of odour.	ML	5/04/2022	TC
ENV-733	DWM1078	MS	28/02/2022	The OP&O observed a contractor on a neighbouring property creating a traffic hazard on Dawson Siding Road, just after the railway intersection. Contractor trucks were reversing blind to the road corner.	The OP&O alerted relevant customers to the potential hazard and made contact with the neighbour to rectify the hazard.	ML	28/02/2022	The neighbouring contactor was the cause of the traffic hazard.	The OP&O made contact with the contactor, the contractor advised they would make alternate arrangements for their trucks when leaving neighbouring properties.	ML	5/04/2022	TC
ENV-734	DWM1080	AA	22/03/2022	Resident from Daleys Road Dulverton called with an odour complaint	The AO(E) called the Site Supervisor who advised that compost windrows had been turned in the morning, and that site staff had noticed the odour as well.	AA	22/03/2022	Possibly the odour has been generated from one of the 2 activities on site (landfill or DORF).	DWM continue to improve processes and site personnel adhere to EMS procedures to reduce the likelihood of odour.	ML	5/04/2022	TC
ENV-735	DWM1081	AA	13/04/2022	DWM were notified by a third party that a waste disposal customer had lost some of its load along Railton Road on its way to site.	Site staff assisted the driver in cleaning up the spilt material and with disposing of the remaining waste in the landfill. The Site Supervisor advised DWM that the EPA and the local council were contacted.	SS	13/04/2022	DWM customer with over-filled transport, not appropriately covered.	DWM Site Induction clearly articulates the expected minimum requirements of appropriate load management. DWM contacted appropriate enforcement agencies of the event.	ML	20/04/2022	TC
ENV-736	DWM1082	MB	17/04/2022	Police called on Easter Sunday and left a message that the office was not 'secure'. CEO was in office the next day and found the door propped open.	Investigation of office access was undertaken, including contacting other building occupants for any helpful information. It was discovered that reports of children climbing to the roof had been made. The door to the balcony was found to be unlocked. No items were found to be missing.	MB	20/04/2022	Young persons had accessed the office through the Balcony door.	Staff and regular office contractors were reminded to keep balcony locked. Entry code to shared zone was changed.	MB	30/04/2022	TC
ENV-737	0520	SS	26/04/2022	Fire within the green waste stockpile	The operator at the DORF pulled the stockpile apart with an excavator and placed a sprinkler on the stockpile. Personnel will monitor for 2 days.	SS	26/04/2022	Internal combustion within the green waste pile.	No action required, this was observed during a daily inspection of the area. Personnel acted appropriately and contained the incident.	AA	7/06/2022	TC

Annual Landfill Monitoring Report

2021

Dulverton Regional Waste Management Authority

04 February 2022

→ The Power of Commitment

GHD Pty Ltd | ABN 39 008 488 373
23 Paterson Street,
Launceston, Tasmania 7250, Australia
T +61 3 6332 5500 | **F** +61 3 8732 7046 | **E** lstmail@ghd.com | **ghd.com**

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			Name	Signature	Name	Signature	Date
S4	00	S. King	D. Rockliff	On file	S. Wright	On file	3/02/2022

Contents

Table index

Figure index

Appendices

1. Introduction

Dulverton Regional Waste Management Authority (DRWMA) engaged GHD Pty Ltd (GHD) to undertake periodic monitoring and reporting of groundwater and surface water at the DRWMA Landfill ("the landfill"). The landfill is situated at Dawsons Siding Road, Latrobe, Tasmania ("the site"). GHD has been conducting routine quarterly and 6-monthly surface water and groundwater monitoring at the site since August 2016. This report outlines the results of the surface and groundwater monitoring for the period January 2021 to December 2021 inclusive. Much of the general information provided in the previous Landfill Annual Monitoring Reports (January 2020 to December 2020) has been retained in this report for completeness. Where changes have occurred, these have been noted and/or explained.

The landfill currently operates under Environmental Protection Notice (EPN) 7158/3, which was issued on 20 November 2015. The adjacent Dulverton composting facility operates under a separate EPN (No. 7852/1), with environmental monitoring reported separately. Prior to March 2019, monitoring results from the composting facility had been included in the landfill monitoring report.

1.1 Objectives and purpose of this report

The principal objective of GHD's engagement, and purpose of this report, is to assess and report the status of groundwater and surface water at the site through the collection and analysis of water samples, with the aim of identifying potential impacts the landfill may be having on the surrounding environment. Emphasis is placed on receptors down-gradient of the landfill on Caroline Creek. The landfill is located within the catchment of Caroline Creek.

1.2 Scope and limitations

To meet the requirements outlined in EPN 7158/3, and address the stated project objectives above, the following scope of works was undertaken by GHD:

- Quarterly sampling of surface water, including stormwater and leachate, at nominated points across the site;
- Bi-annual (six monthly) monitoring of groundwater at nominated groundwater bores;
- Laboratory analysis of all water samples by an independent NATA accredited laboratory;
- Interpretation of laboratory analysis results; and
- Prepare a concise technical report summarising the monitoring results (this report).

2. Site description and history

The Dulverton landfill is located approximately 15 km south of Devonport in northern Tasmania. The landfill receives waste streams from municipal kerb side waste collections, waste transfer stations, and private contractors. The landfill is not open to the public. The site is classified as a Category B – Putrescible Landfill under the *Landfill Sustainability Guidelines* (DPIPWE, 2004), and can accept inert waste, clean fill and putrescible waste. Category B landfills can also accept some controlled wastes and low level contaminated material (as defined under *Information Bulletin 105 – Classification and Management of Contaminated Soil for Disposal*) subject to EPA approval and the site's EPN conditions.

The site began operation in 1995. The key features of the site include:

– The landfill, consisting of an open tip face of approximately 50 metres;
– Two leachate storage lagoons: One lagoon uses an aerator to reduce nutrient load and odour; the other is used an overflow/storage pond. Leachate drains through the open waste cell and is collected by the leachate collection system. Leachate flows by gravity through a network of pipes from the drainage system to the leachate storage pond. The leachate is then pumped to Latrobe and discharged to TasWater's sewerage system via an underground pipeline;
– One HDPE-lined emergency leachate overflow pond (formerly SP1 and SP2), and one stormwater pond;
– Historical hazardous waste cell that has been entombed for over five years;
– Underground gas recovery infrastructure on the closed landfill cells, and a gas flare;
– A weighbridge at the front gate for all customer loads to be weighed;
– Site office and facilities for on-site staff;
– A workshop for housing site machinery, which includes fuel storage tank and fuel trailer; and
– Firefighting infrastructure including a portable water cart, hydrants, and gear for personnel including self-contained breathing apparatus sets.

The active landfill is lined and has a leachate collection system. The landfill is progressively covered and capped as per the site EPN. DRWMA have recently extended the landfill on the western side of the site.

Adjacent to the landfill site is an active composting operation, also managed by DRWMA, which operates under a separate EPN.

3. Monitoring network and program

Groundwater and surface water monitoring locations are shown on Figure 3-1 below.

3.1 Groundwater monitoring network

The groundwater monitoring network has historically numbered up to 17 bores as stated in the EPN. This included bores from various groundwater reviews / programs that have been installed over the history of the site, some of which have now been decommissioned:

– Bores installed as part of the original Environmental Management Plan (EMP) requirements for which no bore logs are available (B1 to B10);
– A second set of bores as part of a GHD hydrogeology review in 2009 (B11, B12, B14 and B21A); and
– Hazardous waste cell bores B15, B16 and B17 (now decommissioned).

Table 3-1 below provides location information and a summary of bore details (where available) of those bores in and around the site. Due to the limited bore logs, GHD undertook a down-hole camera and down-hole geophysics assessment as part of a hydrogeology review in 2009 (GHD, 2009). The results were used to determine the likely aquifer that the bores may be screened in.

Some bores in the previous EPNs, such as B1, B3, B5 and B10 have not been included in the current EPN (as bore logs are unavailable, and field observations of bore conditions indicate that construction may not be adequate). The current groundwater monitoring network consists of the following bores:

– B2, B4, B6, B7, B9, B11, B12, B14

The EPN states that groundwater monitoring shall include recording of the following:

– Standing water level;
– Volume of water in litres within the installed casing before purging;
– Volume of water in litres purged before sampling;
– Time required to purge the bore casing before sampling;
– Method of purging the casing water volumes;
– Flow rate of the purging method used for sampling;
– Time, date and identification code of the water sample; and
– Field primary water quality parameters, including at least, conductivity, pH and temperature.

Additional bores have been drilled by Tasman Geotechnics to monitor groundwater levels in the proposed landfill extension area to the west of the current site. These additional bores are not included in this report, or the current EPN, but may be useful for future detailed groundwater assessment.

LEGEND

- Surface Water Sampling Site
- Landfill leachate
- Surface Water Sampling Site (Decomissioned)
- Groundwater Monitoring Sites
- Decomissioned Monitoring Bore
- Monitoring Bore Not Sampled

Paper Size A3

0 50 100 200 300

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

Dulverton Regional Waste Management Authority

Job Number 32-19202
Revision B
Date 04 Mar 2020

Groundwater & Surface Water Sampling Locations

Figure 3-1

G:\32\3219202\GIS\Maps\Deliverables\3219202_Sampling_Sites_RevB.mxd

2 Salamanca Square Hobart TAS 7000 Australia T 61 3 6210 0600 F 61 3 6210 0601 E hbamail@ghd.com W www.ghd.com

Data source: DPIPWE TheLIST, cadastre, 2017; GEPro, Imagery, 2017; GHD, bore locations, sample sites, 2017. Created by: drockliff

Table 3-1 Summary of current and historical groundwater network

Bore ID	Easting	Northing	Total Depth	Screened from (mBG)	Screened to (mBG)	Screened lithology	Location and purpose
B2	449234	5429501	21.8	18.3	21.7	Sandstone	Next to stormwater pond.
B3	449396	5429537	17.5	14.5	18	Limestone	North of leachate pond No 1. No longer monitored.
B4	449371	5429511	19.6	16.6	19.6	Sandstone	Between leachate ponds 1 and 2.
B6	449766	5429518	6.72	3.5	6.5*	Shale/mudstone	Eastern side of boundary between the landfill and Caroline Creek.
B7	449541	5429180		17.6	20	Sandstone	South of sediment pond and in between landfill and Caroline Creek.
B9	449536	5427578	69.8			Unknown	Background groundwater site.
B11	449397	5429515	7.95	4.95	7.95	Clayey silts	Monitoring the upper most aquifer down gradient of the leachate ponds.
B12	449523	5429461	14.33	6.98	9.98	Clayey silts	Monitoring the deeper aquifer between the landfill and Caroline Creek.
B14	449624	5429320	4.47	1.47	4.47	Gravelly silt	Monitoring the upper most aquifer down gradient of the landfill.
B15	449261	5429288	14.5	10.5	14.5	Clayey silts	Monitoring the hazardous waste cell. No longer monitored.
B16	449215	5429275	14.5	10.5	14.5	Limestone	Monitoring the hazardous waste cell. No longer monitored.
B17	449236	5429234	16	11	16	Clayey silts	Monitoring the hazardous waste cell. No longer monitored.
B21A	448448	5428914	23	17	23	Clay, dolerite boulders and limestone	Former background groundwater site. No longer monitored.

3.2 Surface water and leachate monitoring sites

The main surface water feature near the landfill is Caroline Creek, which flows northwards through the north-eastern corner of the site. Caroline Creek joins the Mersey River approximately 3 km north-east of the landfill.

There are various sampling sites that sample Caroline Creek, including a background site (S9), down-gradient sites and sites that are seasonally dry (refer to Table 3-2 below). Figure 3-1 shows the location of the surface water sampling sites for the landfill facility.

Table 3-2 Summary of surface water and leachate monitoring sites

Sample ID	Location and Purpose
S1	Furthest downstream site of Caroline Creek. Provides water quality prior to entering the Mersey River (600 m upstream from junction).
S2	On Caroline Creek, approximately 500 metres downstream of the landfill.
S3	A small drainage line, which flows after high rainfall events. This monitors stormwater run-off water quality leaving the site to Caroline Creek.
S4	Caroline Creek culvert on the road between the railway and the former Mushroom Compost Facility. Monitoring down-gradient Caroline Creek water quality as it passes adjacent the site.
S6	This was the listed as an historical background Caroline Creek site but due to proposed landfill expansion, a new background site has been added (S9).
S7	This is a stormwater drainage line from sediment pond 1 at the northern site boundary.
S9	The background surface water site monitoring Caroline Creek.
Landfill leachate	This is the onsite leachate pond which is monitored at least quarterly by GHD through the site Trade Waste Agreement with TasWater.

Leachate monitoring at the site is currently undertaken as part of DRWMA's Trade Waste Agreement with TasWater (a landfill leachate monitoring program is not specified in the EPN). In the past, samples have been taken weekly and quarterly by DRWMA and the quarterly results have been provided to GHD for inclusion in assessment of historical results.

3.3 Rainfall

The Australian Bureau of Meteorology rainfall station 91332 (Dowbiggin St, Railton) provides rainfall data since 2003. In reports prior to the 2019 Annual Report, data from rainfall station 91291 (Sheffield School Farm) was used; however, it is now considered that data from the Railton station is more relevant as it is closer to the landfill site. Daily rainfall, recorded during the current monitoring period (2021) is detailed in

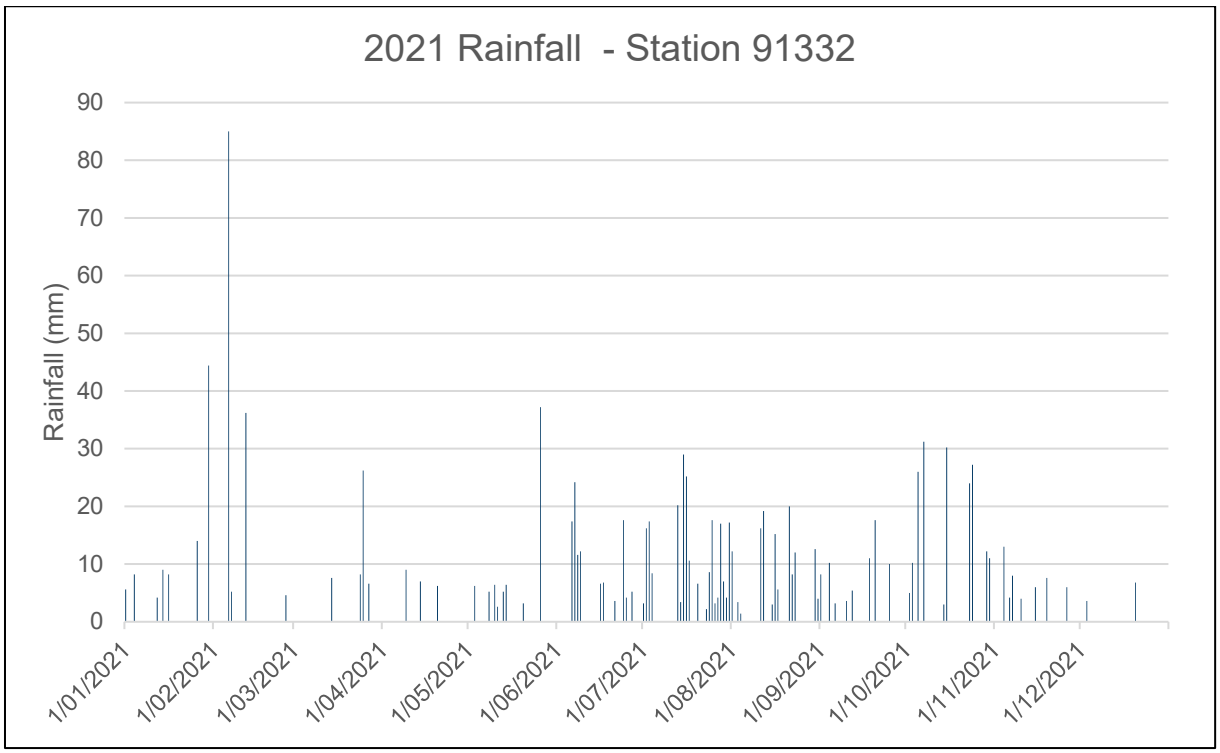

Figure 3-2 below. Rainfall in the 5 days preceding sampling is shown below in Table 3-3.

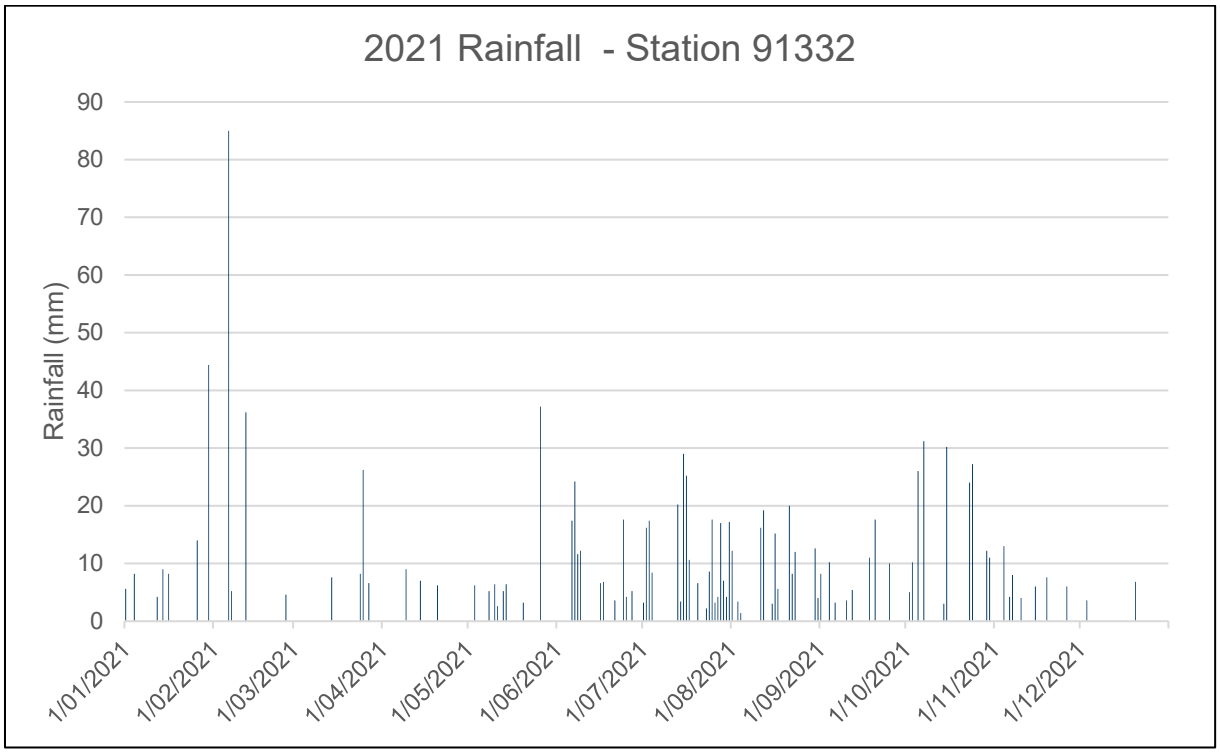

Figure 3-2 Daily rainfall for the reporting period

Annual total rainfall for station 91332 for 2021 was 1140 mm which is higher than the 2020 total of 1099 mm, and slightly higher than the annual average of 1051.3 mm. There was one occasion where

daily rainfall was recorded above 50 mm. This was on 6th February, when a figure of 85 mm was recorded.

Table 3-3 Rainfall for 5 days preceding sampling [1]

Sampling start date	Rainfall on sampling day (mm)	Rainfall preceding 5 days (mm)
6 December 2021	0	0, 0, 3.6, 0, 0
27 September 2021	0	0, 0, 0, 0, 10
22 June 2021	0	6.8, 0, 0, 0, 3.6
22 March 2021	0	0, 0, 0, 0, 0

1 BOM, 2021. http://www.bom.gov.au/

4. Sampling and analysis plan

Sampling and analyses were carried out according to relevant Australian guidelines. For a detailed description of the sampling plan, refer to Appendix A. GHD delivered the services in line with a quality control and assurance plan, tailored specifically for this project, which is detailed in Appendix B. A QA/QC summary table is provided in Table 7 of Appendix C.

The sampling program is based on the current EPN with some amendments which have incorporated recommendations from previous reports. The sampling programs are summarised in Table 4-1, Table 4-2, and Table 4-3.

Table 4-1 Groundwater sampling program

Frequency	Parameters
Six-monthly	Field parameters: Temperature, pH, EC, Dissolved Oxygen, Redox Potential Laboratory Analysis: Major ions (calcium, magnesium, potassium, sodium, chloride, sulfate, bicarbonate), Total Dissolved Solids, total nitrogen, ammonia, nitrite, nitrate, total phosphorus, orthophosphate, Dissolved Organic Carbon, Biochemical Oxygen Demand, arsenic, mercury, selenium, TPH, Dissolved metals (Fe, Cu, Zn, Cr, Mn, Ni, Pb), total iron, bromide, iodide

Table 4-2 Surface water sampling program

Frequency	Parameters
Three monthly	Field parameters: Temperature, pH, EC, Dissolved Oxygen, Redox Potential Laboratory Analysis: pH, biological oxygen demand, total suspended solids, conductivity, total nitrogen, ammonium, oxides of nitrogen, total phosphorus, dissolved free phosphorus, major ions (calcium, magnesium, potassium, sodium, chloride, sulfate, bicarbonate)
Six monthly	Three monthly parameters, plus: Laboratory Analysis: - Total metals (Fe, Cu, Zn, Cr, Mn, Ni, Pb, Cd) - Dissolved metals (Fe, Cu, Zn, Cr, Mn, Ni, Pb, Cd)

Table 4-3 Leachate sampling program

Frequency	Parameters
Three monthly	Laboratory Analysis: BOD, TSS, TDS, Oil & Grease, Sulphate, Sulphite, Sulphide, Total Nitrogen, Ammonia, Total phosphorus, thiosulphate, total oxidised sulphur, dissolved major cations, major ions, chloride, alkalinity, nitrate, nitrite, orthophosphate, chemical oxygen demand, dissolved organic carbon, total cyanide, formaldehyde, acetone derivatives, pesticides (OC & OP), phenoxyacetic acid herbicides, PCBs, MBAS, dissolved and total metals (Al, As, Cd, Cr, Cu, Fe, Pb, Hg, Mn, Ni, Se, Zn), BTEX, PAHs, Total Chlorinated Hydrocarbons, Total Petroleum Hydrocarbons, phenolic compounds.

GHD undertook quarterly sampling of landfill leachate in 2021 (and monthly from July to December 2021 inclusive) as requested by DRWMA. The weekly parameters (as listed in Table 2.2 of the Trade Waste Agreement) were added to the quarterly sampling suite in December 2019. It is anticipated that the frequency of the entire leachate sampling program may be reduced to quarterly in the near future.

The EPN states that landfill leachate results may be required by the Director, EPA; and if required by the Director, leachate pond water must be sampled for parameters as listed in the EPN. During the reporting period, no request was received from the Director EPA to undertake landfill leachate testing (in addition to that required under the Trade Waste Agreement).

4.1 Monitoring frequency

Environmental monitoring began at the DRWMA landfill site in approximately February 2005, which included a similar network of groundwater and surface water sites as is currently monitored. The monitoring in the earlier EPN was more frequent and for a larger set of parameters. Since this time, there have been additional bores drilled, surface water sites added and lost, and leachate is now monitored through a trade waste agreement.

Monitoring undertaken by GHD for this annual report occurred in:

- December, 2021 – Surface water and leachate monitoring plus select groundwater bores;
- November 2021 – Leachate monitoring
- October, 2021 – Leachate monitoring;
- September, 2021 – Groundwater, surface water and leachate monitoring;
- July 2021 – Leachate monitoring;
- June, 2021 – Surface water and leachate monitoring; and
- March 2021 – Groundwater, surface water and leachate monitoring.

Previous monitoring undertaken during the 2020 period occurred in:

- December, 2020 – Surface water and leachate monitoring plus select groundwater bores;
- October, 2020 – Leachate monitoring;
- September, 2020 – Groundwater, surface water and leachate monitoring;
- July 2020 – Leachate monitoring;
- June, 2020 – Surface water and leachate monitoring; and
- March 2020 – Groundwater, surface water and leachate monitoring

5. Basis for Assessment

Surface and groundwater results are compared against the guidelines defined through the *State Policy on Water Quality Management 1997.* The State Policy defines a series of water quality objectives for protecting the environmental value of a water resource, depending on the usage of the environment in a given area. Achieving these objectives is met by either maintaining or enhancing water quality for the water resource in question.

The first step in the implementation of the *State Policy on Water Quality Management 1997* is the identification of Protected Environmental Values (PEVs) for the surface waters in the region of interest. PEVs are the current values and uses of a water body for which water quality should be protected.

The DRWMA landfill is located within the Mersey catchment, as defined in the *Environmental Management Goals for Tasmanian Surface Waters – Mersey December 2001.* The landfill is located on what is defined as "private land" in the report. PEVs apply to all surface waters within each land tenure category (i.e. public, private etc.), other than privately owned waters that are not accessible to the public, or are not connected to, or flow directly into waters that are publicly accessible.

Caroline Creek flows through part of the site and discharges into the Mersey River which is publicly accessible and used for a variety of activities. Therefore, the landfill qualifies as having PEVs for surface waters that flow through private land, which sets specific target objectives for surface waters.

For surface waters flowing through private land (including forest on private land) the PEVs, as defined in the *Environmental Management Goals for Tasmanian Surface Waters – Mersey December 2001,* are:

- Protection of aquatic ecosystems
  - Protection of modified (not pristine) ecosystems from which edible fish are harvested
- Recreational Water Quality and Aesthetics
  - Primary contact water quality (Mersey River - at Union Bridge; adjacent to Bridle Track Road Kimberley Bridge picnic area, at Olivers Road Bridge, at Liena Road Bridge, at Merseylea Bridge and from Lovetts Flats to Bells Parade)
  - Secondary contact water quality
  - Aesthetic water quality
- Raw Water for Drinking Water Supply (creeks / groundwater extraction bores)
- Agricultural Water Uses
  - Irrigation
  - Stock watering

Overall, the management goals, (as taken from *Environmental Management Goals for Tasmanian Surface Waters – Mersey)* for this area are "*That is, as a minimum, water quality management strategies should seek to provide water of a physical and chemical nature to support a healthy, but modified aquatic ecosystem from which edible fish may be harvested; that is acceptable for irrigation and stock watering purposes; is suitable for industrial supply in specified areas (pulp and paper production, mining and chemical works and brick production); for town drinking water supply (subject to coarse screening and disinfection) in specified area; and which will allow people to safely engage in recreation activities such as swimming (in specified areas), paddling or fishing in aesthetically pleasing waters. For private land (including forest on private land) within the Mole Creek karst system, water quality management should also have particular regard to the values associated with that system"* (2001, Department of Primary Industries, Water and the Environment).

The PEVs refer to the following nationally recognised documents for specific trigger values:

– Australian and New Zealand Governments and Australian state and territory governments (ANZG 2018). **Australian and New Zealand Guidelines for Fresh and Marine Water Quality.** These guidelines recently superseded the ANZECC (2000) guidelines;
– Australian and New Zealand Environmental Conservation Council & Agricultural and Resource Management Council of Australia and New Zealand (ANZECC & ARMCANZ 2000**) Australian and New Zealand Guidelines for Stock and Domestic;**
– Australian and New Zealand Environmental Conservation Council & Agricultural and Resource Management Council of Australia and New Zealand (ANZECC & ARMCANZ 2000) **Australian and New Zealand Guidelines for Irrigation Long Term Trigger values**;
– National Health and Medical Research Council and Natural Resource Management Council (NHMRC & NRMMC 2011) **Australian Drinking Water Guidelines.**

6. Site assessment results

6.1 Background

GHD has conducted quarterly surface water and 6-monthly groundwater monitoring on site since 2016. Prior to this, and as noted in the previous reports, there is a high degree of uncertainty around the results collected at the site between 2005 and 2016.

Due to this uncertainty, the results prior to 2016 are discussed separately below. A brief summary of the results, adapted from the previous GHD report is provided in the following sections for completeness and comparison, however these results should still be treated with caution. The reasons for the uncertainty was due to the groundwater sampling procedures followed, which are understood to have not been undertaken in line with Australian Standards such as:

– No dissolved metals results – samples were analysed for total metals only, which is difficult to assess against the guidelines as the trigger values are for bioavailable, dissolved metals;
– The previous groundwater sampling method did not include purging or stabilising field parameters prior to collecting a groundwater sample.

Long-term surface water trends have been included, but as outlined above, groundwater trends have only been included dating back to the start of 2016, as results prior to this are not considered reliable.

6.2 Assessment Criteria

As previously described in Section 5, the PEV for the Mersey catchment includes protecting the receiving waters for a number of values. The trigger values used for comparison with site results are:

– ANZG (2018) Trigger values for freshwater aquatic ecosystems with a level of protection for 95% of species **(FAE95%)**
– National Health and Medical Research Council Primary Health and Contact, 2011 which is taken from the Australian Drinking Water Guidelines 2011 **(REC)**;
– ANZECC & ARMCANZ (2000) Irrigation Long Term Trigger values **(LTV),** Irrigation Short term Trigger Values **(STV);** and
– ANZECC & ARMCANZ (2000) Stock and Domestic **(S&D).**

Field sheets and a field summary with stabilised field parameters is provided in Appendix D. All laboratory documentation for the 2021 monitoring period is provided in Appendix E.

6.3 Historical water chemistry results

The following two sections of this report provides a summary of monitoring results against trigger values for results collected before and after 2016. The first section (6.3.1) summarises those sites that had monitoring results above trigger values prior to August 2016. The subsequent section (6.3.2) summarises the most recent period (January – December 2021), in comparison to previous results (since August 2016). Results are compared against the adopted trigger values and figures are provided showing water chemistry trends. Water data for these periods is summarised in Tables 1-6 of Appendix C.

6.3.1 Historical groundwater monitoring data

Table 6-1 summarises the sites that had parameters above each of the trigger values prior to 2016 (for more than 3 events or at least 50% of results). The FAE95% trigger values are typically the lowest trigger values, and as such the column for FAE95% in Table 6-1 shows the highest number of exceedances. As the ANZECC &

ARMCANZ (2000) guidelines use bioavailable (dissolved) metals and only total metal concentrations are available for this period, the concentrations are predictably higher, as total metals includes metals adsorbed on suspended clays and other fine particles. Sites B6, B7 and B8 do not show exceedances above the FAE95% trigger values, with each bore being down-gradient of the landfill operations, at mixed depths and geology.

The guidelines do not take into account background conditions, which in this case are currently monitored at B9. Previously, bore B21A was used to represent background groundwater conditions. Upon review of the 2016/2017 results it was decided that B9 would be better suited to sample for baseline groundwater chemistry. This was due to B21A being difficult to sample, as the bore only contained a small volume of water, recharged poorly, and as a result purged dry after 0.5 L. Attempts to sample found that the B21A would purge dry before any water would reach the top of the tubing, and alternative sampling methods (manual bailing) found the water to contain high amounts of sediment, which impeded the ball at the end of the bailer causing the water to leak out before it could be drawn from the well.

Therefore, B9 was considered a suitable replacement, as it is up-gradient of the landfill and recharges quickly, allowing an adequate volume of water to be purged and in-situ chemistry to be collected and sampled. B21A historically showed exceedances for aluminium, cadmium, chromium, copper, lead, nickel and zinc, which was attributed to (at least in part) to the surrounding geology. When initially sampled in March 2018, B9 reported exceedances of copper (dissolved), iron, zinc (dissolved) and total phosphorus (but no aluminium, cadmium, chromium, lead or nickel). The reason for this is unknown.

Table 6-1 Summary of historical groundwater metals and nutrients above trigger values*

	FAE95%	REC	LTV	STV	S&D
B2	Al, Cd, Cr, Cu, Pb, Mn, Ni, Zn, ammonia, nitrate		Fe (total and dissolved), Mn, phosphorus		
B4	Zn		Fe (total and dissolved),		
B6			Fe (total), phosphorus		
B7			Fe (total), phosphorus		
B11	Al, Cd, Cr, Cu, Pb, Ni, Zn		Fe (total and dissolved), phosphorus		
B12	Al, Cd, Cr, Cu, Pb, Ni, Zn, nitrate		Al, Fe (total and dissolved), phosphorus		Al
B14	Al, Cd, Cr, Cu, Pb, Ni, Zn, nitrate		Al, Fe (total and dissolved), phosphorus		Al
B15	Cd, Cr, Cu, Pb, Ni, Zn	Ni	Pb, Fe (total), Cu, Ni, phosphorus		Pb
B16	Cd, Cr, Cu, Pb, Mn, Ni, Zn, nitrate	Ni	Pb, Fe (total), Cu, Ni, phosphorus		Pb
B17	Cd, Cr, Cu, Ni, Zn, nitrate	Ni	Fe (total), Ni, phosphorus		Pb
B21A	Al, Cd, Cr, Cu, Pb, Ni, Zn		Fe (total and dissolved), Mn, phosphorus		

*above trigger values more than 3 events or 50% results

The historical data show that where monitored, all total petroleum hydrocarbons (TPH), benzene, toluene, ethyl benzene, xylene (BTEX), organochlorine pesticides (OC pesticides), organophosphate pesticides (OP pesticides), poly cyclical aromatic hydrocarbons (PAH), and polychlorinated biphenyls (PCB), have typically been below laboratory limits of reporting (LOR).

6.3.2 2021 Groundwater monitoring results

This section describes the results of monitoring from the six monthly March 2021 and September 2021 monitoring events, and compares them with previous results (since August 2016). Table 6-2 shows the sites with analytes above the adopted trigger levels only. Exceedances are shown for dissolved metals only, which are needed to compare against FAE95% [ANZG (2018)] guidelines. This sampling program adopted Australian Standards for sampling (detailed in Appendix A), which includes purging of three well volumes and / or achieving stabilised field parameters prior to a sample collection.

The hydrasleeve method has been used for sampling background bore B9 since September 2020, due to the depth of the bore (69.8 m) making manual purging difficult. There also appears to be an obstruction in the pipe, preventing the use of a pump. The hydrasleeve was lowered to the bottom of the well to take a sample from the screened section only, eliminating the need for purging.

Table 6-2 Summary of groundwater parameters above trigger levels in 2021 compared to the previous reporting period

Bore	Year	FAE95%	REC	LTV	STV	S&D
B2	2020	*Ammonia, Cu, Mn, Ni, Zn, Fe*		*Chloride, Total N, P (total), Fe, Mn,*	*N (total), Fe*	
	2021	Ammonia, Cr, Cu, Mn, Ni, Zn	Mn, Ni	N (total), P (total), Fe	P (total), Fe	
B4	2020	*Cu, Zn, Fe*		*Chloride, Fe, Mn*	*Fe*	
	2021	Zn	Mn	Chloride, P (total), Fe, Mn	Fe	
B6	2020	*Cu, Ni, Zn, Fe*		*P (total), Fe*		
	2021	Cu, Zn		P (total), Fe		
B7	2020	*Cu, Zn*				
	2021	No exceedances				
B9	2020	*Cu, Ni, Zn*		*Total P, Fe*	*Total P*	
	2021			Total P		
B11	2020	*Cu, Fe, Pb, Ni, Zn*		*Total P, Fe,*	*Fe*	
	2021	Ammonia, Cu, Ni, Zn	Pb, Ni	Total P	Fe	
B12	2020	*Cu, Zn*		*Total P*		
	2021	Cu, Zn				
B14	2020	*Cu, Pb, Zn, Fe*		*Total P, Fe*	*Total P*	
	2021	Cu		Total N, Total P, Fe	Total P	

Generally, exceedances in metals, particularly for the FAE95% criteria were similar to the 2020 reporting period; with copper and zinc being the most prevalent. Some exceedances of the REC criteria were noted in 2021, whereas there were no exceedances of REC criteria in 2020. There was a general reduction in overall exceedances in groundwater in 2021, particularly for FAE95% criteria. There were no exceedances at B7 in 2021.

Exceedances in lead were noted at B11 which is consistent with the previous three reporting periods; however exceedances of the REC criteria for lead and nickel were noted at B11 during 2021.

Arsenic, cadmium, mercury and selenium were below or close to the laboratory limit of detection in all samples collected during 2021, which is similar to the previous reporting period. Iron and / or phosphorus were above the LTV for irrigation PEVs in most bores, which is generally consistent with previous groundwater monitoring results. It is possible that phosphorus is a product of the region's agricultural setting and iron is naturally occurring.

There was a reduction in exceedances at background bore B9, with only one exceedance (total phosphorus) noted in 2021. Copper and zinc are regularly found to be over the FAE95% trigger level at B9, and nickel was also reported above the trigger level in September 2020 for the first time in a number of years.

The down gradient bores show a similar pattern with respect to the background bore in relation to a number of metals, namely copper, zinc and nickel which show an increasing trend compared with previous years, although levels do still appear to be fluctuating with decreases noted in most bores in 2021. B11 appears to be the most enriched bore on site in terms of dissolved metal concentrations (Fe, Cu, Pb, Zn, Ni).

Given that B9 is currently taken to represent background conditions, and dissolved Cu, Ni and Zn are elevated at this bore, it is possible that elevated dissolved Cu and Zn concentrations in other bores are a result of background levels.

The concentrations of Cu, Ni and Zn at the monitoring bores since August 2016 are shown in Figure 6-1, Figure 6-2 and Figure 6-3 respectively. Plots of total phosphorus (Figure 6-4) and Ammonia (Figure 6-5) have also been included as they are contaminants of potential concern (COPC), and concentrations on site have fluctuated over previous monitoring periods with some significant spikes noted.

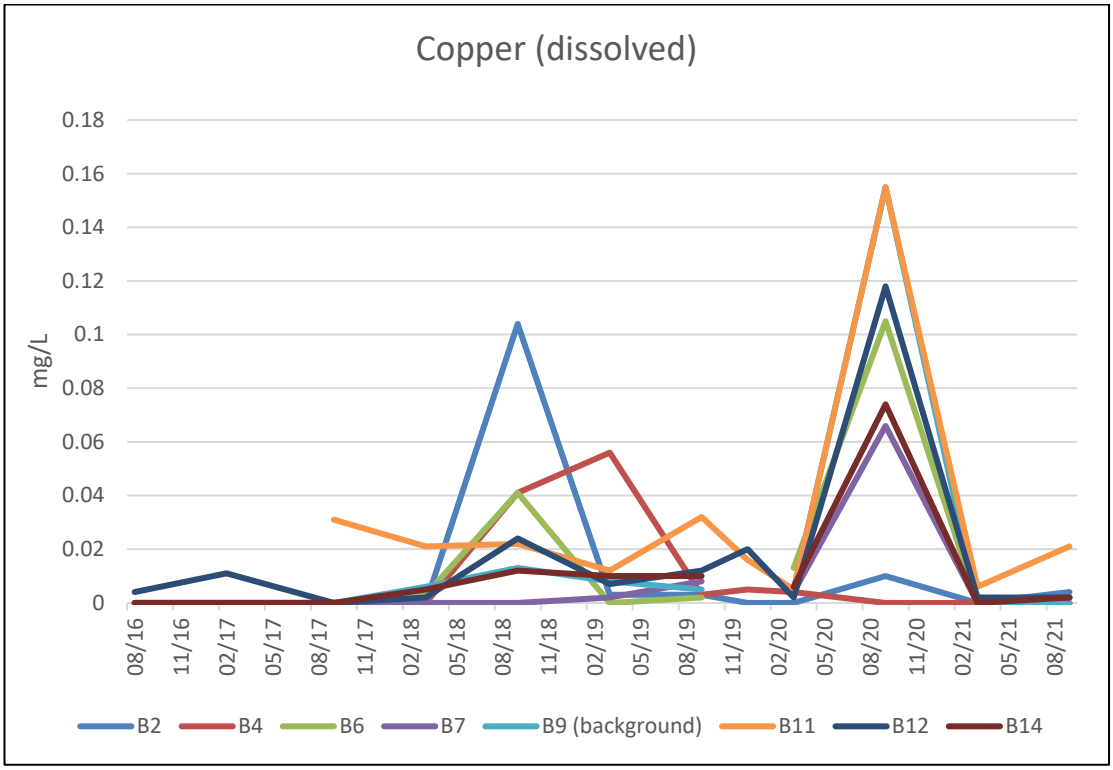

Figure 6-1 Dissolved copper concentrations (monitoring bores)

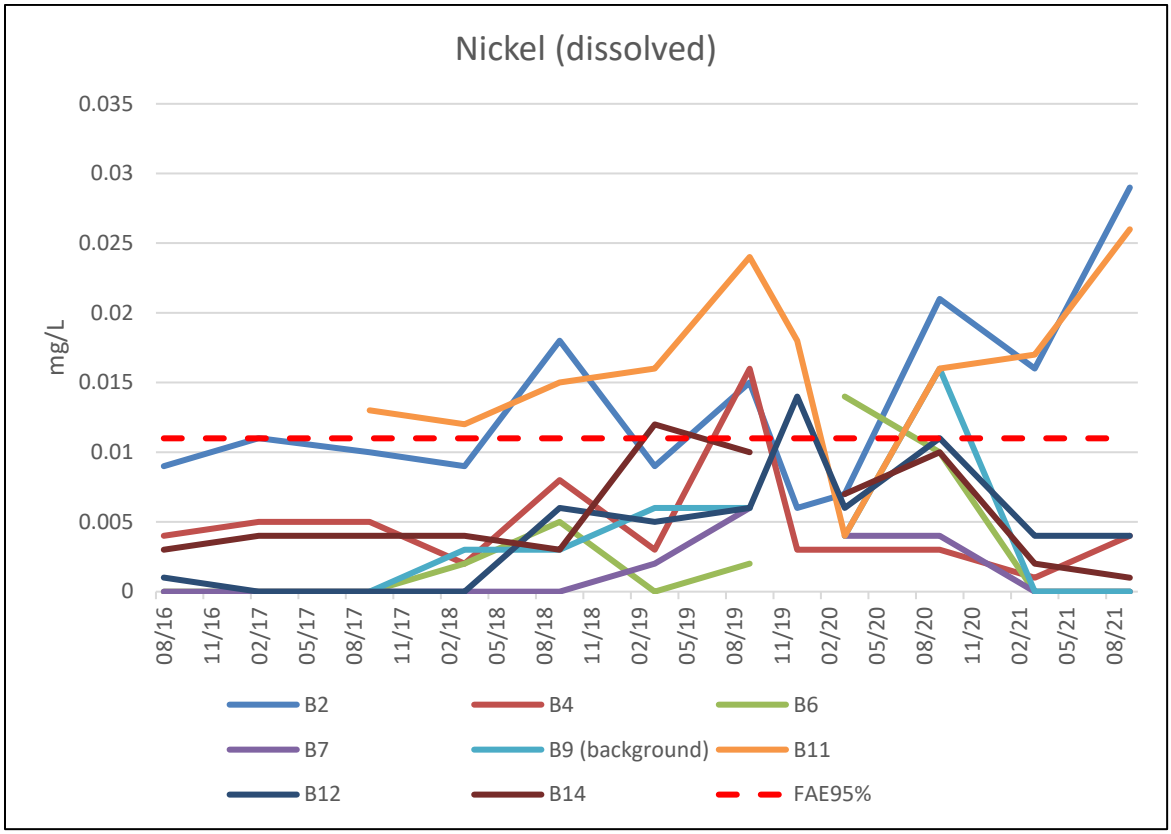

Figure 6-2 ***Dissolved nickel concentrations (monitoring bores)***

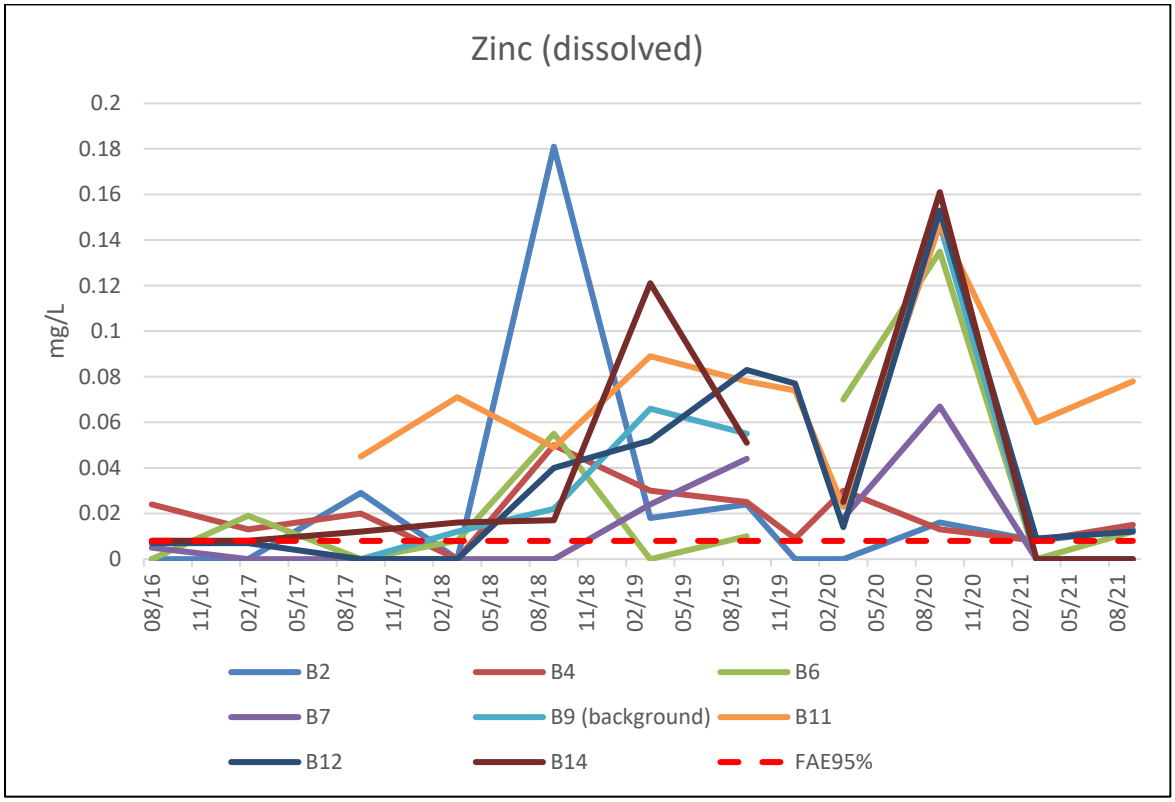

Figure 6-3 ***Dissolved zinc (monitoring bores)***

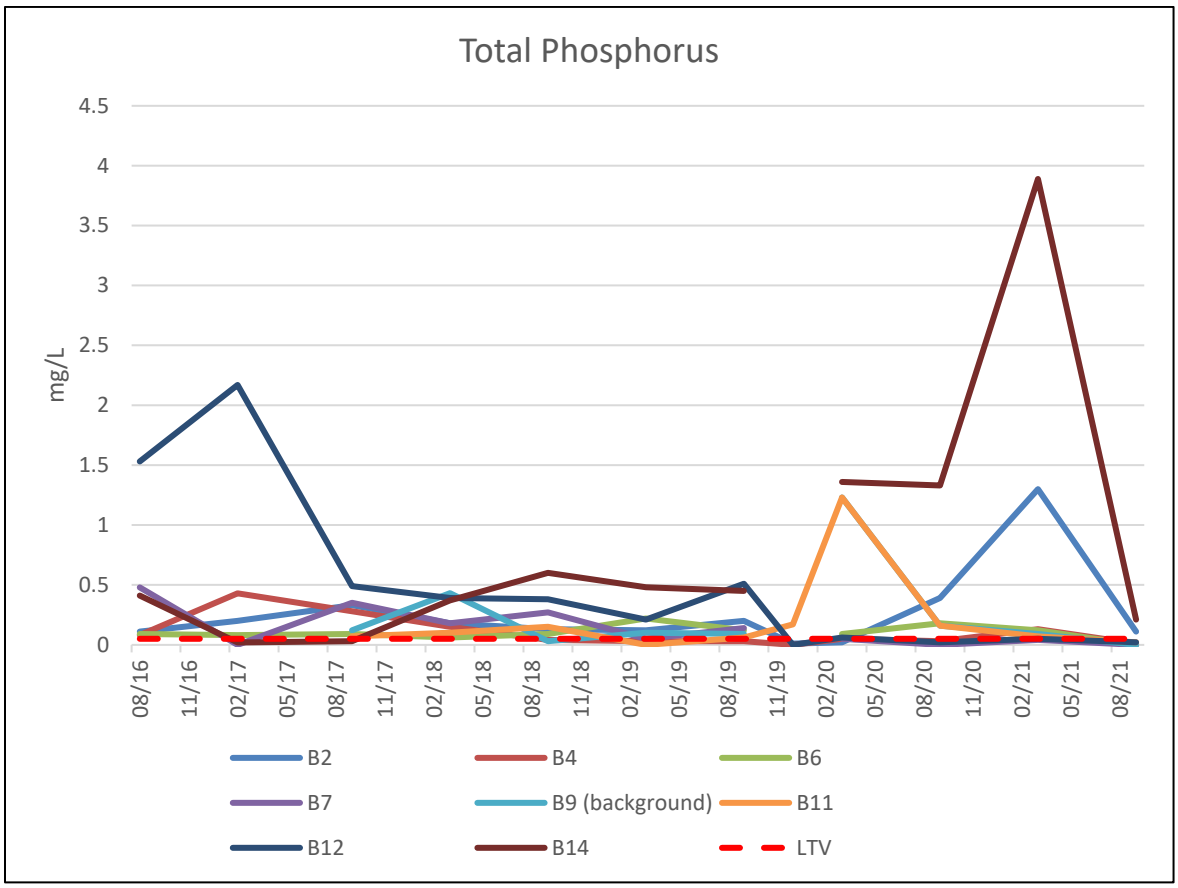

Figure 6-4 *Total Phosphorus (monitoring bores)*

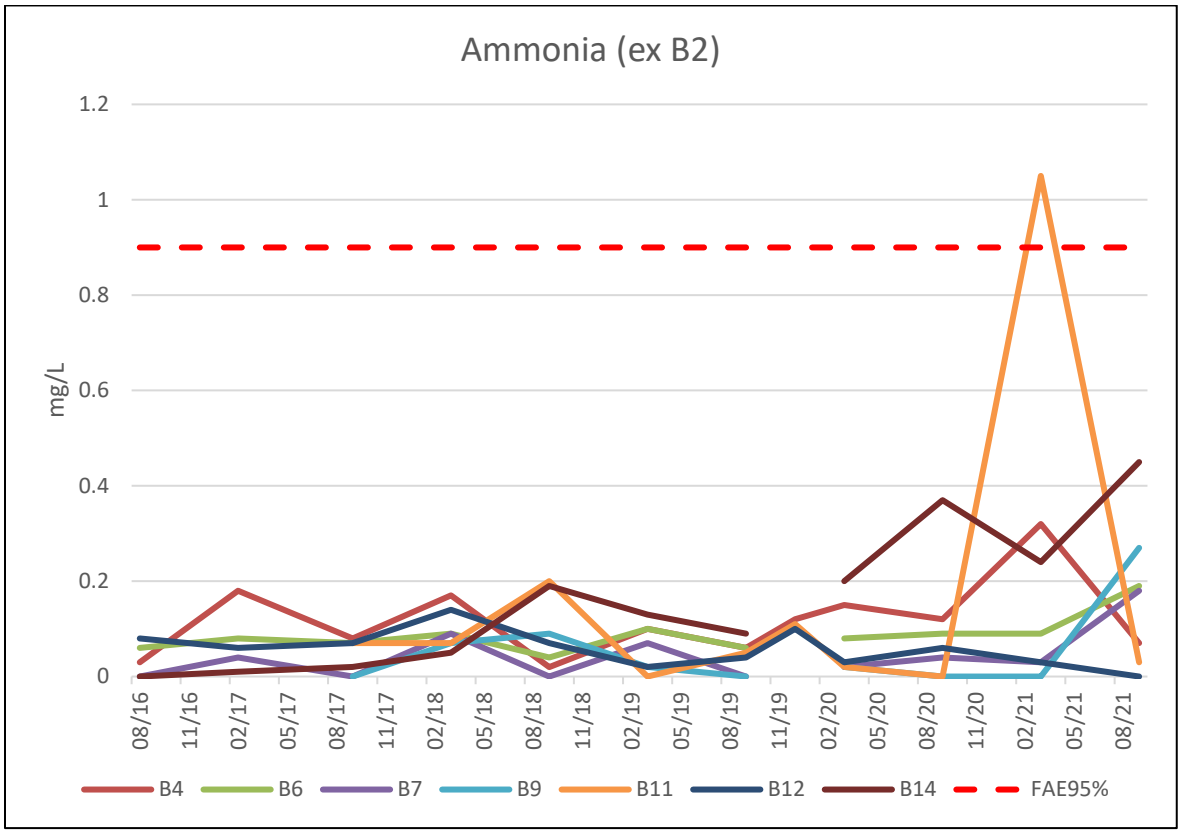

Figure 6-5 *Ammonia concentrations (monitoring bores)*

Total phosphorus concentrations have continued to fluctuate since August 2018. A significant spike was noted in March 2021 at bores B2 and B14, which decreased again during the September 2021 monitoring event. Concentrations in most bores remain elevated with respect to the LTV assessment criteria with the exception of B7 and B12 which were below the LTV criteria in 2021.

Consistent with previous monitoring, ammonia concentrations in groundwater across the site have continued to fluctuate, however, increases were noted at most bores in 2021. A significant spike was noted at bore B11 which resulted in an exceedance of the FAE95% criteria of 0.9 mg/L but levels decreased again in September. Ammonia concentrations also exceeded the FAE95% criteria at bore B2. Concentrations reported in B2 across the monitoring period are consistently above the trigger value, ranging from 4.31 – 8.69 mg/L (a reduction from the previous monitoring period). B2 has not been included in Figure 6-5 as the B2 results skew the scale. It is important to note that ammonia levels at B2 have been elevated since 2016 and have continued to fluctuate. The exact cause of the elevated ammonia concentrations in B2 is still unknown, but should continue to be investigated. As discussed earlier, and in prior reports, given the agricultural regional use, it is not unusual for elevated nutrients such as ammonia and phosphorus to be present on site. However, the high occurrence of ammonia in B2 is unlikely to be a result of enriched elevated ammonia levels from agricultural run-off. Due to its close proximity to the landfill leachate pond, it is possible that landfill leachate could be influencing the elevated levels in B2.

BTEX and TRH were analysed for in both the March and September monitoring events. Minor concentrations of TRH (likely from organic matter) were detected in B2 and B9 in March 2021 with BTEX returning values below the LOR in all groundwater monitoring bores.

Monitoring should continue to draw out any similarities between the landfill leachate and groundwater chemistry signatures. Major ion analysis (discussed later) will also aid in classifying the amount of mixing, if any, of these waters.

6.3.3 2021 Surface water monitoring results

Exceedances for the parameters analysed in the surface water results are shown in Table 6-3. Metals exceedances are dissolved concentrations unless otherwise stated. Results are summarised in Tables 3 and 4 of Appendix C.

Surface water sampling site S3 was dry in March 2021, S6 was dry in June and S7 was dry in March and December. Background site S9 was dry in March and June.

Table 6-3 Summary of surface water parameters above trigger levels in 2021 compared to the previous reporting period

Site	Year	FAE95%	REC	LTV	STV	S&D
S1	2020	*Cu, Ni, Zn*		*Total P, Fe*		
	2021	Cu, Pb, Ni, Zn				
S2	2020	*Cu, Zn*		*Total P*		
	2021	Cu				
S3	2020	*Cu, Zn, Ni, Cr, ammonia,*		*P (total and dissolved), Mn, Total N*	*P (total)*	
	2021	Ammonia, nitrate, Cr (total and dissolved), Cu (total and dissolved), Zn (total and dissolved)		Total N, P total, Fe (total and dissolved), Mn (total and dissolved)	P (total)	
S4	2020	*Cu, Zn*		*Fe*		
	2021	Ammonia, Cr, Cu				
S6	2020	*Cu, Ni, Zn*		*Fe, Total P*		
	2021	Cu				
S7	2020	*Ammonia, Cr, Pb, Ni, Zn, Cu*		*Total N, Total P, Fe, Mn, Chloride*	*Total N, Total P*	
	2021	Ammonia, nitrate, Cr (total and dissolved), Cu (total and dissolved), Pb (total), Ni, Zn (total and dissolved)	Nitrate, nickel	Fe (total and dissolved), Mn (total)	Total N, Total P	
S9	2020	*Cu, Ni, Zn*				
	2021	No exceedances				

Exceedances of the assessment criteria in surface water are similar to the previous reporting period, with a general reduction in overall exceedances, particularly phosphorus. There were no exceedances at background site S9 during the 2021 reporting period.

Increases in dissolved lead and copper were noted at S1 in March 2021, but reduced to undetectable levels in September. Increases in ammonia and chromium were noted at S4 in September 2021. A general reduction in exceedances was noted at S6.

Nitrate levels have generally remained consistent with the previous monitoring rounds with the notable exceptions of sites S3 and S7. Both these sites show an increase in June 2020 monitoring event and again in June 2021 before returning to within the historical range the following sampling event. The cause of this increase in concentration is not known at this stage however could be attributed to the presence of algae / sediment in the pond at the time of monitoring. Figure 6-6 shows trends in total nitrate concentrations.

Phosphorus (total) still persists in concentrations exceeding the LTV criteria of 0.05 mg/L. Some significant spikes have been noted at S7 and S9 (background) during previous monitoring events, however concentrations at all sites generally decreased in 2021. Total phosphorus concentrations at S1 and S2 remained within historical concentrations, with a slight exceedance at S3. Figure 6-7 shows trends in total phosphorus concentrations.

Ammonia concentrations appear to have remained steady over the reporting period and remained within historical levels. Consistent with previous monitoring events, concentrations at S3 and S7 are elevated above the FAE95% trigger levels. An increase at S4 was noted in September 2021 before returning to historical levels.

Previous reports have noted that given the surrounding land use adjacent to the landfill appears to be agricultural (an industry which typically uses fertiliser) and forestry, elevated nutrient levels in background monitoring site(s) are not necessarily unexpected. It is considered that this explanation is still valid, particularly given the significant disturbance and land clearing which has occurred recently on the surrounding land which may have resulted in mobilisation of contaminants.

Copper, lead, and zinc concentrations have generally increased at most locations since 2016, when levels were almost non-detectable, however the concentrations continue to fluctuate over the length of the monitoring period. The concentrations of these metals at background site S9 have also increased or fluctuated, which may explain the elevated concentrations downstream. A general decrease in copper, lead and zinc concentrations was noted in 2021. Figure 6-8 shows the trends in copper concentrations, which experienced a spike at many locations in September 2020 before returning to historical levels.

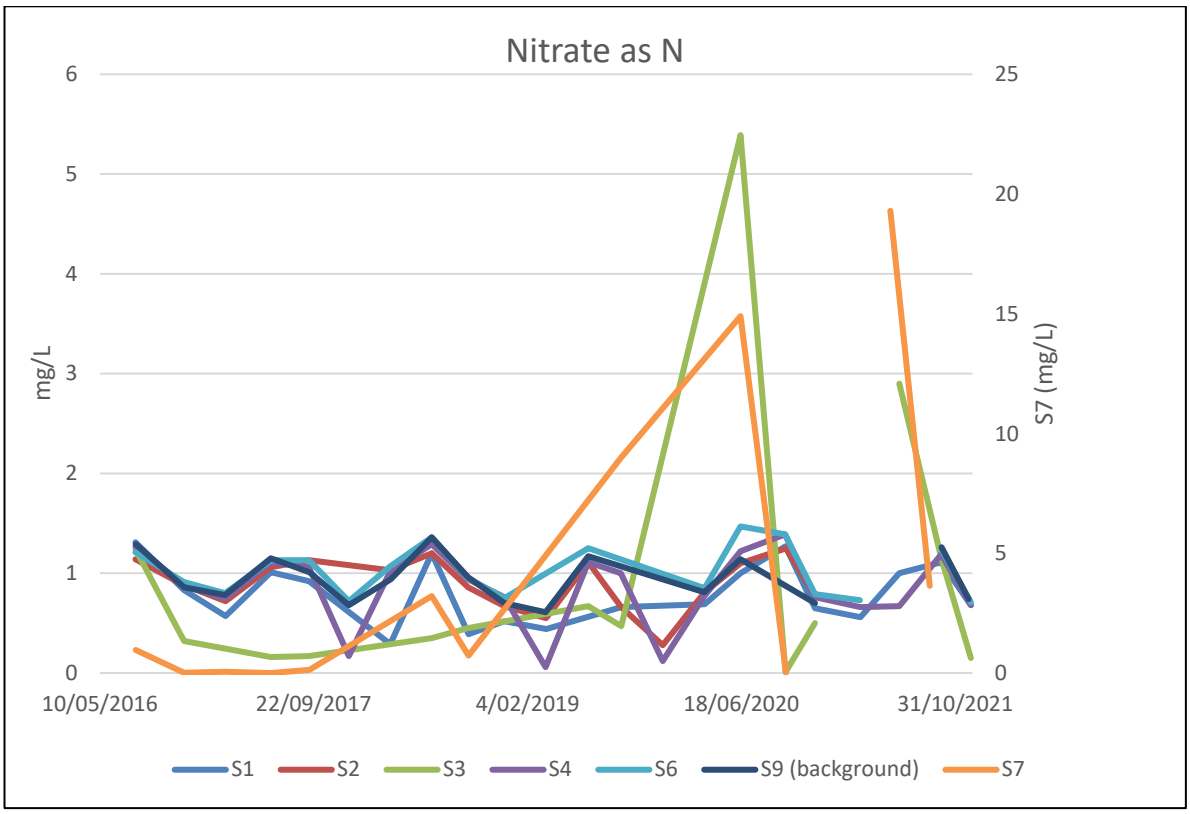

Figure 6-6 Nitrate results at surface water monitoring sites

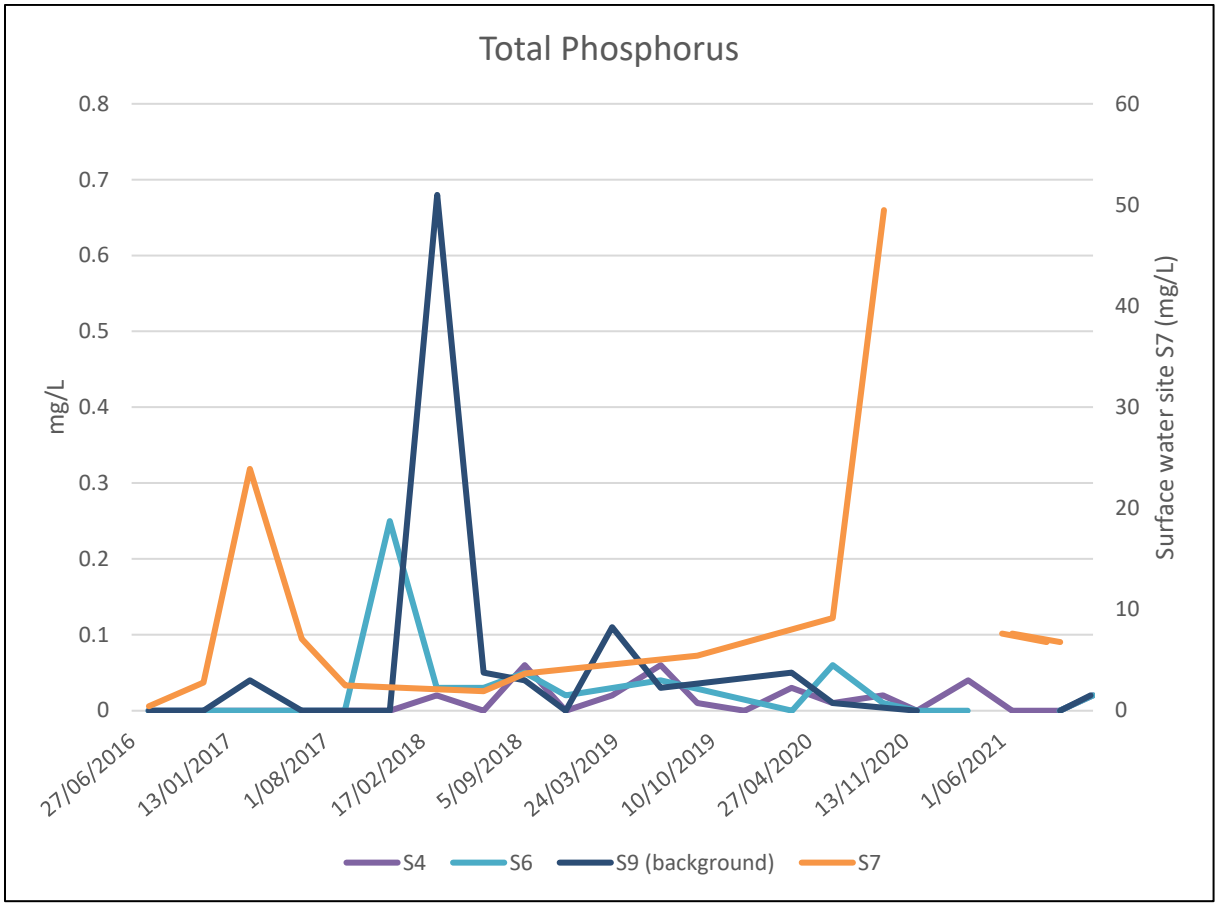

Figure 6-7 *Total phosphorus results at S4, S6, S9 and S7*

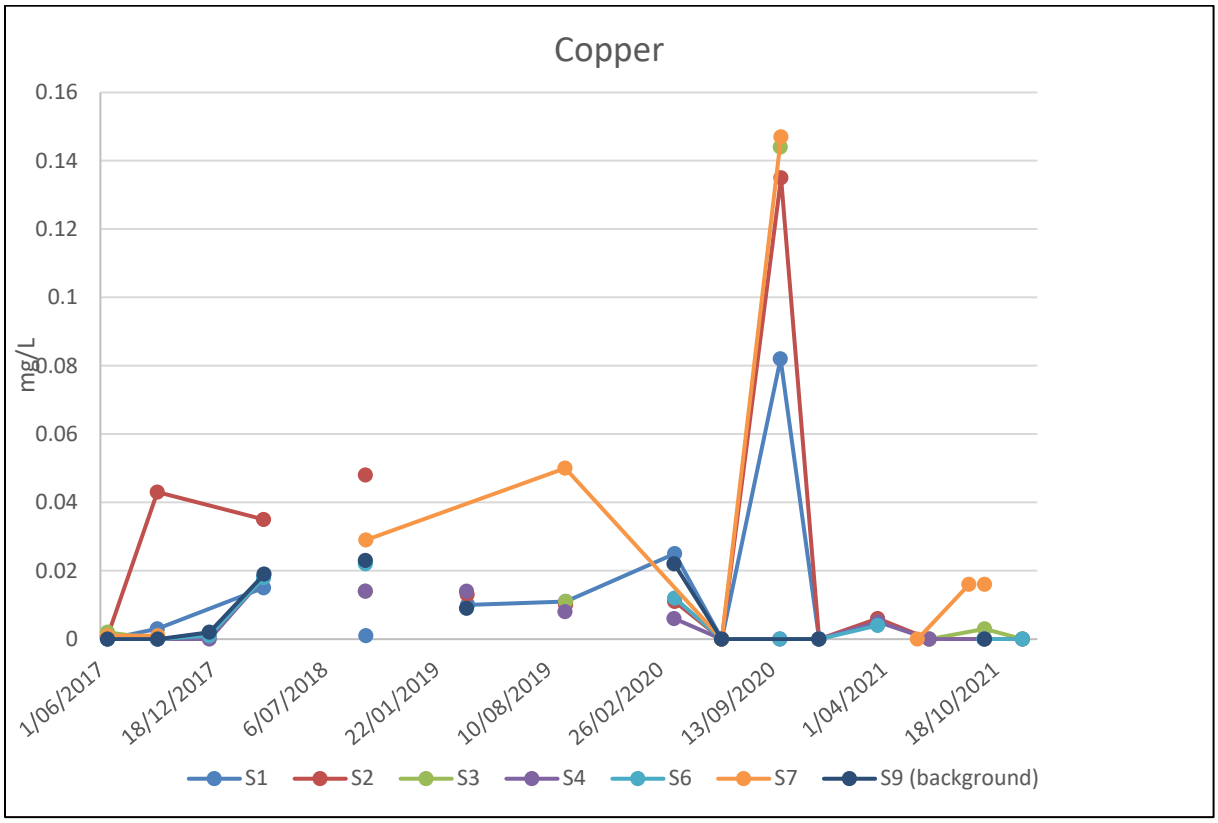

Figure 6-8 *Dissolved copper results at surface water monitoring sites*

6.3.4 2021 Leachate monitoring results

The following section outlines the results of the leachate sampling conducted by GHD at the landfill facility over the most recent monitoring period. Results are summarised in Tables 5 and 6 of Appendix C. Also presented in Table 6 of Appendix C are the quarterly leachate data collected by DRWMA from 2013 until August 2017, in addition to weekly data from 2017 to 2019, for comparison. This section aims to classify the leachate make up so that potential contaminants or parameters can be identified and used to determine if any leachate seepage to the environment has occurred.

Results that are in exceedance of PEV assessment criteria are summarised in Table 6-4. It is important to note that landfill leachate is unlikely to be continuously discharged to Caroline Creek, but does provide a snapshot of the elevated parameters and likely contaminants. Dissolved metals have been used in this report for comparison against trigger levels. In previous reports, total metal values were used in line with the leachate data provided by DRWMA; however, since DRWMA no longer provide leachate data, values for dissolved metals can be used for comparison to allow more accurate assessment of exceedances.

Table 6-4 Summary of leachate parameters above trigger levels in 2021 compared to the previous reporting period

Sampling point	Year	FAE95%	REC	LTV	STV	S&D
Landfill Leachate	*2020*	*Ammonia, Al, As, Cr*, Cu, Cd, Fe, Pb, Ni, Zn*	*As*	*Chloride, Total N, Total P, Cr*, Cu, Fe, Mn*	*Total N, Total P,*	*TDS*
	2021	Cyanide, Ammonia, Al, As, Cr*, Cu, Pb, Ni, Zn	Pb, Mn, Ni, formaldehyde	Chloride, Total N, Total P, As, Cr*, Cu, Fe, Mn, Ni	Total N, Total P, Cr*, Fe	TDS

*Cr III + VI

Exceedances in landfill leachate are generally similar to those noted in the previous report (2020), particularly in relation to nutrients (ammonia, nitrogen and phosphorus), TDS and some metals. However, an increase in some analytes such as cyanide, lead, manganese and nickel were noted in 2021.

Formaldehyde exceeded the drinking water guidelines (REC) in 2021, the last time the guidelines were exceeded for formaldehyde was in 2019, and levels appear to fluctuate.

Cadmium has reduced to undetectable levels in 2021 following guideline exceedances in 2020.

Trends in key COPC are shown in Figures 6-9 to 6-13 below.

It can be seen that the landfill leachate experienced increases in ammonia, nitrogen, arsenic, chromium and nickel during 2021, similar to the increased levels noted in 2019. However, levels do still appear to be fluctuating.

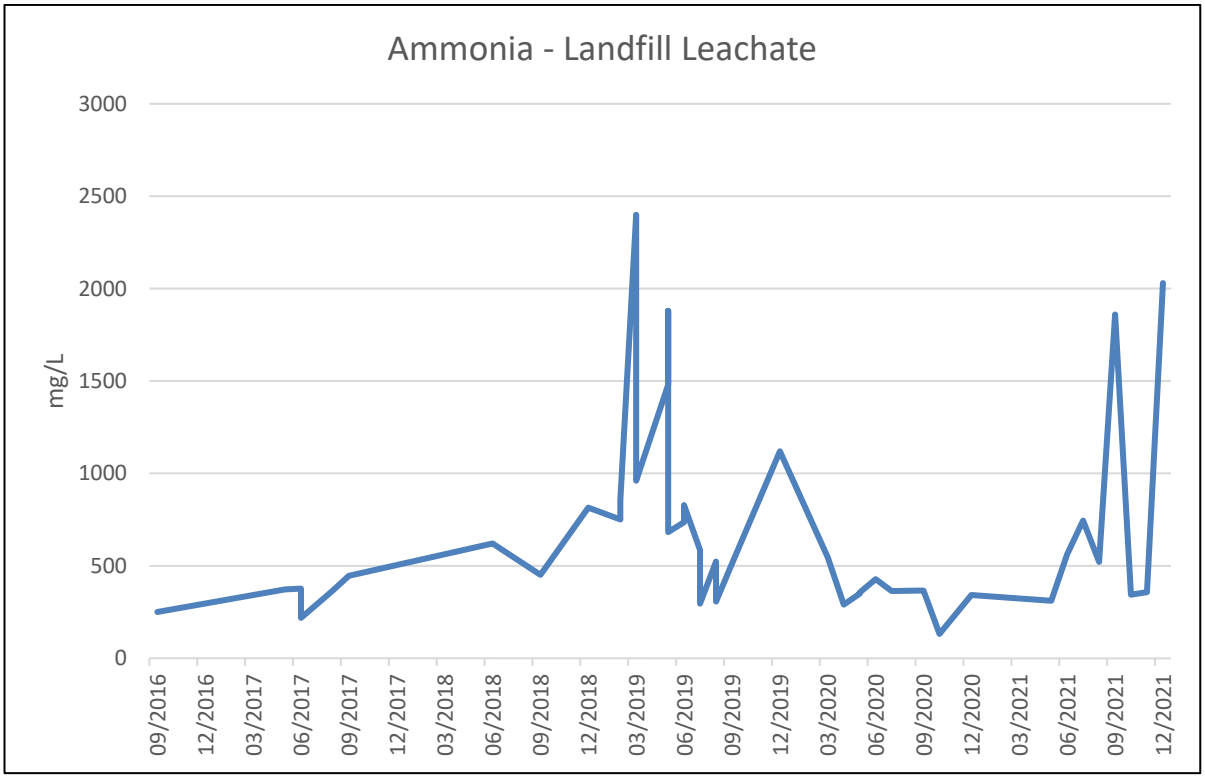

Figure 6-9 *Landfill leachate ammonia concentrations over time*

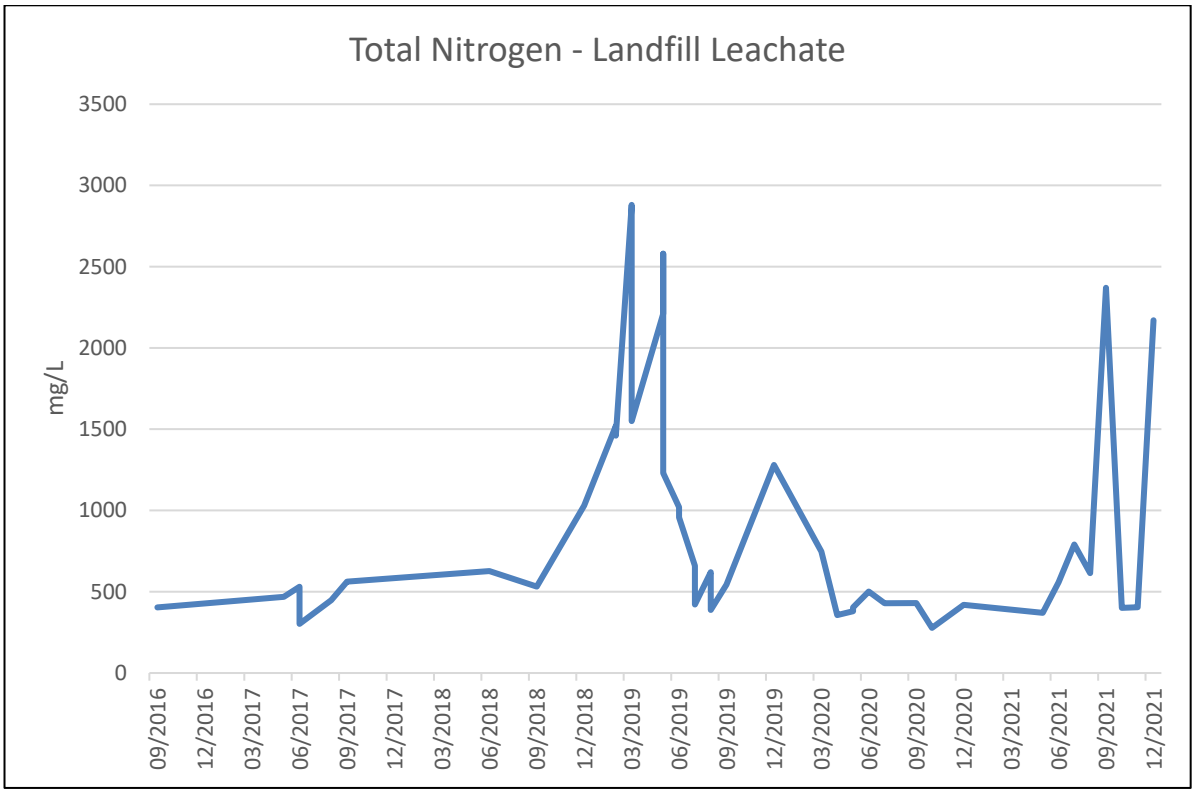

Figure 6-10 *Landfill leachate total nitrogen concentrations over time*

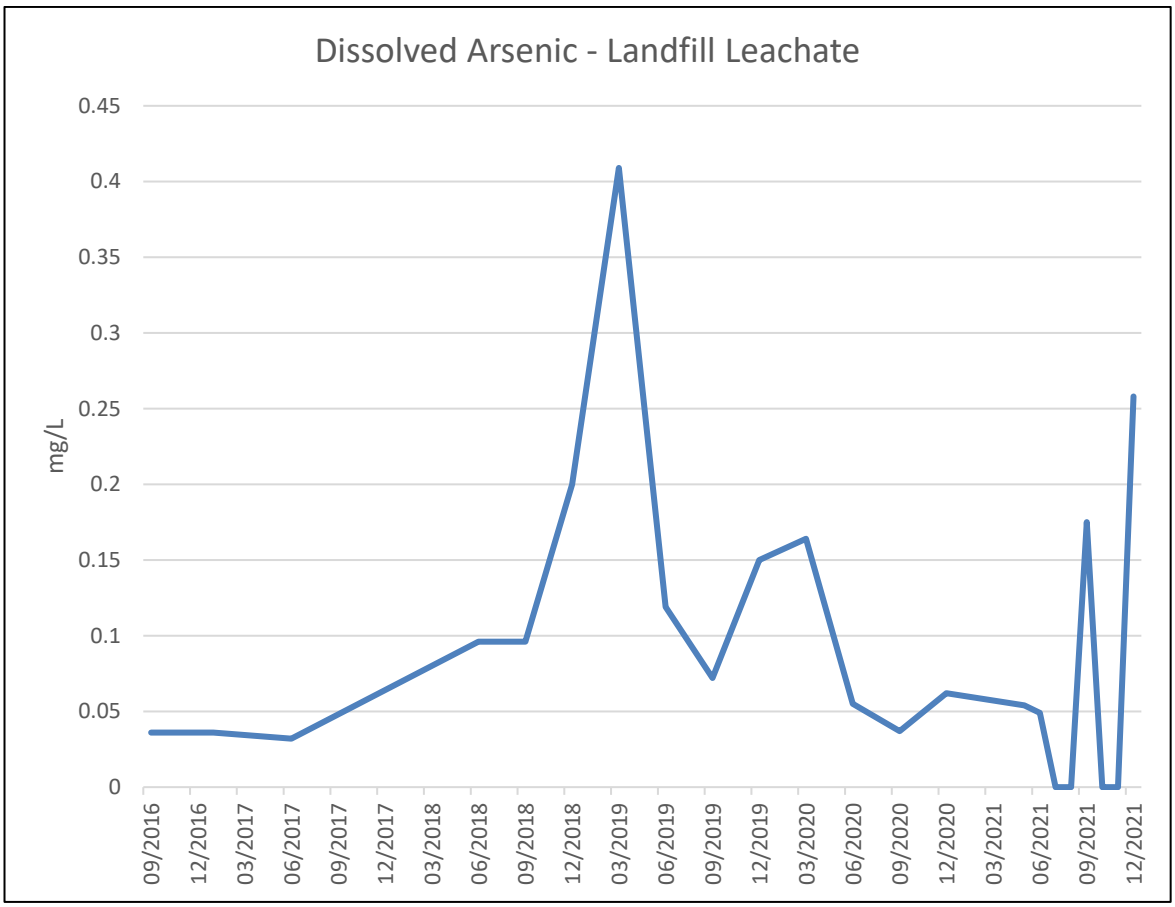

Figure 6-11 Landfill leachate dissolved arsenic concentrations over time

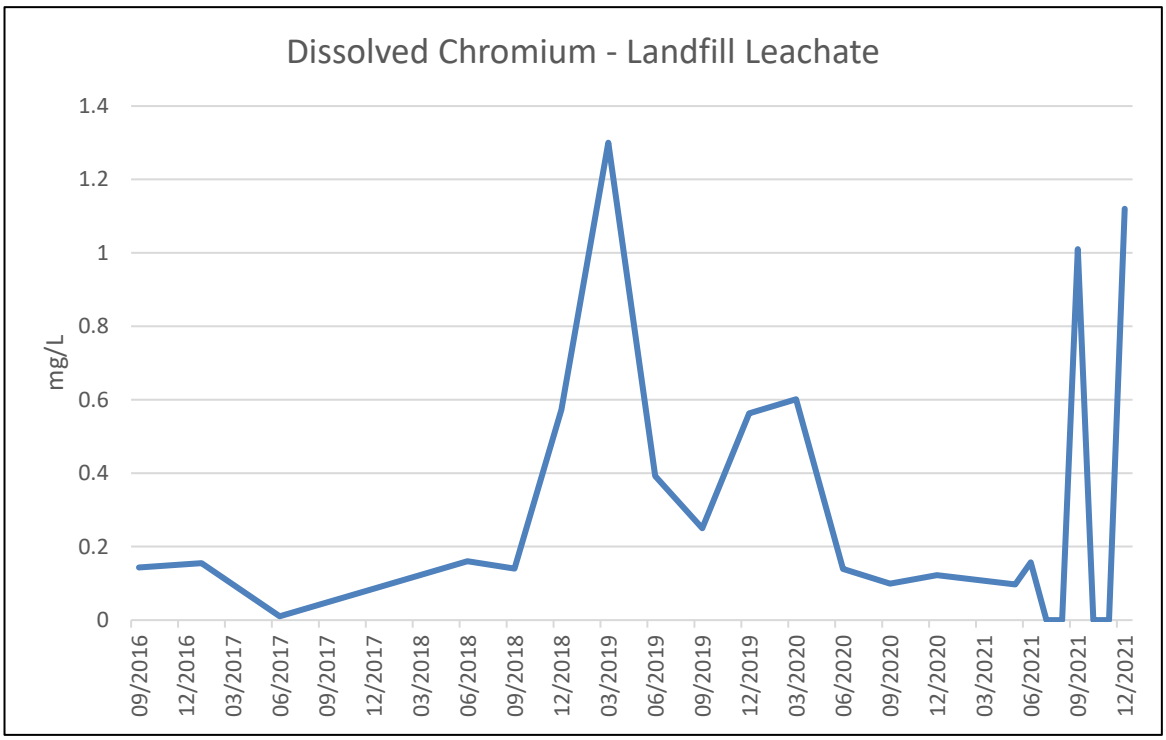

Figure 6-12 Landfill leachate dissolved chromium (III & IV) concentrations over time

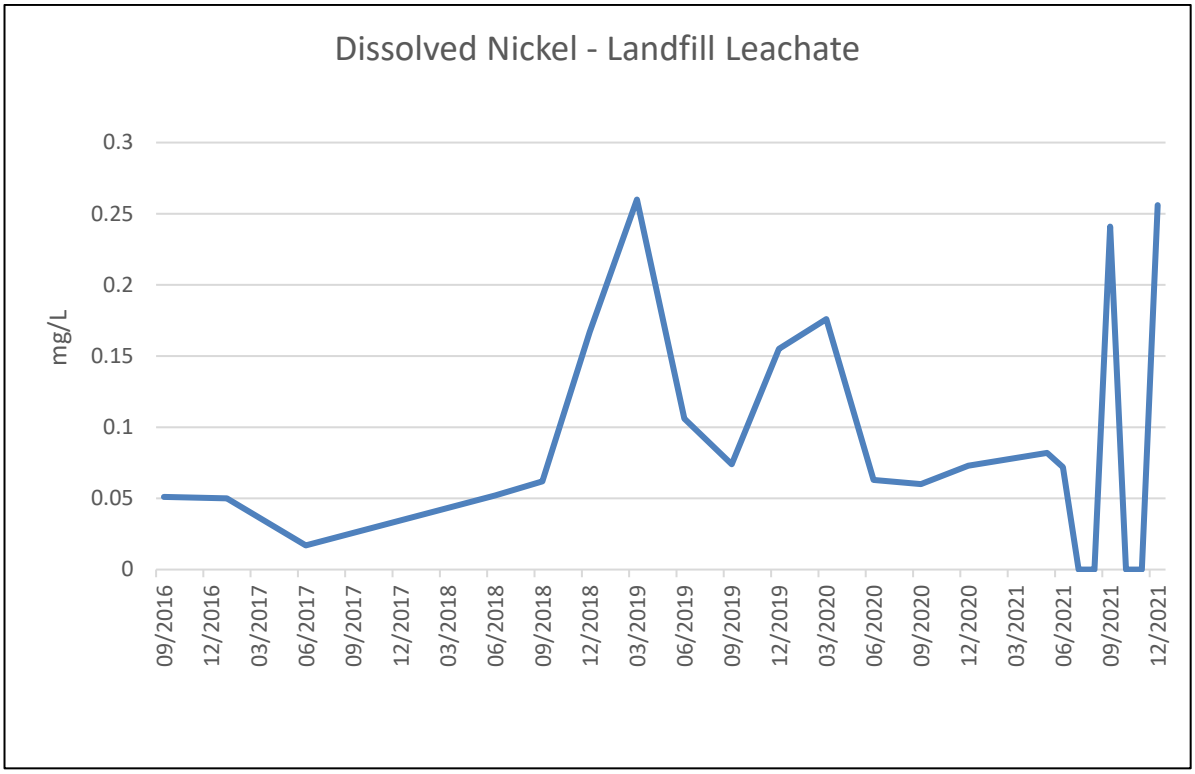

Figure 6-13 Landfill leachate dissolved nickel concentrations over time

Total Recoverable Hydrocarbon (TRH) levels in landfill leachate continue to fluctuate and were slightly higher in 2021 compared to the previous reporting period. It is unknown whether the source of the hydrocarbons is organic matter or petroleum-based products. It is recommended that silica gel clean-up be performed on all landfill leachate samples with detectable TRH concentrations to determine the likely origin.

Methylene Blue Active Substances (MBAS) levels were elevated in September 2021 compared to historical levels, which have tended to fluctuate. MBAS includes anionic surfactants such as detergents and some foams.

PAHs, SVOCs, OC Pesticides, herbicides, PCBs, dioxins, explosives, nitroaromatics and phthlanthates were all recorded at levels close to, or below the laboratory LOR.

The presence of pesticides, phenols, acetone and BTEX in landfill leachate has generally been intermittent and low in concentrations over time. They may be used as tracer parameters for the groundwater and surface water monitoring program, as their presence in the natural environment is limited, although they can be adsorbed and broken down within the aquifer.

7. Discussion & Recommendations

The following discussion and subsequent recommendations should be considered in order to assess more completely the impact of the landfill operations on the surrounding environment. Recommendations from previous annual reports have been implemented, such as the inclusion of major ions and dissolved metals in the analytical suite, and inclusion of additional parameters to landfill leachate. These have contributed to the overall program and validity of the risk assessment, by confirming the presence (or absence in most cases) of these Contaminants of Potential Concern (COPC), or providing further information on the interactions between surface water, groundwater and leachate. A summary of recommendations from this report is provided in Table 7-1.

7.1 Monitoring parameters

7.1.1 Naturally occurring background elements

Collecting background information on regional groundwater and surface water for the site is a key piece of evidence for informing interpretations and risk assessment. Given that it was agreed with Dulverton that the background bore 'B21a' was no longer suitable to collect samples from (as noted in Section 6.3.1), B9 was chosen as a replacement in 2017. There are some differences in reported chemical concentrations that have been observed in the results between the two locations.

B21a reported elevated concentrations of Cd, Cr, Cu, Pb, Ni, Zn over the previously used FAE95% assessment criteria (ANZECC 2000), and total and dissolved Fe and Mn over the STV criteria. Given this, it was speculated that some occurrences of Cd, Cr and Pb recorded in other surface and / or bores were possibly as a result of regional geology, and not landfill leachate. B9 has previously recorded dissolved Cu, and Zn over the FAE95% criteria, in addition to elevated phosphorus levels, but Cd, Cr and Pb are generally below (or close to) the LOR.

The recorded concentrations in B9 may indicate that there aren't naturally elevated concentrations of Cd, Cr and Pb in groundwater for the region. The cause of concentrations reported in B21a are unknown. Therefore, elevated concentrations of Cd, Cr and Pb on site should continue to be investigated in any future risk assessments.

Cd and Cr were not detected at elevated levels during the 2021 monitoring round; with the exception of the exceedance of Cr at B2, which is not considered to be significant (only slightly above the LOR). Pb was elevated at B11 which is consistent with historical results and levels still appear to be fluctuating at that bore.

Concentrations of Cu, Ni and Zn showed a general reduction since the increases noted in 2020, indicating fluctuating levels. However, levels of these metals should continue to be investigated over the next monitoring period to detect any potential increasing trends.

7.1.2 Contaminants of potential concern (COPC)

Dissolved metals have been included in the analytical suite since 2016 when GHD commenced monitoring the site. Consistency should be maintained by ensuring that samples continue to be field filtered for metals in order to build a substantial dataset for risk assessment purposes.

Collection of dissolved metal results has shown that total metal concentrations recorded up until 2016 are higher than the dissolved concentrations on which risk assessment criteria are based. Given this, prior assessments based the total concentrations are conservative at best, as some reported total concentrations (i.e. copper, cadmium, lead and zinc) subsequently reported dissolved concentrations for the same element below the laboratory LOR. Therefore, the risk posed by such elements is lower.

Analysis of landfill leachate intermittently shows levels of BTEX (benzene, toluene, ethylbenzene & xylene) above the laboratory limit of reporting suggesting that these contaminants are present and mobile in the landfill, however not being detected in the groundwater. Groundwater bores were analysed for BTEX over the 2020 period, and levels were below laboratory LORs.

7.1.3 Major ion analysis

As water flows through an aquifer it assumes a diagnostic signature related to the composition of the aquifer material and recharge chemistry. The major anions and cations are used to determine this signature and they can also be used to aid in determining if there is any mixing of water from other potential sources.

The major ions have been plotted on the Piper Plot shown in Figure 7-1 below. The majority of the groundwater appears to be a predominantly calcium bicarbonate type (Ca-HCO_3) or calcium bicarbonate chloride type (Ca-HCO_3-Cl) which is indicative of a groundwater that has had a close association with a limestone aquifer.

Groundwater monitoring bores B6 and B7, are predominantly a sodium chloride (Na-Cl) water type. These bores are recorded as being installed in a silt or sandstone unit suggesting that there may be more than one aquifer underlying the site. B11 is a sodium-calcium-chloride-bicarbonate (Na-Ca-Cl-HCO_3) type water suggesting that it may be a mixture of aquifer waters on site.

The leachate samples tend to be dominated by sodium cations with some variation in chloride and bicarbonate with no obvious indication from the major ion analysis that leachate is migrating into the groundwater system.

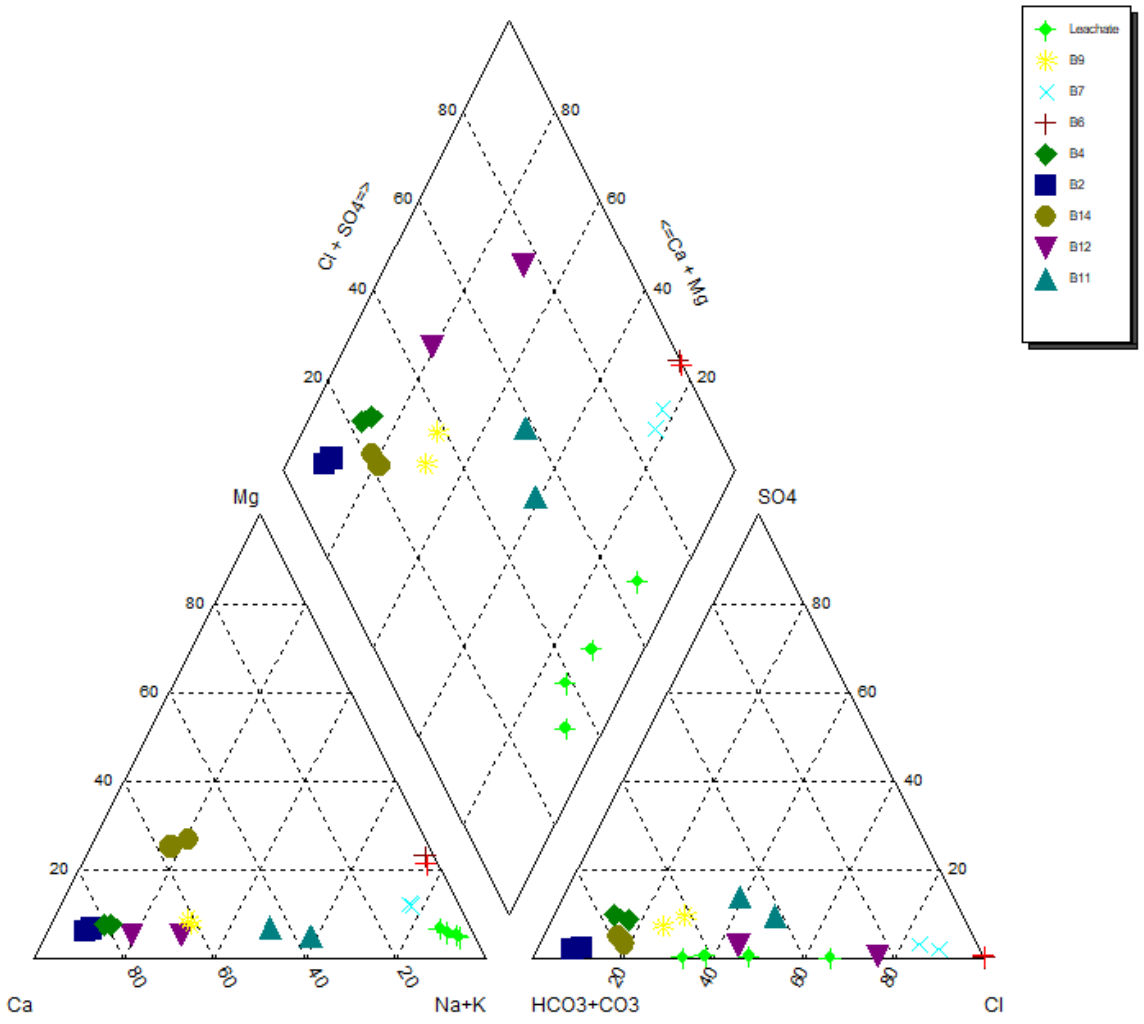

Figure 7-1 Piper Plot indicating groundwater types

7.2 Monitoring frequency

Future monitoring events at the landfill site should continue at the current frequency (as specified in the current EPN and any subsequent changes), unless any changes are required due to site conditions at the time of sampling, or at the request of DRWMA or the EPA.

Parameters will continue to be sampled according to the requirements of the EPN and any changes / additions that have been implemented since it was issued, and relevant standards.

7.3 Groundwater and surface water monitoring network

7.3.1 Groundwater bores

A general condition assessment of all bores should continue be undertaken during monitoring, to identify any bores that require maintenance. This should take into account the condition of the surface seal, if the bores have caps, and if any need to be labelled. If required the bores should be fixed appropriately. No issues were noted in relation to monitoring bore condition during the 2021 monitoring period.

7.3.2 Surface water

A recommendation was made in the previous monitoring report that surface water site S9 (background site) should be replaced due to the fact that it had been dry over a number of consecutive sampling occasions. This may no longer be necessary, as S9 was able to be sampled during three of the four sampling events in 2020. The reason it could not be sampled in September was due to access issues.

7.4 Recommendations

The following table summarises the recommendations from this report.

Table 7-1 Summary of Recommendations

Section	Recommendations	Timing
6.3.4	It is recommended that silica gel clean-up be performed on all landfill leachate samples with detectable TRH concentrations to determine the likely origin.	Quarterly, commencing March 2022
7.1	Elevated concentrations of Cd, Cr and Pb on site should continue to be investigated in any future risk assessments.	Following each quarterly monitoring event
	Levels of Cu, Ni and Zn should continue to be investigated over the next monitoring period to detect any potential increasing trends.	Following each six monthly monitoring event
7.2	Future monitoring events at the landfill site should continue at the current frequency (as specified in the current EPN and any subsequent changes), unless any changes are required due to site conditions at the time of sampling, or at the request of DRWMA or the EPA. Parameters will continue to be sampled according to the requirements of the EPN and any changes /	On-going

	additions that have been implemented since it was issued, and relevant standards.	
7.3.1	A general condition assessment of all bores should continue to be undertaken during monitoring to identify any bores that require maintenance.	During each groundwater monitoring event

Appendices

Appendix A

Sampling and Analysis Plan

Appendix A – Sampling and analysis plan

Data Quality Objectives

The purpose of establishing Data Quality Objectives (DQOs) is to ensure that the field investigations and subsequent analyses are undertaken in a way that enables the collection and reporting of reliable data on which to base the assessment.

A process for establishing DQOs for a site has been defined by the US EPA. That process has been adopted within the Australian Standard: AS 4482.1-2005 and referenced by the *National Environment Protection (Assessment of Site Contamination) Measure* (NEPC, 1999). The DQO process was taken into account in designing the scope of work carried out over the course of the program.

Investigation Strategy

The works will include monitoring of all groundwater bores and surface water sites and leachate sumps associated with the landfill site.

Groundwater Investigation

Groundwater samples were collected in accordance with the following guidelines:

- *AS/NZ 5667.1:1998*: Water Quality – Sampling. Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples. Standards Australia, New South Wales; and
- *AS/NZ 5667.11:1998:* Water quality – Sampling. Part 11: Guidance on sampling of groundwaters. Standards Australia, New South Wales.
- Groundwater Sampling

Groundwater sampling and analysis will be conducted on all existing monitoring bores as follows:

- The standing water level and LNAPL thickness (if present) will be gauged using an electronic interface probe;
- Bores which do not contain LNAPL will be purged and sampled using either pre-installed waterra inertial tubing or with clean, disposable bailers. During sampling, field parameters (pH, electrical conductivity (EC), oxidation-reduction potential (redox), dissolved oxygen (DO) and temperature) will be recorded. The presence of a sheen or odour will be noted;
- When field parameters (i.e. pH and EC) reach equilibrium (i.e. consecutive measurements within 10% of each other), a groundwater sample will be collected directly from the dedicated waterra tubing or bailer;
- The groundwater samples will be immediately placed into laboratory prepared bottles suitable for the required analyses. The sample containers will be labelled with the job number, sample identification, date collected and sampler's initials;
- Sample bottles will be immediately transferred to an ice filled cooler for preservation prior to being transported to the contract laboratory. Samples will be accompanied with chain of custody documentation to the project laboratory;
- Groundwater samples will be submitted for laboratory analysis in accordance with the EPN 7158/3; and
- Quality assurance / quality control sampling will include one blind duplicate and one split duplicate (where required).

Surface Water Investigation

Surface water samples (including leachate) were collected in accordance with the following guidelines:

- *AS/NZ 5667.1:1998*: Water Quality – Sampling. Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples. Standards Australia, New South Wales; and
- *AS/NZ 5667.6:1998:* Water quality – Sampling. Part 6: Guidance on sampling of rivers and streams. Standards Australia, New South Wales.

Surface Water Sampling

Surface water sampling and analysis was conducted as follows:

- Samples will be collected from leachate and surface water using laboratory supplied bottles and preservatives suitable for the selected analysis.
- The surface water and leachate samples will be immediately placed into laboratory prepared bottles suitable for the required analyses. The sample containers will be labelled with the job number, sample identification, date collected and sampler's initials;
- Sample bottles will be immediately transferred to an ice filled cooler for preservation prior to being transported to the contract laboratory. Samples will be accompanied with chain of custody documentation to the project laboratory;
- Surface water and leachate samples will be submitted for laboratory analysis in accordance with the EPN 7189/2; and
- Quality assurance / quality control sampling will include one blind duplicate and one split duplicate. (where required)

Appendix B

Quality Control and Assurance Plan

Appendix B – QA/QC Information

Field Program

All fieldwork was conducted in general accordance with GHD's Standard Field Operating Procedures (SFOP), which are aimed at collecting environmental samples using uniform and systematic methods, as required by GHD's Quality Assurance system. Key requirements of these procedures are as follows:

- Decontamination procedures – including the use of new disposable gloves for the collection of each sample, decontamination of all multiple use sampling equipment between each sampling location using a phosphate free detergent (i.e. Decon 90) and the use of dedicated sampling containers provided by the laboratory;
- Sample identification procedures – collected samples were immediately transferred to sample containers of appropriate composition and preservation for the required laboratory analysis. All sample containers were clearly labelled with a sample number, sample location, sample depth and sample date. The sample containers were then transferred to an ice filled cooler for sample preservation prior to and during shipment to the testing laboratory;
- Chain of custody protocols – a chain-of-custody form was completed and forwarded to the testing laboratory with each discrete batch of samples; and
- Sample duplicate frequency – field duplicates (blinds and splits) were collected and analysed at a rate not less than 10%.

Field Quality Control

All field works were conducted by experienced environmental scientists in general accordance with GHD's SFOP. Field quality control procedures used during the project comprised the collection and analysis of the following:

Blind duplicates: Comprise a single sample that is divided into two separate sampling containers. Both samples are sent anonymously to the primary laboratory. Blind duplicates provide an indication of the analytical precision of the laboratory, but are inherently influenced by other factors such as sampling techniques and sample media heterogeneity.

Split duplicates: Identical to a blind duplicate, except that the primary sample is sent to the project (primary) laboratory and the duplicate is sent to a secondary laboratory (check laboratory).

One blind duplicate (QC1) and one split duplicate (QQC1) sample (where required) were collected and analysed during each quarterly monitoring event, as part of the overall sampling program.

The precision of the data is assessed by calculating the Relative Percent Difference (RPD) between duplicate sample pairs, using the following formula:

$$RPD(\%) = \frac{|C_o - C_d|}{C_o + C_d} \times 200$$

Where Co = Analyte concentration of the original sample

Cd = Analyte concentration of the duplicate sample

GHD adopts nominal acceptance criteria of 30% and 50% RPD for field duplicates of inorganics and organics, respectively. Blind and split duplicate samples should return RPDs within these

criteria, however it is noted that the criteria will not always be achieved, particularly in heterogeneous soil or fill materials, or at low analyte concentrations.

The project laboratories (ALS Melbourne/ALS Sydney) adopted their internal procedures and NATA accredited methods in accordance with their quality assurance systems.

Laboratory Quality Control

Laboratory quality control procedures used during the project were:

Laboratory duplicate samples: The analytical laboratory collects duplicate sub samples from one sample submitted for analytical testing at a rate equivalent to one in twenty samples per analytical batch, or one sample per batch if less than twenty samples are analysed in a batch. A laboratory duplicate provides data on the analytical precision and reproducibility of the test result.

Spiked Samples: An authentic field sample is 'spiked' by adding an aliquot of known concentration of the target analyte(s) prior to sample extraction and analysis. A spike documents the effect of the sample matrix on the extraction and analytical techniques. Spiked samples will be analysed for each batch where samples are analysed for organic chemicals of concern.

Laboratory Control Sample: A reference standard of known concentration is analysed along with a batch of samples. The Laboratory Control Sample provides an indication of the analytical accuracy and the precision of the test method and is used for inorganic analyses.

Surrogate Standard/Spikes: These are organic compounds which are similar to the analyte of interest in terms of chemical composition, extractability, and chromatographic conditions (retention time), but which are not normally found in environmental samples. These surrogate compounds are 'spiked' into blanks, standards and samples submitted for organic analyses by gas-chromatographic techniques prior to sample extraction. Surrogate Standard/Spikes provide a means of checking that no gross errors have occurred during any stage of the test method leading to significant analyte loss.

Method Blank: Usually an organic or aqueous solution that is as free as possible of analytes of interest to which is added all the reagents, in the same volume, as used in the preparation and subsequent analysis of the samples. The reagent blank is carried through the complete sample preparation procedure and contains the same reagent concentrations in the final solution as in the sample solution used for analysis. The reagent blank is used to correct for possible contamination resulting from the preparation or processing of the sample.

The laboratory is required to provide this information to GHD. The individual testing laboratories conduct an internal assessment of the laboratory QC program; however, the results were also independently reviewed and assessed by GHD.

Laboratory duplicate samples should return RPDs within the NEPM acceptance criteria of ±30%. Percent recovery is used to assess spiked samples and surrogate standards. Percent recovery, although dependent on the type of analyte tested, the concentrations of analytes, and the sample matrix; should normally range from about 70-130%. Method (laboratory) blanks should return analyte concentrations as 'below the practical quantitation limit (PQL)'.

Laboratory QA/QC documentation is provided in Appendix E.

Appendix C

Summary Tables

Table 1 - Groundwater 2021

						Acidity & Alkalinity											
Table 1: Groundwater 2021			Electrical conductivity (lab)	Total Dissolved Solids	Total Dissolved Solids (est.)	Alkalinity (Carbonate as CaCO3)	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide as CaCO3)	Alkalinity (total as CaCO3)	Calcium (filtered)	Magnesium (filtered)	Potassium (filtered)	Sodium (filtered)	Chloride	Sulfate (filtered)	Cations Total
			µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L
EQL			1	10	1	1	1	1	1	1	1	1	1	1	1	0.01
ANZECC 2000 - Stock Watering				5,000	5,000					1,000					1,000	
ANZG (2018) - FW - 95% (updated 26 July 2021)																
ADWG 2011 Health (v3.6 updated 2021)															500	
ANZECC 2000 Irrigation - Long-term Trigger Values			2,900											350		
ANZECC 2000 Irrigation - Short-term Trigger Values																
Date	**Field ID**	**Lab Report Number**														
24/03/2021	B2	EM2105221	-	1,120	-	<1	171	<1	171	145	12	46	242	100	48	19.9
29/09/2021		EM2119450	1,230	-	800	<1	261	<1	261	94	9	24	105	218	58	10.6
24/03/2021	B4	EM2105221	-	1,660	-	<1	288	<1	288	283	14	<1	151	660	5	21.8
29/09/2021		EM2119450	-	-	-	<1	271	<1	271	142	6	<1	41	160	14	9.36
23/03/2021	B6	EM2105110	-	250	-	<1	181	<1	181	56	15	2	19	27	11	4.91
28/09/2021		EM2119193	-	258	-	<1	176	<1	176	42	13	2	18	30	7	4.00
23/03/2021	B7	EM2105110	-	303	-	<1	249	<1	249	95	4	<1	11	16	5	5.55
28/09/2021		EM2119193	-	335	-	<1	198	<1	198	84	4	<1	11	16	5	5.00
24/03/2021	B9	EM2105221	-	533	-	<1	171	<1	171	70	4	<1	12	21	21	4.34
28/09/2021		EM2119193	-	198	-	<1	124	<1	124	51	3	<1	10	20	14	3.23
23/03/2021	B11	EM2105110	-	430	-	<1	<1	<1	<1	2	10	1	67	263	2	7.14
29/09/2021		EM2119450	-	-	-	<1	<1	<1	<1	2	15	2	91	347	1	10.3
23/03/2021	B12	EM2105110	-	160	-	<1	9	<1	9	3	2	<1	25	41	2	1.40
29/09/2021		EM2119450	174	-	113	<1	5	<1	5	3	2	<1	24	34	1	1.36
22/03/2021	B14	EM2104983	-	712	-	<1	430	<1	430	118	9	9	63	114	44	9.60
28/09/2021		EM2119193	-	2,230	-	<1	296	<1	296	119	10	7	62	99	44	9.64

Table 1 - Groundwater 2021

				Minor Ions												
Table 1: Groundwater 2021			Anions Total	Ionic Balance	Iodide	Bromide	Ammonia as N	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total Oxidised) (as N)	Nitrogen (Total)	Kjeldahl Nitrogen Total	Reactive Phosphorus as P	Phosphorus (Total)	BOD	Dissolved Organic Carbon
			meq/L	%	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.01	0.01	10	0.01	0.01	0.01	0.01	0.01	0.1	0.1	0.01	0.01	2	1
ANZECC 2000 - Stock Watering								90	9.1							
ANZG (2018) - FW - 95% (updated 26 July 2021)							0.9	2.4								
ADWG 2011 Health (v3.6 updated 2021)					500			11.29	0.91							
ANZECC 2000 Irrigation - Long-term Trigger Values											5			0.05		
ANZECC 2000 Irrigation - Short-term Trigger Values											25			0.8		
Date	**Field ID**	**Lab Report Number**														
24/03/2021	B2	EM2105221	7.24	46.7	<500	0.105	4.31	2.38	0.15	2.53	11.1	8.6	0.12	1.30	<10	9
29/09/2021		EM2119450	12.6	8.45	42	0.275	8.69	0.10	0.02	0.12	8.7	8.6	<0.01	0.11	<10	17
24/03/2021	B4	EM2105221	24.5	5.69	<500	0.490	0.32	0.02	<0.01	0.02	0.4	0.4	<0.01	0.13	<10	<1
29/09/2021		EM2119450	10.2	4.37	33	0.161	0.07	<0.01	<0.01	<0.01	0.2	0.2	<0.01	0.01	<10	2
23/03/2021	B6	EM2105110	4.61	3.15	<500	<0.500	0.09	<0.01	<0.01	<0.01	0.1	0.1	<0.01	0.12	<10	<1
28/09/2021		EM2119193	4.51	5.98	-	-	0.19	<0.01	<0.01	<0.01	0.2	0.2	<0.01	<0.01	<10	<1
23/03/2021	B7	EM2105110	5.53	0.16	<500	<0.500	0.03	<0.01	<0.01	<0.01	<0.1	<0.1	<0.01	0.04	<10	<1
28/09/2021		EM2119193	4.51	5.13	-	-	0.18	<0.01	<0.01	<0.01	0.1	0.1	<0.01	<0.01	<10	<1
24/03/2021	B9	EM2105221	4.45	1.16	<500	0.056	<0.01	0.49	<0.01	0.49	1.0	0.5	<0.01	0.09	<10	<1
28/09/2021		EM2119193	3.33	1.62	-	-	0.27	0.26	<0.01	0.26	0.6	0.3	0.15	<0.01	<10	10
23/03/2021	B11	EM2105110	7.46	2.20	<500	<0.500	1.05	<0.01	0.01	<0.01	1.3	1.3	<0.01	0.07	8	<1
29/09/2021		EM2119450	9.81	2.45	114	0.353	0.03	<0.01	<0.01	<0.01	0.5	0.5	<0.01	0.02	7	3
23/03/2021	B12	EM2105110	1.38	0.85	<500	<0.500	0.03	2.16	<0.01	2.16	3.1	0.9	<0.01	0.05	<10	<1
29/09/2021		EM2119450	1.24	4.56	<10	0.081	<0.01	2.24	<0.01	2.24	2.5	0.3	<0.01	0.02	<10	2
22/03/2021	B14	EM2104983	12.7	14.0	<500	<0.500	0.24	<0.01	<0.01	<0.01	11.3	11.3	<0.01	3.89	<10	2
28/09/2021		EM2119193	9.62	0.07	-	-	0.45	<0.01	<0.01	<0.01	1.1	1.1	<0.01	0.21	<10	5

Table 1 - Groundwater 2021

Table 1: Groundwater 2021			Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Chromium (III+VI) (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.001	0.001	0.0001	0.0001	0.001	0.001	0.001	0.001	0.05	0.05	0.001	0.001	0.001	0.001
ANZECC 2000 - Stock Watering			0.5	0.5	0.01	0.01	1	1	1	1			0.1	0.1		
ANZG (2018) - FW - 95% (updated 26 July 2021)			0.013	0.013	0.0002	0.0002	0.001	0.001	0.0014	0.0014			0.0034	0.0034	1.9	1.9
ADWG 2011 Health (v3.6 updated 2021)			0.01	0.01	0.002	0.002			2	2			0.01	0.01	0.5	0.5
ANZECC 2000 Irrigation - Long-term Trigger Values			0.1	0.1	0.01	0.01	0.1	0.1	0.2	0.2	0.2	0.2	2	2	0.2	0.2
ANZECC 2000 Irrigation - Short-term Trigger Values			2	2	0.05	0.05	1	1	5	5	10	10	5	5	10	10
Date	**Field ID**	**Lab Report Number**														
24/03/2021	B2	EM2105221	-	0.002	-	<0.0001	-	<0.001	-	<0.001	-	23.4	-	<0.001	-	2.89
29/09/2021		EM2119450	-	0.001	-	0.0001	-	0.002	-	0.004	-	3.79	-	<0.001	-	0.533
24/03/2021	B4	EM2105221	-	<0.001	-	<0.0001	-	<0.001	-	<0.001	-	29.9	-	<0.001	-	0.571
29/09/2021		EM2119450	-	<0.001	-	<0.0001	-	<0.001	-	<0.001	-	6.28	-	<0.001	-	0.214
23/03/2021	B6	EM2105110	-	<0.001	-	<0.0001	-	<0.001	-	<0.001	-	3.36	-	<0.001	-	0.103
28/09/2021		EM2119193	0.001	<0.001	<0.0001	-	0.002	<0.001	0.024	0.002	13.8	<0.05	0.005	<0.001	0.136	0.070
23/03/2021	B7	EM2105110	-	<0.001	-	<0.0001	-	<0.001	-	<0.001	-	<0.05	-	<0.001	-	0.005
28/09/2021		EM2119193	<0.001	<0.001	<0.0001	-	<0.001	<0.001	<0.001	<0.001	0.14	<0.05	<0.001	<0.001	0.006	0.002
24/03/2021	B9	EM2105221	-	<0.001	-	<0.0001	-	<0.001	-	<0.001	-	<0.05	-	<0.001	-	0.001
28/09/2021		EM2119193	0.001	<0.001	0.0002	-	0.011	<0.001	0.006	<0.001	5.99	<0.05	0.008	<0.001	0.992	0.001
23/03/2021	B11	EM2105110	-	<0.001	-	<0.0001	-	<0.001	-	0.006	-	61.1	-	0.003	-	0.091
29/09/2021		EM2119450	-	<0.001	-	<0.0001	-	0.001	-	0.021	-	72.3	-	0.017	-	0.128
23/03/2021	B12	EM2105110	-	<0.001	-	<0.0001	-	<0.001	-	0.002	-	<0.05	-	<0.001	-	0.020
29/09/2021		EM2119450	-	<0.001	-	<0.0001	-	<0.001	-	0.002	-	<0.05	-	<0.001	-	0.026
22/03/2021	B14	EM2104983	-	<0.001	-	<0.0001	-	<0.001	-	<0.001	-	0.51	-	<0.001	-	0.105
28/09/2021		EM2119193	0.006	<0.001	0.0007	-	0.129	<0.001	0.147	0.002	37.4	<0.05	0.114	<0.001	0.461	0.010

Table 1 - Groundwater 2021

													BTEXN			
Table 1: Groundwater 2021			Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Selenium	Selenium (filtered)	Zinc	Zinc (filtered)	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			0.0001	0.0001	0.001	0.001	0.01	0.01	0.005	0.005	1	2	2	2	2	2
ANZECC 2000 - Stock Watering			0.002	0.002	1	1	0.02	0.02	20	20						
ANZG (2018) - FW - 95% (updated 26 July 2021)			0.0006	0.0006	0.011	0.011	0.011	0.011	0.008	0.008	950	180	80	350		
ADWG 2011 Health (v3.6 updated 2021)			0.001	0.001	0.02	0.02	0.01	0.01			1	800	300			600
ANZECC 2000 Irrigation - Long-term Trigger Values			0.002	0.002	0.2	0.2	0.02	0.02	2	2						
ANZECC 2000 Irrigation - Short-term Trigger Values			0.002	0.002	2	2	0.05	0.05	5	5						
Date	**Field ID**	**Lab Report Number**														
24/03/2021	B2	EM2105221	-	<0.0001	-	0.016	-	<0.01	-	0.008	<1	<2	<2	<2	<2	<2
29/09/2021		EM2119450	-	<0.0001	-	0.029	-	<0.01	-	0.013	<1	<2	<2	<2	<2	<2
24/03/2021	B4	EM2105221	-	<0.0001	-	0.001	-	<0.01	-	0.008	<1	<2	<2	<2	<2	<2
29/09/2021		EM2119450	-	<0.0001	-	0.004	-	<0.01	-	0.015	<1	<2	<2	<2	<2	<2
23/03/2021	B6	EM2105110	-	<0.0001	-	<0.001	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2
28/09/2021		EM2119193	<0.0001	<0.0001	<0.001	<0.001	<0.01	<0.01	0.010	0.012	<1	<2	<2	<2	<2	<2
23/03/2021	B7	EM2105110	-	<0.0001	-	<0.001	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2
28/09/2021		EM2119193	<0.0001	<0.0001	<0.001	<0.001	<0.01	<0.01	<0.005	<0.005	<1	<2	<2	<2	<2	<2
24/03/2021	B9	EM2105221	-	<0.0001	-	<0.001	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2
28/09/2021		EM2119193	<0.0001	<0.0001	0.054	<0.001	<0.01	<0.01	0.054	<0.005	<1	<2	<2	<2	<2	<2
23/03/2021	B11	EM2105110	-	<0.0001	-	0.017	-	<0.01	-	0.060	<1	<2	<2	<2	<2	<2
29/09/2021		EM2119450	-	<0.0001	-	0.026	-	<0.01	-	0.078	<1	<2	<2	<2	<2	<2
23/03/2021	B12	EM2105110	-	<0.0001	-	0.004	-	<0.01	-	0.009	<1	<2	<2	<2	<2	<2
29/09/2021		EM2119450	-	<0.0001	-	0.004	-	<0.01	-	0.012	<1	<2	<2	<2	<2	<2
22/03/2021	B14	EM2104983	-	<0.0001	-	0.002	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2
28/09/2021		EM2119193	<0.0001	<0.0001	0.092	0.001	<0.01	<0.01	0.276	<0.005	<1	<2	<2	<2	<2	<2

Table 1 - Groundwater 2021

					TRH - NEPM 2013							TRH - NEPM 1999				
			BTEX (Sum of Total) - Lab Calc	Naphthalene	F1 (C6-C10 minus BTEX)	C6-C10 Fraction	F2 (>C10-C16 minus Naphthalene)	>C10-C16 Fraction	F3 (>C16-C34 Fraction)	F4 (>C34-C40 Fraction)	>C10-C40 (Sum of Total)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 (Sum of Total)
Table 1: Groundwater 2021			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1	1	20	20	100	100	100	100	100	20	50	100	50	50
ANZECC 2000 - Stock Watering																
ANZG (2018) - FW - 95% (updated 26 July 2021)				16												
ADWG 2011 Health (v3.6 updated 2021)																
ANZECC 2000 Irrigation - Long-term Trigger Values																
ANZECC 2000 Irrigation - Short-term Trigger Values																
Date	**Field ID**	**Lab Report Number**														
24/03/2021	B2	EM2105221	<1	<5	<20	<20	<100	<100	900	<100	900	<20	<50	580	390	970
29/09/2021		EM2119450	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
24/03/2021	B4	EM2105221	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
29/09/2021		EM2119450	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
23/03/2021	B6	EM2105110	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
28/09/2021		EM2119193	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
23/03/2021	B7	EM2105110	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
28/09/2021		EM2119193	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
24/03/2021	B9	EM2105221	<1	<5	<20	<20	<100	<100	140	<100	140	<20	<50	120	<50	120
28/09/2021		EM2119193	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
23/03/2021	B11	EM2105110	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
29/09/2021		EM2119450	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
23/03/2021	B12	EM2105110	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
29/09/2021		EM2119450	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
22/03/2021	B14	EM2104983	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
28/09/2021		EM2119193	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50

Table 2 - Historical Groundwater

				Inorganics						Cyanide	Acidity & Alkalinity				
Table 2: Historical Groundwater		Filtered Total Phosphorus as P (filtered)	Phosphorus total (P2O5) (filtered)	pH (Lab)	Electrical conductivity (lab)	Total Dissolved Solids	Total Dissolved Solids (filtered)	Total Dissolved Solids (est.)	Total Suspended Solids	Cyanide (Total)	Alkalinity (Carbonate as CaCO3)	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide as CaCO3)	Alkalinity (total as CaCO3)	Calcium (filtered)
		mg/L	µg/L	pH units	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL		0.01	10	0.01	1	10	10	1	5	0.004	1	1	1	1	1
ANZECC 2000 - Stock Watering						5,000	5,000	5,000							1,000
ANZG (2018) - FW - 95% (updated 26 July 2021)										0.007					
ADWG 2011 Health (v3.6 updated 2021)										0.08					
ANZECC 2000 Irrigation - Long-term Trigger Values				6-9	2,900										
ANZECC 2000 Irrigation - Short-term Trigger Values															
Date	**Field ID**	**Lab Report Number**													
4/08/2016	B2	EM1609217	-	-	7.02	2,950	-	-	-	319	<0.004	-	-	-	-	132
28/02/2017		EM1702250	-	-	-	-	-	2,210	-	-	<0.004	<1	442	<1	442	150
12/09/2017		EM1712490	-	-	-	-	-	-	-	-	<0.004	<1	455	<1	455	156
21/03/2018		EM1805110	-	-	-	-	-	-	-	-	<0.004	<1	414	<1	414	159
19/09/2018		EM1815239	-	-	-	-	-	-	-	106	-	<1	419	<1	419	153
20/03/2019		EM1904168	-	-	-	-	1,880	-	-	-	-	<1	408	<1	408	164
10/09/2019		EM1915222	-	-	-	-	1,390	-	-	-	-	<1	412	<1	412	141
17/12/2019		EM1921873	-	-	-	-	1,580	-	-	-	-	<1	401	<1	401	126
25/03/2020		EM2005146	-	-	-	-	1,570	-	-	-	-	<1	338	<1	338	158
29/09/2020		EM2017090	-	-	-	-	666	-	-	-	-	<1	244	<1	244	81
24/03/2021		EM2105221	-	-	-	-	1,120	-	-	-	-	<1	171	<1	171	145
29/09/2021		EM2119450	-	-	-	1,230	-	-	800	-	-	<1	261	<1	261	94
3/08/2016	B3	EM1609217	-	-	4.82	248	-	-	-	902	<0.004	-	-	-	-	<1
27/02/2017		EM1702198	-	-	-	-	-	254	-	-	<0.004	<1	1	<1	1	<1
11/09/2017		EM1712490	-	-	-	-	-	-	-	-	<0.004	<1	180	<1	180	66
4/08/2016	B4	EM1609217	-	-	7.50	724	-	-	-	72	<0.004	-	-	-	-	107
28/02/2017		EM1702250	-	-	-	-	-	1,550	-	-	<0.004	<1	284	<1	284	206
12/09/2017		EM1712490	-	-	-	-	-	-	-	-	<0.004	<1	293	<1	293	124
21/03/2018		EM1805110	-	-	-	-	-	-	-	-	<0.004	<1	261	<1	261	253
19/09/2018		EM1815239	-	-	-	-	-	-	-	610	-	<1	261	<1	261	152
20/03/2019		EM1904168	-	-	-	-	1,600	-	-	-	-	<1	271	<1	271	246
9/09/2019		EM1915222	-	-	-	-	509	-	-	-	-	<1	296	<1	296	127
17/12/2019		EM1921873	-	-	-	-	1,170	-	-	-	-	<1	272	<1	272	172
25/03/2020		EM2005146	-	-	-	-	1,670	-	-	-	-	<1	241	<1	241	255
29/09/2020		EM2017090	-	-	-	-	664	-	-	-	-	<1	274	<1	274	163
24/03/2021		EM2105221	-	-	-	-	1,660	-	-	-	-	<1	288	<1	288	283
29/09/2021		EM2119450	-	-	-	-	-	-	-	-	-	<1	271	<1	271	142
2/08/2016	B6	EM1609083	-	-	-	-	-	-	-	-	<0.004	-	-	-	-	-
27/02/2017		EM1702198	-	-	-	-	-	276	-	-	<0.004	<1	193	<1	193	47
11/09/2017		EM1712490	-	-	-	-	-	-	-	-	<0.004	<1	151	<1	151	45
20/03/2018		EM1804934	-	-	-	-	-	-	-	-	<0.004	<1	186	<1	186	46
18/09/2018		EM1815239	-	-	-	-	-	-	-	16	-	<1	142	<1	142	43
19/03/2019		EM1904168	-	-	-	-	221	-	-	-	-	<1	180	<1	180	48
10/09/2019		EM1915222	-	-	-	-	264	-	-	-	-	<1	201	<1	201	46
23/03/2020		EM2005146	-	-	-	-	236	-	-	-	-	<1	153	<1	153	52
28/09/2020		EM2017090	-	-	-	-	292	-	-	-	-	<1	185	<1	185	50

Table 2 - Historical Groundwater

			Inorganics						Cyanide	Acidity & Alkalinity				
Table 2: Historical Groundwater	Filtered Total Phosphorus as P (filtered)	Phosphorus total (P2O5) (filtered)	pH (Lab)	Electrical conductivity (lab)	Total Dissolved Solids	Total Dissolved Solids (filtered)	Total Dissolved Solids (est.)	Total Suspended Solids	Cyanide (Total)	Alkalinity (Carbonate as CaCO3)	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide as CaCO3)	Alkalinity (total as CaCO3)	Calcium (filtered)
	mg/L	µg/L	pH units	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.01	10	0.01	1	10	10	1	5	0.004	1	1	1	1	1
ANZECC 2000 - Stock Watering					5,000	5,000	5,000							1,000
ANZG (2018) - FW - 95% (updated 26 July 2021)									0.007					
ADWG 2011 Health (v3.6 updated 2021)									0.08					
ANZECC 2000 Irrigation - Long-term Trigger Values			6-9	2,900										
ANZECC 2000 Irrigation - Short-term Trigger Values														
Date	**Field ID**	**Lab Report Number**												
23/03/2021		EM2105110	-	-	-	-	250	-	-	-	-	<1	181	<1	181	56
28/09/2021		EM2119193	-	-	-	-	258	-	-	-	-	<1	176	<1	176	42
3/08/2016	B7	EM1609217	-	-	7.33	546	-	-	-	781	<0.004	-	-	-	-	84
28/02/2017		EM1702250	-	-	-	-	-	386	-	-	<0.004	<1	254	<1	254	78
11/09/2017		EM1712490	-	-	-	-	-	-	-	-	<0.004	<1	257	<1	257	90
20/03/2018		EM1804934	-	-	-	-	-	-	-	-	<0.004	<1	250	<1	250	84
19/09/2018		EM1815239	-	-	-	-	-	-	-	332	-	<1	234	<1	234	89
19/03/2019		EM1904168	-	-	-	-	325	-	-	-	-	<1	251	<1	251	89
11/09/2019		EM1915222	-	-	-	-	288	-	-	-	-	<1	267	<1	267	87
24/03/2020		EM2005146	-	-	-	-	439	-	-	-	-	<1	219	<1	219	95
28/09/2020		EM2017090	-	-	-	-	302	-	-	-	-	<1	251	<1	251	92
23/03/2021		EM2105110	-	-	-	-	303	-	-	-	-	<1	249	<1	249	95
28/09/2021		EM2119193	-	-	-	-	335	-	-	-	-	<1	198	<1	198	84
13/09/2017	B9	EM1712490	-	-	-	-	-	-	-	-	<0.004	<1	112	<1	112	45
21/03/2018		EM1805110	-	-	-	-	-	-	-	-	<0.004	<1	168	<1	168	69
19/09/2018		EM1815239	-	-	-	-	-	-	-	31	-	<1	101	<1	101	37
18/03/2019		EM1904168	-	-	-	-	268	-	-	-	-	<1	168	<1	168	70
9/09/2019		EM1915222	-	-	-	-	212	-	-	-	-	<1	130	<1	130	49
25/03/2020		EM2005146	-	-	-	-	332	-	-	-	-	<1	154	<1	154	77
30/09/2020		EM2017163	-	-	-	-	-	-	-	-	-	<1	112	<1	112	47
24/03/2021		EM2105221	-	-	-	-	533	-	-	-	-	<1	171	<1	171	70
28/09/2021		EM2119193	-	-	-	-	198	-	-	-	-	<1	124	<1	124	51
12/09/2017	B11	EM1712490	-	-	-	-	-	-	-	-	<0.004	<1	<1	<1	<1	2
21/03/2018		EM1805110	-	-	-	-	-	-	-	-	<0.004	<1	<1	<1	<1	1
19/09/2018		EM1815239	-	-	-	-	-	-	-	875	-	<1	<1	<1	<1	1
20/03/2019		EM1904168	-	-	-	-	260	-	-	-	-	<1	<1	<1	<1	1
9/09/2019		EM1915222	-	-	-	-	420	-	-	-	-	<1	<1	<1	<1	2
17/12/2019		EM1921873	-	-	-	-	380	-	-	-	-	<1	<1	<1	<1	2
24/03/2020		EM2005146	-	-	-	-	210	-	-	-	-	<1	2	<1	2	1
29/09/2020		EM2017090	-	-	-	-	442	-	-	-	-	<1	<1	<1	<1	2
23/03/2021		EM2105110	-	-	-	-	430	-	-	-	-	<1	<1	<1	<1	2
29/09/2021		EM2119450	-	-	-	-	-	-	-	-	-	<1	<1	<1	<1	2
2/08/2016	B12	EM1609083	-	-	-	-	-	-	-	-	<0.004	-	-	-	-	-
27/02/2017		EM1702198	-	-	-	-	-	427	-	-	<0.004	<1	272	<1	272	91
11/09/2017		EM1712490	-	-	-	-	-	-	-	-	<0.004	<1	272	<1	272	95
20/03/2018		EM1804934	-	-	-	-	-	-	-	-	<0.004	<1	288	<1	288	103
18/09/2018		EM1815239	-	-	-	-	-	-	-	2,700	-	<1	7	<1	7	2
19/03/2019		EM1904168	-	-	-	-	98	-	-	-	-	<1	10	<1	10	4

Table 2 - Historical Groundwater

			Inorganics						Cyanide	Acidity & Alkalinity				
Table 2: Historical Groundwater	Filtered Total Phosphorus as P (filtered)	Phosphorus total (P2O5) (filtered)	pH (Lab)	Electrical conductivity (lab)	Total Dissolved Solids	Total Dissolved Solids (filtered)	Total Dissolved Solids (est.)	Total Suspended Solids	Cyanide (Total)	Alkalinity (Carbonate as CaCO3)	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide as CaCO3)	Alkalinity (total as CaCO3)	Calcium (filtered)
	mg/L	µg/L	pH units	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.01	10	0.01	1	10	10	1	5	0.004	1	1	1	1	1
ANZECC 2000 - Stock Watering					5,000	5,000	5,000							1,000
ANZG (2018) - FW - 95% (updated 26 July 2021)									0.007					
ADWG 2011 Health (v3.6 updated 2021)									0.08					
ANZECC 2000 Irrigation - Long-term Trigger Values			6-9	2,900										
ANZECC 2000 Irrigation - Short-term Trigger Values														

Date	Field ID	Lab Report Number													
10/09/2019		EM1915222	-	-	-	-	138	-	-	-	-	<1	5	<1	5	2
17/12/2019		EM1921873	-	-	-	-	74	-	-	-	-	<1	2	<1	2	<1
24/03/2020		EM2005146	-	-	-	-	116	-	-	-	-	<1	12	<1	12	6
28/09/2020		EM2017090	-	-	-	-	108	-	-	-	-	<1	7	<1	7	3
23/03/2021		EM2105110	-	-	-	-	160	-	-	-	-	<1	9	<1	9	3
29/09/2021		EM2119450	-	-	-	174	-	-	113	-	-	<1	5	<1	5	3
3/08/2016	B14	EM1609217	-	-	6.84	321	-	-	-	3,460	<0.004	-	-	-	-	34
27/02/2017		EM1702198	-	-	-	-	-	143	-	-	<0.004	<1	16	<1	16	4
11/09/2017		EM1712490	-	-	-	-	-	-	-	-	<0.004	<1	21	<1	21	6
21/03/2018		EM1805110	-	-	-	-	-	-	-	-	<0.004	<1	21	<1	21	6
18/09/2018		EM1815239	-	-	-	-	-	-	-	5,950	-	<1	264	<1	264	109
18/03/2019		EM1904168	-	-	-	-	384	-	-	-	-	<1	298	<1	298	101
11/09/2019		EM1915222	-	-	-	-	450	-	-	-	-	<1	308	<1	308	99
24/03/2020		EM2005146	-	-	-	-	446	-	-	-	-	<1	239	<1	239	121
28/09/2020		EM2017090	-	-	-	-	760	-	-	-	-	<1	268	<1	268	128
22/03/2021		EM2104983	-	-	-	-	712	-	-	-	-	<1	430	<1	430	118
28/09/2021		EM2119193	-	-	-	-	2,230	-	-	-	-	<1	296	<1	296	119
4/08/2016	B15	EM1609217	-	-	6.82	297	-	-	-	196	<0.004	-	-	-	-	42
15/12/2016		EM1615347	0.02	20	5.40	107	-	-	-	276	-	-	-	-	-	3
1/03/2017		EM1702335	-	-	-	-	-	141	-	-	0.004	<1	10	<1	10	5
14/06/2017		EM1707805	-	-	-	-	-	-	-	-	-	<1	10	<1	10	2
13/09/2017		EM1712490	-	-	-	-	-	-	-	-	<0.004	<1	8	<1	8	6
3/08/2016	B16	EM1609217	-	-	7.39	635	-	-	-	1,500	<0.004	-	-	-	-	96
15/12/2016		EM1615347	0.36	360	7.41	531	-	-	-	1,610	-	-	-	-	-	71
2/03/2017		EM1702335	-	-	-	-	-	340	-	-	<0.004	<1	112	<1	112	76
14/06/2017		EM1707805	-	-	-	-	-	-	-	-	-	<1	239	<1	239	77
12/09/2017		EM1712490	-	-	-	-	-	-	-	-	<0.004	<1	271	<1	271	85
3/08/2016	B17	EM1609217	-	-	7.36	603	-	-	-	9,370	<0.004	-	-	-	-	94
15/12/2016		EM1615347	0.46	460	7.36	628	-	-	-	4,260	-	-	-	-	-	96
3/03/2017		EM1702335	-	-	-	-	-	360	-	-	<0.004	<1	129	<1	129	97
14/06/2017		EM1707805	-	-	-	-	-	-	-	-	-	<1	287	<1	287	98
13/09/2017		EM1712490	-	-	-	-	-	-	-	-	<0.004	<1	300	<1	300	108
3/08/2016	B21A	EM1609217	-	-	7.63	749	-	-	-	7,430	<0.004	-	-	-	-	108
14/06/2017		EM1707805	-	-	-	-	-	-	-	-	-	<1	205	<1	205	143

Table 2 - Historical Groundwater

											Minor Ions					
Table 2: Historical Groundwater			Magnesium (filtered)	Potassium (filtered)	Sodium (filtered)	Chloride	Sulfate (filtered)	Sulfate as S (filtered)	Cations Total	Anions Total	Ionic Balance	Iodide	Bromide	Ammonia as N	Nitrate (as N)	Nitrite (as N)
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	%	µg/L	mg/L	mg/L	mg/L	mg/L
EQL			1	1	1	1	1	1	0.01	0.01	0.01	10	0.01	0.01	0.01	0.01
ANZECC 2000 - Stock Watering							1,000	333							90	9.1
ANZG (2018) - FW - 95% (updated 26 July 2021)														0.9	2.4	
ADWG 2011 Health (v3.6 updated 2021)							500					500			11.29	0.91
ANZECC 2000 Irrigation - Long-term Trigger Values						350										
ANZECC 2000 Irrigation - Short-term Trigger Values																
Date	**Field ID**	**Lab Report Number**														
4/08/2016	B2	EM1609217	14	65	407	729	11	11	-	-	-	-	-	27.4	<0.01	<0.01
28/02/2017		EM1702250	14	64	376	896	5	5	30.6	34.2	5.51	820	1.03	32.0	0.02	<0.01
12/09/2017		EM1712490	14	64	350	764	14	-	25.8	30.9	9.05	-	-	31.0	0.01	<0.01
21/03/2018		EM1805110	14	57	350	762	7	-	25.8	29.9	7.44	432	1.01	27.5	0.08	<0.01
19/09/2018		EM1815239	14	61	321	710	109	-	24.3	30.7	11.6	<100	0.747	28.4	<0.01	<0.01
20/03/2019		EM1904168	14	56	317	844	9	-	26.1	32.1	10.4	<10	0.883	21.2	<0.01	<0.01
10/09/2019		EM1915222	13	53	265	568	144	-	24.0	27.2	6.37	<50	<0.050	20.0	0.05	0.03
17/12/2019		EM1921873	12	56	306	737	29	-	25.0	29.4	8.13	301	0.621	23.4	<0.01	<0.01
25/03/2020		EM2005146	12	45	285	717	25	-	23.9	27.5	7.06	353	0.548	18.5	0.01	0.01
29/09/2020		EM2017090	6	21	77	205	75	-	9.02	12.2	15.0	<50	<0.050	8.43	0.95	0.04
24/03/2021		EM2105221	12	46	242	100	48	-	19.9	7.24	46.7	<500	0.105	4.31	2.38	0.15
29/09/2021		EM2119450	9	24	105	218	58	-	10.6	12.6	8.45	42	0.275	8.69	0.10	0.02
3/08/2016	B3	EM1609217	2	<1	24	52	3	3	-	-	-	-	-	0.02	<0.01	<0.01
27/02/2017		EM1702198	5	<1	40	111	2	2	3.07	3.19	1.96	20	0.248	0.06	<0.01	<0.01
11/09/2017		EM1712490	4	<1	13	23	15	-	4.19	4.56	4.22	-	-	0.05	0.01	0.02
4/08/2016	B4	EM1609217	5	<1	24	51	14	14	-	-	-	-	-	0.03	0.07	<0.01
28/02/2017		EM1702250	8	<1	56	374	3	3	14.0	16.3	7.50	90	0.295	0.18	0.01	<0.01
12/09/2017		EM1712490	5	<1	32	64	11	-	7.99	7.89	0.64	-	-	0.08	<0.01	0.01
21/03/2018		EM1805110	11	<1	94	518	2	-	17.6	19.9	6.00	146	0.421	0.17	<0.01	<0.01
19/09/2018		EM1815239	6	<1	45	168	10	-	10.0	10.2	0.62	<50	0.170	0.02	0.02	<0.01
20/03/2019		EM1904168	11	<1	102	562	<1	-	17.6	21.3	9.39	<10	0.434	0.10	<0.01	<0.01
9/09/2019		EM1915222	5	<1	35	126	12	-	9.85	9.72	0.67	<20	<0.020	0.06	<0.01	<0.01
17/12/2019		EM1921873	9	<1	86	379	6	-	14.1	16.2	7.06	<100	0.260	0.12	<0.01	<0.01
25/03/2020		EM2005146	14	<1	136	615	4	-	19.8	22.2	5.84	<10	0.324	0.15	<0.01	<0.01
29/09/2020		EM2017090	7	<1	56	172	10	-	11.1	10.5	2.82	<50	<0.050	0.12	<0.01	<0.01
24/03/2021		EM2105221	14	<1	151	660	5	-	21.8	24.5	5.69	<500	0.490	0.32	0.02	<0.01
29/09/2021		EM2119450	6	<1	41	160	14	-	9.36	10.2	4.37	33	0.161	0.07	<0.01	<0.01
2/08/2016	B6	EM1609083	14	1	20	40	8	8	-	-	-	<20	0.115	0.06	0.04	<0.01
27/02/2017		EM1702198	13	1	19	30	5	5	4.57	4.81	2.57	28	0.133	0.08	<0.01	<0.01
11/09/2017		EM1712490	12	1	22	44	7	-	4.22	4.40	2.18	-	-	0.07	<0.01	0.02
20/03/2018		EM1804934	13	1	17	24	3	-	4.13	4.46	3.79	<10	0.095	0.09	0.03	<0.01
18/09/2018		EM1815239	12	2	20	34	5	-	4.05	3.90	1.94	<10	0.114	0.04	0.02	<0.01
19/03/2019		EM1904168	13	2	16	27	4	-	4.21	4.44	2.65	<10	0.113	0.10	<0.01	<0.01
10/09/2019		EM1915222	13	2	17	28	7	-	4.47	4.95	5.13	<10	<0.010	0.06	0.01	<0.01
23/03/2020		EM2005146	13	2	17	24	6	-	4.46	3.86	7.17	<10	0.079	0.08	<0.01	<0.01
28/09/2020		EM2017090	14	2	18	28	4	-	4.48	4.57	0.97	<10	0.109	0.09	<0.01	<0.01

Table 2 - Historical Groundwater

											Minor Ions					
Table 2: Historical Groundwater			Magnesium (filtered)	Potassium (filtered)	Sodium (filtered)	Chloride	Sulfate (filtered)	Sulfate as S (filtered)	Cations Total	Anions Total	Ionic Balance	Iodide	Bromide	Ammonia as N	Nitrate (as N)	Nitrite (as N)
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	%	µg/L	mg/L	mg/L	mg/L	mg/L
EQL			1	1	1	1	1	1	0.01	0.01	0.01	10	0.01	0.01	0.01	0.01
ANZECC 2000 - Stock Watering							1,000	333							90	9.1
ANZG (2018) - FW - 95% (updated 26 July 2021)														0.9	2.4	
ADWG 2011 Health (v3.6 updated 2021)							500					500			11.29	0.91
ANZECC 2000 Irrigation - Long-term Trigger Values						350										
ANZECC 2000 Irrigation - Short-term Trigger Values																
Date	**Field ID**	**Lab Report Number**														
23/03/2021		EM2105110	15	2	19	27	11	-	4.91	4.61	3.15	<500	<0.500	0.09	<0.01	<0.01
28/09/2021		EM2119193	13	2	18	30	7	-	4.00	4.51	5.98	-	-	0.19	<0.01	<0.01
3/08/2016	B7	EM1609217	5	<1	10	18	5	5	-	-	-	-	-	<0.01	0.03	<0.01
28/02/2017		EM1702250	4	<1	10	16	5	5	4.66	5.63	9.47	<10	0.071	0.04	<0.01	<0.01
11/09/2017		EM1712490	4	<1	10	17	5	-	5.26	5.72	4.22	-	-	<0.01	<0.01	0.02
20/03/2018		EM1804934	4	<1	10	17	6	-	4.96	5.60	6.10	<10	0.051	0.09	<0.01	<0.01
19/09/2018		EM1815239	4	<1	11	18	5	-	5.25	5.29	0.36	<20	0.053	<0.01	0.01	<0.01
19/03/2019		EM1904168	4	<1	10	18	5	-	5.20	5.63	3.89	<10	0.064	0.07	<0.01	<0.01
11/09/2019		EM1915222	4	<1	10	17	4	-	5.10	5.90	7.20	<10	<0.010	<0.01	<0.01	<0.01
24/03/2020		EM2005146	4	<1	10	19	6	-	5.50	5.04	4.44	<10	0.043	0.02	0.02	<0.01
28/09/2020		EM2017090	4	<1	10	18	5	-	5.36	5.63	2.48	<10	0.052	0.04	<0.01	<0.01
23/03/2021		EM2105110	4	<1	11	16	5	-	5.55	5.53	0.16	<500	<0.500	0.03	<0.01	<0.01
28/09/2021		EM2119193	4	<1	11	16	5	-	5.00	4.51	5.13	-	-	0.18	<0.01	<0.01
13/09/2017	B9	EM1712490	3	<1	11	17	13	-	2.97	2.99	0.29	-	-	<0.01	0.25	0.01
21/03/2018		EM1805110	4	<1	11	21	26	-	4.25	4.49	2.74	<20	0.062	0.07	0.56	<0.01
19/09/2018		EM1815239	3	<1	12	20	14	-	2.62	2.87	4.71	<10	0.040	0.09	0.26	<0.01
18/03/2019		EM1904168	4	<1	13	21	24	-	4.39	4.45	0.69	<10	0.074	0.02	0.59	<0.01
9/09/2019		EM1915222	3	<1	11	20	14	-	3.17	3.45	-	<10	<0.010	<0.01	0.30	<0.01
25/03/2020		EM2005146	5	<1	13	23	30	-	4.82	4.35	5.11	<10	0.052	0.02	0.63	<0.01
30/09/2020		EM2017163	3	<1	11	27	16	-	3.07	3.33	4.09	<10	0.032	<0.01	0.27	<0.01
24/03/2021		EM2105221	4	<1	12	21	21	-	4.34	4.45	1.16	<500	0.056	<0.01	0.49	<0.01
28/09/2021		EM2119193	3	<1	10	20	14	-	3.23	3.33	1.62	-	-	0.27	0.26	<0.01
12/09/2017	B11	EM1712490	7	1	52	195	1	-	2.96	5.52	30.1	-	-	0.07	0.01	0.01
21/03/2018		EM1805110	6	<1	47	95	1	-	2.59	2.70	2.13	<20	0.186	0.07	0.01	<0.01
19/09/2018		EM1815239	6	1	43	182	2	-	2.44	5.18	35.9	<20	0.264	0.20	0.03	<0.01
20/03/2019		EM1904168	6	1	53	177	2	-	5.89	5.03	7.90	<10	0.271	<0.01	<0.01	<0.01
9/09/2019		EM1915222	10	1	74	246	2	-	6.29	6.98	5.14	<20	<0.020	0.05	0.02	<0.01
17/12/2019		EM1921873	9	1	68	223	3	-	6.16	6.35	1.54	<50	0.082	0.11	<0.01	<0.01
24/03/2020		EM2005146	6	<1	40	133	2	-	4.13	3.83	3.80	74	0.207	0.06	<0.01	<0.01
29/09/2020		EM2017090	12	1	78	275	2	-	7.63	7.80	1.08	<20	0.076	0.08	0.01	<0.01
23/03/2021		EM2105110	10	1	67	263	2	-	7.14	7.46	2.20	<500	<0.500	1.05	<0.01	0.01
29/09/2021		EM2119450	15	2	91	347	1	-	10.3	9.81	2.45	114	0.353	0.03	<0.01	<0.01
2/08/2016	B12	EM1609083	8	3	21	49	12	12	-	-	-	<20	0.085	0.08	0.06	<0.01
27/02/2017		EM1702198	7	3	18	40	8	8	5.98	6.73	5.92	11	0.102	0.06	<0.01	<0.01
11/09/2017		EM1712490	7	2	17	39	7	-	6.11	6.68	4.48	-	-	0.07	<0.01	0.02
20/03/2018		EM1804934	8	3	24	56	9	-	6.92	7.52	4.17	<10	0.113	0.14	<0.01	<0.01
18/09/2018		EM1815239	1	<1	25	32	2	-	1.27	1.08	-	<20	0.086	0.07	2.54	<0.01
19/03/2019		EM1904168	1	<1	20	25	1	-	1.15	0.92	-	<10	0.095	0.02	1.72	<0.01

Table 2 - Historical Groundwater

											Minor Ions					
Table 2: Historical Groundwater			Magnesium (filtered)	Potassium (filtered)	Sodium (filtered)	Chloride	Sulfate (filtered)	Sulfate as S (filtered)	Cations Total	Anions Total	Ionic Balance	Iodide	Bromide	Ammonia as N	Nitrate (as N)	Nitrite (as N)
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	%	µg/L	mg/L	mg/L	mg/L	mg/L
EQL			1	1	1	1	1	1	0.01	0.01	0.01	10	0.01	0.01	0.01	0.01
ANZECC 2000 - Stock Watering							1,000	333							90	9.1
ANZG (2018) - FW - 95% (updated 26 July 2021)														0.9	2.4	
ADWG 2011 Health (v3.6 updated 2021)							500					500			11.29	0.91
ANZECC 2000 Irrigation - Long-term Trigger Values						350										
ANZECC 2000 Irrigation - Short-term Trigger Values																
Date	**Field ID**	**Lab Report Number**														
10/09/2019		EM1915222	1	<1	23	37	2	-	1.18	1.18	0.12	<10	<0.010	0.04	2.32	<0.01
17/12/2019		EM1921873	<1	<1	21	36	2	-	0.91	1.10	-	<100	0.077	0.10	2.29	<0.01
24/03/2020		EM2005146	2	<1	24	36	2	-	1.51	1.30	-	<10	0.068	0.03	2.37	<0.01
28/09/2020		EM2017090	1	<1	23	36	1	-	1.23	1.18	2.34	<10	0.085	0.06	2.30	<0.01
23/03/2021		EM2105110	2	<1	25	41	2	-	1.40	1.38	0.85	<500	<0.500	0.03	2.16	<0.01
29/09/2021		EM2119450	2	<1	24	34	1	-	1.36	1.24	4.56	<10	0.081	<0.01	2.24	<0.01
3/08/2016	B14	EM1609217	3	<1	20	22	2	2	-	-	-	-	-	<0.01	2.21	<0.01
27/02/2017		EM1702198	1	<1	17	29	2	2	1.02	1.18	-	<10	0.068	0.01	1.70	<0.01
11/09/2017		EM1712490	2	<1	20	117	1	-	1.33	3.74	47.4	-	-	0.02	1.70	0.01
21/03/2018		EM1805110	1	<1	18	24	2	-	1.16	1.14	1.15	<100	0.059	0.05	1.92	<0.01
18/09/2018		EM1815239	8	4	24	65	11	-	7.24	7.34	0.64	<20	0.117	0.19	0.02	<0.01
18/03/2019		EM1904168	7	4	23	35	7	-	6.72	7.09	2.67	<10	0.116	0.13	<0.01	<0.01
11/09/2019		EM1915222	7	4	24	48	11	-	6.66	7.74	7.46	<20	<0.020	0.09	0.04	<0.01
24/03/2020		EM2005146	9	5	36	109	30	-	8.47	8.47	0.01	<10	0.085	0.20	0.14	0.02
28/09/2020		EM2017090	10	5	39	124	59	-	9.03	10.1	5.47	<50	0.261	0.37	0.03	<0.01
22/03/2021		EM2104983	9	9	63	114	44	-	9.60	12.7	14.0	<500	<0.500	0.24	<0.01	<0.01
28/09/2021		EM2119193	10	7	62	99	44	-	9.64	9.62	0.07	-	-	0.45	<0.01	<0.01
4/08/2016	B15	EM1609217	2	<1	11	24	2	2	-	-	-	-	-	0.02	0.05	<0.01
15/12/2016		EM1615347	<1	<1	11	19	2	2	-	-	-	-	-	0.06	0.03	<0.01
1/03/2017		EM1702335	<1	<1	11	22	5	-	0.73	0.92	-	<10	0.060	0.07	0.10	<0.01
14/06/2017		EM1707805	<1	<1	10	19	2	-	0.53	0.78	-	-	-	0.04	0.16	<0.01
13/09/2017		EM1712490	<1	<1	11	24	<1	-	0.78	0.84	3.65	-	-	0.04	0.09	0.01
3/08/2016	B16	EM1609217	5	<1	19	32	9	9	-	-	-	-	-	0.07	0.37	<0.01
15/12/2016		EM1615347	3	<1	27	26	9	9	-	-	-	-	-	<0.01	0.27	<0.01
2/03/2017		EM1702335	3	<1	21	29	4	-	4.95	3.14	-	<10	0.067	0.06	0.21	<0.01
14/06/2017		EM1707805	4	<1	24	22	6	-	5.22	5.52	2.84	-	-	0.04	0.25	<0.01
12/09/2017		EM1712490	4	<1	31	26	6	-	5.92	6.27	2.90	-	-	0.01	0.33	<0.01
3/08/2016	B17	EM1609217	4	<1	14	25	4	4	-	-	-	-	-	0.03	0.40	<0.01
15/12/2016		EM1615347	4	2	21	32	14	14	-	-	-	-	-	<0.01	1.18	0.02
3/03/2017		EM1702335	4	<1	18	35	11	-	5.95	3.79	-	<10	0.083	0.06	0.98	0.02
14/06/2017		EM1707805	4	2	17	24	17	-	6.01	6.76	5.91	-	-	0.02	0.33	0.02
13/09/2017		EM1712490	4	2	18	28	16	-	6.55	7.12	4.13	-	-	0.01	0.53	0.03
3/08/2016	B21A	EM1609217	8	1	28	71	63	63	-	-	-	-	-	0.09	<0.01	<0.01
14/06/2017		EM1707805	10	2	35	64	226	-	9.53	10.6	5.33	-	-	0.04	0.08	<0.01

Table 2 - Historical Groundwater

Table 2: Historical Groundwater			Nitrogen (Total Oxidised) (as N)	Nitrogen (Total)	Kjeldahl Nitrogen Total	Reactive Phosphorus as P	Phosphorus (Total)	Phosphorus (Total) (filtered)	BOD	BOD (filtered)	Dissolved Organic Carbon	Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Cadmium
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.01	0.1	0.1	0.01	0.01	0.01	2	2	1	0.01	0.01	0.001	0.001	0.0001
ANZECC 2000 - Stock Watering												5	5	0.5	0.5	0.01
ANZG (2018) - FW - 95% (updated 26 July 2021)												0.055	0.055	0.013	0.013	0.0002
ADWG 2011 Health (v3.6 updated 2021)														0.01	0.01	0.002
ANZECC 2000 Irrigation - Long-term Trigger Values				5			0.05	0.05				5	5	0.1	0.1	0.01
ANZECC 2000 Irrigation - Short-term Trigger Values				25			0.8	0.8				20	20	2	2	0.05
Date	**Field ID**	**Lab Report Number**														
4/08/2016	B2	EM1609217	<0.01	30.8	30.8	<0.01	0.11	-	<2	-	24	-	-	-	0.002	-
28/02/2017		EM1702250	0.02	40.1	40.1	<0.01	0.20	-	11	-	14	-	-	-	0.002	-
12/09/2017		EM1712490	0.01	31.4	31.4	<0.01	0.33	-	<2	-	13	-	-	-	0.001	-
21/03/2018		EM1805110	0.08	28.9	28.8	<0.01	0.18	-	<2	-	<10	-	-	-	0.001	-
19/09/2018		EM1815239	<0.01	33.6	33.6	<0.01	0.13	0.07	<2	-	-	0.54	0.02	0.003	0.003	0.0004
20/03/2019		EM1904168	<0.01	30.6	30.6	<0.01	0.12	-	2	-	26	-	-	-	<0.001	-
10/09/2019		EM1915222	0.08	26.6	26.5	<0.01	0.20	-	<2	-	16	-	-	-	0.002	-
17/12/2019		EM1921873	<0.01	27.0	27.0	0.02	0.01	-	<2	-	13	-	-	-	0.001	-
25/03/2020		EM2005146	0.02	27.6	27.6	<0.01	0.02	-	<2	-	<5	-	-	-	0.002	-
29/09/2020		EM2017090	0.99	10.9	9.9	0.01	0.39	-	<10	-	19	-	-	-	0.002	-
24/03/2021		EM2105221	2.53	11.1	8.6	0.12	1.30	-	<10	-	9	-	-	-	0.002	-
29/09/2021		EM2119450	0.12	8.7	8.6	<0.01	0.11	-	<10	-	17	-	-	-	0.001	-
3/08/2016	B3	EM1609217	<0.01	<0.1	<0.1	<0.01	0.02	-	2	-	5	-	-	-	<0.001	-
27/02/2017		EM1702198	<0.01	0.3	0.3	<0.01	0.07	-	2	-	3	-	-	-	<0.001	-
11/09/2017		EM1712490	0.03	19.5	19.5	<0.01	19.2	-	<2	-	6	-	-	-	<0.001	-
4/08/2016	B4	EM1609217	0.07	<0.1	<0.1	<0.01	0.08	-	4	-	14	-	-	-	<0.001	-
28/02/2017		EM1702250	0.01	0.4	0.4	<0.01	0.43	-	<2	-	2	-	-	-	0.001	-
12/09/2017		EM1712490	0.01	0.3	0.3	<0.01	0.28	-	<2	-	2	-	-	-	<0.001	-
21/03/2018		EM1805110	<0.01	0.2	0.2	<0.01	0.15	-	<2	-	<1	-	-	-	<0.001	-
19/09/2018		EM1815239	0.02	<0.1	<0.1	<0.01	0.04	0.03	<2	-	-	1.01	0.02	0.001	<0.001	<0.0001
20/03/2019		EM1904168	<0.01	0.5	0.5	<0.01	0.03	-	<2	-	14	-	-	-	<0.001	-
9/09/2019		EM1915222	<0.01	<0.1	<0.1	0.01	0.03	-	<2	-	4	-	-	-	0.002	-
17/12/2019		EM1921873	<0.01	<0.1	<0.1	<0.01	<0.01	-	3	-	3	-	-	-	<0.001	-
25/03/2020		EM2005146	<0.01	0.3	0.3	<0.01	0.05	-	4	-	<5	-	-	-	<0.001	-
29/09/2020		EM2017090	<0.01	0.2	0.2	<0.01	0.03	-	<10	-	<1	-	-	-	<0.001	-
24/03/2021		EM2105221	0.02	0.4	0.4	<0.01	0.13	-	<10	-	<1	-	-	-	<0.001	-
29/09/2021		EM2119450	<0.01	0.2	0.2	<0.01	0.01	-	<10	-	2	-	-	-	<0.001	-
2/08/2016	B6	EM1609083	0.04	<0.1	<0.1	<0.01	0.09	-	<2	-	13	-	-	-	<0.001	-
27/02/2017		EM1702198	<0.01	0.2	0.2	<0.01	0.08	-	3	-	2	-	-	-	<0.001	-
11/09/2017		EM1712490	<0.01	0.1	0.1	<0.01	0.09	-	<2	-	3	-	-	-	<0.001	-
20/03/2018		EM1804934	0.03	<0.1	<0.1	<0.01	0.06	-	<2	-	3	-	-	-	<0.001	-
18/09/2018		EM1815239	0.02	<0.1	<0.1	<0.01	0.09	<0.01	<2	-	-	0.10	0.04	<0.001	<0.001	<0.0001
19/03/2019		EM1904168	<0.01	0.1	0.1	<0.01	0.22	-	4	-	4	-	-	-	0.001	-
10/09/2019		EM1915222	0.01	<0.1	<0.1	<0.01	0.12	-	6	-	5	-	-	-	<0.001	-
23/03/2020		EM2005146	<0.01	0.1	0.1	<0.01	0.09	-	<2	-	<5	-	-	-	<0.001	-
28/09/2020		EM2017090	<0.01	<0.1	<0.1	<0.01	0.18	-	<10	-	5	-	-	-	<0.001	-

Table 2 - Historical Groundwater

Table 2: Historical Groundwater			Nitrogen (Total Oxidised) (as N)	Nitrogen (Total)	Kjeldahl Nitrogen Total	Reactive Phosphorus as P	Phosphorus (Total)	Phosphorus (Total) (filtered)	BOD	BOD (filtered)	Dissolved Organic Carbon	Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Cadmium
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.01	0.1	0.1	0.01	0.01	0.01	2	2	1	0.01	0.01	0.001	0.001	0.0001
ANZECC 2000 - Stock Watering												5	5	0.5	0.5	0.01
ANZG (2018) - FW - 95% (updated 26 July 2021)												0.055	0.055	0.013	0.013	0.0002
ADWG 2011 Health (v3.6 updated 2021)														0.01	0.01	0.002
ANZECC 2000 Irrigation - Long-term Trigger Values				5			0.05	0.05				5	5	0.1	0.1	0.01
ANZECC 2000 Irrigation - Short-term Trigger Values				25			0.8	0.8				20	20	2	2	0.05
Date	**Field ID**	**Lab Report Number**														
23/03/2021		EM2105110	<0.01	0.1	0.1	<0.01	0.12	-	<10	-	<1	-	-	-	<0.001	-
28/09/2021		EM2119193	<0.01	0.2	0.2	<0.01	<0.01	-	<10	-	<1	-	-	0.001	<0.001	<0.0001
3/08/2016	B7	EM1609217	0.03	<0.1	<0.1	<0.01	0.48	-	4	-	5	-	-	-	<0.001	-
28/02/2017		EM1702250	<0.01	<0.1	<0.1	<0.01	<0.01	-	<2	-	2	-	-	-	<0.001	-
11/09/2017		EM1712490	0.01	0.2	0.2	<0.01	0.35	-	<2	-	<1	-	-	-	<0.001	-
20/03/2018		EM1804934	<0.01	<0.1	<0.1	<0.01	0.18	-	<2	-	<1	-	-	-	<0.001	-
19/09/2018		EM1815239	0.01	<0.1	<0.1	<0.01	0.27	0.05	<2	-	-	3.18	0.01	<0.001	<0.001	<0.0001
19/03/2019		EM1904168	<0.01	<0.1	<0.1	<0.01	0.05	-	4	-	9	-	-	-	<0.001	-
11/09/2019		EM1915222	<0.01	<0.1	<0.1	<0.01	0.14	-	<2	-	<1	-	-	-	<0.001	-
24/03/2020		EM2005146	0.02	<0.1	<0.1	<0.01	0.05	-	<2	-	<1	-	-	-	<0.001	-
28/09/2020		EM2017090	<0.01	<0.1	<0.1	<0.01	<0.01	-	<10	-	<1	-	-	-	<0.001	-
23/03/2021		EM2105110	<0.01	<0.1	<0.1	<0.01	0.04	-	<10	-	<1	-	-	-	<0.001	-
28/09/2021		EM2119193	<0.01	0.1	0.1	<0.01	<0.01	-	<10	-	<1	-	-	<0.001	<0.001	<0.0001
13/09/2017	B9	EM1712490	0.26	0.7	0.4	<0.01	0.12	-	<2	-	4	-	-	-	<0.001	-
21/03/2018		EM1805110	0.56	0.9	0.3	<0.01	0.43	-	<2	-	6	-	-	-	<0.001	-
19/09/2018		EM1815239	0.26	0.3	<0.1	<0.01	0.03	0.02	<2	-	-	1.20	0.05	<0.001	<0.001	<0.0001
18/03/2019		EM1904168	0.59	0.8	0.2	<0.01	0.10	-	<2	-	-	-	-	-	<0.001	-
9/09/2019		EM1915222	0.30	0.4	0.1	0.01	0.09	-	<2	-	6	-	-	-	<0.001	-
25/03/2020		EM2005146	0.63	2.0	1.4	<0.01	1.23	-	<2	-	2	-	-	-	<0.001	-
30/09/2020		EM2017163	0.27	0.9	0.6	0.01	0.16	-	<16	-	10	-	-	-	<0.001	-
24/03/2021		EM2105221	0.49	1.0	0.5	<0.01	0.09	-	<10	-	<1	-	-	-	<0.001	-
28/09/2021		EM2119193	0.26	0.6	0.3	0.15	<0.01	-	<10	-	10	-	-	0.001	<0.001	0.0002
12/09/2017	B11	EM1712490	0.02	0.2	0.2	<0.01	0.07	-	<2	-	2	-	-	-	<0.001	-
21/03/2018		EM1805110	0.01	<0.1	<0.1	<0.01	0.10	-	<2	-	4	-	-	-	<0.001	-
19/09/2018		EM1815239	0.03	0.2	0.2	<0.01	0.15	0.03	<2	-	-	8.28	0.74	0.013	<0.001	<0.0001
20/03/2019		EM1904168	<0.01	<0.1	<0.1	<0.01	<0.01	-	2	-	10	-	-	-	<0.001	-
9/09/2019		EM1915222	0.02	<0.1	<0.1	<0.01	0.06	-	<2	-	<1	-	-	-	<0.001	-
17/12/2019		EM1921873	<0.01	0.9	0.9	<0.01	0.17	-	3	-	4	-	-	-	<0.001	-
24/03/2020		EM2005146	<0.01	0.7	0.7	<0.01	0.22	-	2	-	<1	-	-	-	<0.001	-
29/09/2020		EM2017090	0.01	1.3	1.3	<0.01	0.10	-	<10	-	6	-	-	-	<0.001	-
23/03/2021		EM2105110	<0.01	1.3	1.3	<0.01	0.07	-	8	-	<1	-	-	-	<0.001	-
29/09/2021		EM2119450	<0.01	0.5	0.5	<0.01	0.02	-	7	-	3	-	-	-	<0.001	-
2/08/2016	B12	EM1609083	0.06	3.2	3.1	<0.01	1.53	-	<2	-	2	-	-	-	<0.001	-
27/02/2017		EM1702198	<0.01	4.4	4.4	<0.01	2.17	-	2	-	2	-	-	-	<0.001	-
11/09/2017		EM1712490	0.02	1.4	1.4	<0.01	0.49	-	<2	-	2	-	-	-	<0.001	-
20/03/2018		EM1804934	<0.01	0.2	0.2	<0.01	0.39	-	<2	-	2	-	-	-	<0.001	-
18/09/2018		EM1815239	2.54	3.2	0.7	<0.01	0.38	0.15	<2	-	-	8.55	0.03	0.003	<0.001	0.0002
19/03/2019		EM1904168	1.72	1.7	<0.1	<0.01	0.21	-	<2	-	7	-	-	-	<0.001	-

Table 2 - Historical Groundwater

Table 2: Historical Groundwater			Nitrogen (Total Oxidised) (as N)	Nitrogen (Total)	Kjeldahl Nitrogen Total	Reactive Phosphorus as P	Phosphorus (Total)	Phosphorus (Total) (filtered)	BOD	BOD (filtered)	Dissolved Organic Carbon	Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Cadmium
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.01	0.1	0.1	0.01	0.01	0.01	2	2	1	0.01	0.01	0.001	0.001	0.0001
ANZECC 2000 - Stock Watering												5	5	0.5	0.5	0.01
ANZG (2018) - FW - 95% (updated 26 July 2021)												0.055	0.055	0.013	0.013	0.0002
ADWG 2011 Health (v3.6 updated 2021)														0.01	0.01	0.002
ANZECC 2000 Irrigation - Long-term Trigger Values				5			0.05	0.05				5	5	0.1	0.1	0.01
ANZECC 2000 Irrigation - Short-term Trigger Values				25			0.8	0.8				20	20	2	2	0.05
Date	**Field ID**	**Lab Report Number**														
10/09/2019		EM1915222	2.32	3.4	1.1	<0.01	0.51	-	<2	-	4	-	-	-	<0.001	-
17/12/2019		EM1921873	2.29	2.3	<0.1	<0.01	<0.01	-	<2	-	4	-	-	-	<0.001	-
24/03/2020		EM2005146	2.37	3.1	0.7	<0.01	0.06	-	<2	-	4	-	-	-	<0.001	-
28/09/2020		EM2017090	2.30	2.5	0.2	<0.01	0.02	-	<10	-	5	-	-	-	<0.001	-
23/03/2021		EM2105110	2.16	3.1	0.9	<0.01	0.05	-	<10	-	<1	-	-	-	<0.001	-
29/09/2021		EM2119450	2.24	2.5	0.3	<0.01	0.02	-	<10	-	2	-	-	-	<0.001	-
3/08/2016	B14	EM1609217	2.21	2.7	0.5	<0.01	0.41	-	<2	-	15	-	-	-	<0.001	-
27/02/2017		EM1702198	1.70	2.1	0.4	<0.01	0.02	-	<2	-	2	-	-	-	<0.001	-
11/09/2017		EM1712490	1.71	2.0	0.3	<0.01	0.03	-	<2	-	2	-	-	-	<0.001	-
21/03/2018		EM1805110	1.92	1.9	<0.1	<0.01	0.37	-	<2	-	9	-	-	-	<0.001	-
18/09/2018		EM1815239	0.02	0.9	0.9	<0.01	0.60	0.41	<2	-	-	25.5	0.02	0.005	<0.001	0.0002
18/03/2019		EM1904168	<0.01	0.4	0.4	<0.01	0.48	-	<2	-	-	-	-	-	<0.001	-
11/09/2019		EM1915222	0.04	1.0	1.0	<0.01	0.45	-	<2	-	3	-	-	-	<0.001	-
24/03/2020		EM2005146	0.16	2.9	2.7	0.01	1.36	-	8	-	2	-	-	-	<0.001	-
28/09/2020		EM2017090	0.03	3.7	3.7	<0.01	1.33	-	<10	-	9	-	-	-	<0.001	-
22/03/2021		EM2104983	<0.01	11.3	11.3	<0.01	3.89	-	<10	-	2	-	-	-	<0.001	-
28/09/2021		EM2119193	<0.01	1.1	1.1	<0.01	0.21	-	<10	-	5	-	-	0.006	<0.001	0.0007
4/08/2016	B15	EM1609217	0.05	<0.1	<0.1	<0.01	0.11	-	<2	-	10	-	-	-	<0.001	-
15/12/2016		EM1615347	0.03	0.1	0.1	0.02	0.13	-	17	-	-	-	-	-	<0.001	-
1/03/2017		EM1702335	0.10	0.5	0.4	<0.01	0.03	-	<2	-	3	-	-	-	<0.001	-
14/06/2017		EM1707805	0.16	0.9	0.7	<0.01	0.64	-	5	-	-	-	-	-	<0.001	-
13/09/2017		EM1712490	0.10	0.3	0.2	<0.01	0.09	-	<2	-	2	-	-	-	<0.001	-
3/08/2016	B16	EM1609217	0.37	0.4	<0.1	<0.01	0.64	-	<2	-	9	-	-	-	<0.001	-
15/12/2016		EM1615347	0.27	1.0	0.7	<0.01	1.04	-	<2	-	-	-	-	-	<0.001	-
2/03/2017		EM1702335	0.21	0.7	0.5	<0.01	0.51	-	<2	-	2	-	-	-	<0.001	-
14/06/2017		EM1707805	0.25	0.6	0.4	<0.01	4.00	-	5	-	-	-	-	-	<0.001	-
12/09/2017		EM1712490	0.33	0.8	0.5	<0.01	0.42	-	<2	-	1	-	-	-	<0.001	-
3/08/2016	B17	EM1609217	0.40	3.1	2.7	<0.01	2.15	-	<2	-	3	-	-	-	<0.001	-
15/12/2016		EM1615347	1.20	5.5	4.3	<0.01	2.23	-	<2	-	-	-	-	-	<0.001	-
3/03/2017		EM1702335	1.00	1.3	0.3	<0.01	0.55	-	<2	-	<1	-	-	-	<0.001	-
14/06/2017		EM1707805	0.35	3.8	3.4	<0.01	2.78	-	<2	-	-	-	-	-	<0.001	-
13/09/2017		EM1712490	0.56	5.6	5.0	0.01	4.25	-	<2	-	1	-	-	-	<0.001	-
3/08/2016	B21A	EM1609217	<0.01	0.8	0.8	<0.01	0.70	-	<2	-	7	-	-	-	0.002	-
14/06/2017		EM1707805	0.08	0.4	0.3	<0.01	0.23	-	-	-	-	-	-	-	-	-

Table 2 - Historical Groundwater

			Metals												
Table 2: Historical Groundwater			Cadmium (filtered)	Chromium (III+VI)	Chromium (III+VI) (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.0001	0.001	0.001	0.001	0.001	0.05	0.05	0.001	0.001	0.001	0.001	0.0001	0.0001	0.001
ANZECC 2000 - Stock Watering			0.01	1	1	1	1			0.1	0.1			0.002	0.002	1
ANZG (2018) - FW - 95% (updated 26 July 2021)			0.0002	0.001	0.001	0.0014	0.0014			0.0034	0.0034	1.9	1.9	0.0006	0.0006	0.011
ADWG 2011 Health (v3.6 updated 2021)			0.002			2	2			0.01	0.01	0.5	0.5	0.001	0.001	0.02
ANZECC 2000 Irrigation - Long-term Trigger Values			0.01	0.1	0.1	0.2	0.2	0.2	0.2	2	2	0.2	0.2	0.002	0.002	0.2
ANZECC 2000 Irrigation - Short-term Trigger Values			0.05	1	1	5	5	10	10	5	5	10	10	0.002	0.002	2
Date	**Field ID**	**Lab Report Number**														
4/08/2016	B2	EM1609217	<0.0001	-	<0.001	-	<0.001	27.9	15.6	-	<0.001	-	1.50	-	<0.0001	-
28/02/2017		EM1702250	<0.0001	-	<0.001	-	<0.001	50.7	29.9	-	<0.001	-	3.35	-	<0.0001	-
12/09/2017		EM1712490	<0.0001	-	<0.001	-	<0.001	61.8	-	-	<0.001	-	2.14	-	<0.0001	-
21/03/2018		EM1805110	<0.0001	-	<0.001	-	<0.001	33.8	-	-	<0.001	-	3.55	-	<0.0001	-
19/09/2018		EM1815239	<0.0001	0.002	0.001	0.004	0.104	23.1	26.4	0.004	0.007	2.34	2.30	<0.0001	<0.0001	0.063
20/03/2019		EM1904168	<0.0001	-	<0.001	-	0.003	-	11.4	-	<0.001	-	3.49	-	<0.0001	-
10/09/2019		EM1915222	<0.0001	-	<0.001	-	0.003	-	29.3	-	<0.001	-	2.25	-	<0.0001	-
17/12/2019		EM1921873	<0.0001	-	<0.001	-	<0.001	-	24.2	-	<0.001	-	3.72	-	<0.0001	-
25/03/2020		EM2005146	<0.0001	-	<0.001	-	<0.001	-	27.1	-	<0.001	-	3.19	-	<0.0001	-
29/09/2020		EM2017090	0.0002	-	0.001	-	0.010	-	2.67	-	<0.001	-	0.454	-	<0.0001	-
24/03/2021		EM2105221	<0.0001	-	<0.001	-	<0.001	-	23.4	-	<0.001	-	2.89	-	<0.0001	-
29/09/2021		EM2119450	0.0001	-	0.002	-	0.004	-	3.79	-	<0.001	-	0.533	-	<0.0001	-
3/08/2016	B3	EM1609217	<0.0001	-	<0.001	-	0.018	10.4	3.15	-	0.006	-	0.038	-	<0.0001	-
27/02/2017		EM1702198	<0.0001	-	0.001	-	0.020	34.7	17.1	-	0.007	-	0.047	-	<0.0001	-
11/09/2017		EM1712490	<0.0001	-	<0.001	-	<0.001	483	-	-	<0.001	-	0.226	-	<0.0001	-
4/08/2016	B4	EM1609217	<0.0001	-	<0.001	-	<0.001	6.81	2.00	-	<0.001	-	0.128	-	<0.0001	-
28/02/2017		EM1702250	<0.0001	-	<0.001	-	<0.001	45.3	12.0	-	<0.001	-	0.358	-	<0.0001	-
12/09/2017		EM1712490	<0.0001	-	<0.001	-	<0.001	36.8	-	-	<0.001	-	0.158	-	<0.0001	-
21/03/2018		EM1805110	<0.0001	-	<0.001	-	<0.001	24.0	-	-	<0.001	-	0.470	-	<0.0001	-
19/09/2018		EM1815239	<0.0001	0.002	<0.001	0.003	0.041	8.03	10.1	0.004	0.002	0.254	0.246	<0.0001	<0.0001	0.014
20/03/2019		EM1904168	<0.0001	-	<0.001	-	0.056	-	21.6	-	<0.001	-	0.491	-	<0.0001	-
9/09/2019		EM1915222	<0.0001	-	<0.001	-	0.003	-	29.4	-	<0.001	-	2.28	-	<0.0001	-
17/12/2019		EM1921873	<0.0001	-	<0.001	-	0.005	-	19.5	-	<0.001	-	0.374	-	<0.0001	-
25/03/2020		EM2005146	<0.0001	-	<0.001	-	0.004	-	32.7	-	<0.001	-	0.476	-	<0.0001	-
29/09/2020		EM2017090	<0.0001	-	<0.001	-	<0.001	-	11.8	-	<0.001	-	0.265	-	<0.0001	-
24/03/2021		EM2105221	<0.0001	-	<0.001	-	<0.001	-	29.9	-	<0.001	-	0.571	-	<0.0001	-
29/09/2021		EM2119450	<0.0001	-	<0.001	-	<0.001	-	6.28	-	<0.001	-	0.214	-	<0.0001	-
2/08/2016	B6	EM1609083	<0.0001	-	<0.001	-	<0.001	6.03	-	-	<0.001	-	0.11	-	<0.0001	-
27/02/2017		EM1702198	<0.0001	-	<0.001	-	<0.001	7.78	5.62	-	<0.001	-	0.120	-	<0.0001	-
11/09/2017		EM1712490	<0.0001	-	<0.001	-	<0.001	7.33	-	-	<0.001	-	0.104	-	<0.0001	-
20/03/2018		EM1804934	<0.0001	-	<0.001	-	0.003	5.59	4.33	-	<0.001	-	0.116	-	<0.0001	-
18/09/2018		EM1815239	<0.0001	<0.001	<0.001	0.001	0.041	7.10	8.32	<0.001	0.003	0.117	0.114	<0.0001	<0.0001	<0.001
19/03/2019		EM1904168	<0.0001	-	<0.001	-	<0.001	-	4.36	-	<0.001	-	0.120	-	<0.0001	-
10/09/2019		EM1915222	<0.0001	-	<0.001	-	0.002	-	5.79	-	<0.001	-	0.135	-	<0.0001	-
23/03/2020		EM2005146	<0.0001	-	<0.001	-	0.013	-	6.13	-	0.001	-	0.121	-	<0.0001	-
28/09/2020		EM2017090	<0.0001	-	<0.001	-	0.105	-	6.07	-	<0.001	-	0.126	-	<0.0001	-

Table 2 - Historical Groundwater

			Metals												
Table 2: Historical Groundwater			Cadmium (filtered)	Chromium (III+VI)	Chromium (III+VI) (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.0001	0.001	0.001	0.001	0.001	0.05	0.05	0.001	0.001	0.001	0.001	0.0001	0.0001	0.001
ANZECC 2000 - Stock Watering			0.01	1	1	1	1			0.1	0.1			0.002	0.002	1
ANZG (2018) - FW - 95% (updated 26 July 2021)			0.0002	0.001	0.001	0.0014	0.0014			0.0034	0.0034	1.9	1.9	0.0006	0.0006	0.011
ADWG 2011 Health (v3.6 updated 2021)			0.002			2	2			0.01	0.01	0.5	0.5	0.001	0.001	0.02
ANZECC 2000 Irrigation - Long-term Trigger Values			0.01	0.1	0.1	0.2	0.2	0.2	0.2	2	2	0.2	0.2	0.002	0.002	0.2
ANZECC 2000 Irrigation - Short-term Trigger Values			0.05	1	1	5	5	10	10	5	5	10	10	0.002	0.002	2
Date	**Field ID**	**Lab Report Number**														
23/03/2021		EM2105110	<0.0001	-	<0.001	-	<0.001	-	3.36	-	<0.001	-	0.103	-	<0.0001	-
28/09/2021		EM2119193	-	0.002	<0.001	0.024	0.002	13.8	<0.05	0.005	<0.001	0.136	0.070	<0.0001	<0.0001	<0.001
3/08/2016	B7	EM1609217	<0.0001	-	<0.001	-	<0.001	2.61	<0.05	-	<0.001	-	0.004	-	<0.0001	-
28/02/2017		EM1702250	<0.0001	-	<0.001	-	<0.001	4.31	<0.05	-	<0.001	-	0.008	-	<0.0001	-
11/09/2017		EM1712490	<0.0001	-	<0.001	-	<0.001	2.62	-	-	<0.001	-	0.005	-	<0.0001	-
20/03/2018		EM1804934	<0.0001	-	<0.001	-	<0.001	5.76	0.06	-	<0.001	-	0.009	-	<0.0001	-
19/09/2018		EM1815239	<0.0001	0.006	<0.001	0.003	<0.001	1.82	0.05	0.006	<0.001	0.017	0.005	<0.0001	<0.0001	0.002
19/03/2019		EM1904168	<0.0001	-	<0.001	-	0.002	-	<0.05	-	<0.001	-	0.008	-	<0.0001	-
11/09/2019		EM1915222	<0.0001	-	<0.001	-	0.008	-	<0.05	-	<0.001	-	0.005	-	<0.0001	-
24/03/2020		EM2005146	<0.0001	-	<0.001	-	0.004	-	<0.05	-	<0.001	-	0.007	-	<0.0001	-
28/09/2020		EM2017090	<0.0001	-	<0.001	-	0.066	-	<0.05	-	0.002	-	0.009	-	<0.0001	-
23/03/2021		EM2105110	<0.0001	-	<0.001	-	<0.001	-	<0.05	-	<0.001	-	0.005	-	<0.0001	-
28/09/2021		EM2119193	-	<0.001	<0.001	<0.001	<0.001	0.14	<0.05	<0.001	<0.001	0.006	0.002	<0.0001	<0.0001	<0.001
13/09/2017	B9	EM1712490	<0.0001	-	<0.001	-	<0.001	2.44	-	-	<0.001	-	<0.001	-	<0.0001	-
21/03/2018		EM1805110	<0.0001	-	<0.001	-	0.006	10.1	-	-	<0.001	-	0.021	-	<0.0001	-
19/09/2018		EM1815239	<0.0001	0.003	<0.001	0.002	0.013	1.00	0.08	0.001	<0.001	0.171	0.003	<0.0001	<0.0001	0.010
18/03/2019		EM1904168	<0.0001	-	<0.001	-	0.008	-	0.06	-	<0.001	-	0.004	-	<0.0001	-
9/09/2019		EM1915222	<0.0001	-	<0.001	-	0.005	-	0.16	-	<0.001	-	0.013	-	<0.0001	-
25/03/2020		EM2005146	<0.0001	-	<0.001	-	0.005	-	<0.05	-	<0.001	-	0.037	-	<0.0001	-
30/09/2020		EM2017163	<0.0001	-	<0.001	-	0.155	-	0.21	-	0.003	-	0.008	-	<0.0001	-
24/03/2021		EM2105221	<0.0001	-	<0.001	-	<0.001	-	<0.05	-	<0.001	-	0.001	-	<0.0001	-
28/09/2021		EM2119193	-	0.011	<0.001	0.006	<0.001	5.99	<0.05	0.008	<0.001	0.992	0.001	<0.0001	<0.0001	0.054
12/09/2017	B11	EM1712490	<0.0001	-	<0.001	-	0.031	25.6	-	-	0.018	-	0.056	-	<0.0001	-
21/03/2018		EM1805110	<0.0001	-	<0.001	-	0.021	41.5	-	-	0.008	-	0.077	-	<0.0001	-
19/09/2018		EM1815239	<0.0001	0.022	0.001	0.035	0.022	51.7	21.0	0.034	0.011	0.072	0.070	<0.0001	<0.0001	0.019
20/03/2019		EM1904168	0.0002	-	<0.001	-	0.012	-	27.2	-	0.003	-	0.100	-	<0.0001	-
9/09/2019		EM1915222	0.0001	-	0.001	-	0.032	-	36.9	-	0.017	-	0.100	-	<0.0001	-
17/12/2019		EM1921873	0.0001	-	<0.001	-	0.016	-	43.5	-	0.006	-	0.092	-	<0.0001	-
24/03/2020		EM2005146	<0.0001	-	<0.001	-	0.010	-	34.5	-	0.002	-	0.075	-	<0.0001	-
29/09/2020		EM2017090	0.0002	-	0.001	-	0.147	-	58.2	-	0.012	-	0.106	-	<0.0001	-
23/03/2021		EM2105110	<0.0001	-	<0.001	-	0.006	-	61.1	-	0.003	-	0.091	-	<0.0001	-
29/09/2021		EM2119450	<0.0001	-	0.001	-	0.021	-	72.3	-	0.017	-	0.128	-	<0.0001	-
2/08/2016	B12	EM1609083	<0.0001	-	<0.001	-	0.004	44.2	-	-	<0.001	-	0.062	-	<0.0001	-
27/02/2017		EM1702198	<0.0001	-	<0.001	-	0.011	32.4	0.06	-	<0.001	-	0.081	-	<0.0001	-
11/09/2017		EM1712490	<0.0001	-	<0.001	-	<0.001	28.4	-	-	<0.001	-	0.053	-	<0.0001	-
20/03/2018		EM1804934	<0.0001	-	<0.001	-	0.002	2.75	0.22	-	<0.001	-	0.087	-	<0.0001	-
18/09/2018		EM1815239	<0.0001	0.018	<0.001	0.018	0.024	7.58	<0.05	0.042	0.002	0.128	0.011	<0.0001	<0.0001	0.045
19/03/2019		EM1904168	<0.0001	-	<0.001	-	0.007	-	<0.05	-	<0.001	-	0.025	-	<0.0001	-

Table 2 - Historical Groundwater

			Metals												
Table 2: Historical Groundwater			Cadmium (filtered)	Chromium (III+VI)	Chromium (III+VI) (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.0001	0.001	0.001	0.001	0.001	0.05	0.05	0.001	0.001	0.001	0.001	0.0001	0.0001	0.001
ANZECC 2000 - Stock Watering			0.01	1	1	1	1			0.1	0.1			0.002	0.002	1
ANZG (2018) - FW - 95% (updated 26 July 2021)			0.0002	0.001	0.001	0.0014	0.0014			0.0034	0.0034	1.9	1.9	0.0006	0.0006	0.011
ADWG 2011 Health (v3.6 updated 2021)			0.002			2	2			0.01	0.01	0.5	0.5	0.001	0.001	0.02
ANZECC 2000 Irrigation - Long-term Trigger Values			0.01	0.1	0.1	0.2	0.2	0.2	0.2	2	2	0.2	0.2	0.002	0.002	0.2
ANZECC 2000 Irrigation - Short-term Trigger Values			0.05	1	1	5	5	10	10	5	5	10	10	0.002	0.002	2
Date	**Field ID**	**Lab Report Number**														
10/09/2019		EM1915222	<0.0001	-	<0.001	-	0.012	-	<0.05	-	0.001	-	0.014	-	<0.0001	-
17/12/2019		EM1921873	<0.0001	-	<0.001	-	0.020	-	<0.05	-	0.002	-	0.014	-	<0.0001	-
24/03/2020		EM2005146	<0.0001	-	<0.001	-	0.002	-	<0.05	-	<0.001	-	0.031	-	<0.0001	-
28/09/2020		EM2017090	<0.0001	-	<0.001	-	0.118	-	<0.05	-	0.003	-	0.029	-	<0.0001	-
23/03/2021		EM2105110	<0.0001	-	<0.001	-	0.002	-	<0.05	-	<0.001	-	0.020	-	<0.0001	-
29/09/2021		EM2119450	<0.0001	-	<0.001	-	0.002	-	<0.05	-	<0.001	-	0.026	-	<0.0001	-
3/08/2016	B14	EM1609217	<0.0001	-	<0.001	-	<0.001	27.3	<0.05	-	<0.001	-	0.014	-	<0.0001	-
27/02/2017		EM1702198	<0.0001	-	<0.001	-	<0.001	1.24	<0.05	-	<0.001	-	0.016	-	<0.0001	-
11/09/2017		EM1712490	<0.0001	-	<0.001	-	<0.001	0.98	-	-	<0.001	-	0.014	-	<0.0001	-
21/03/2018		EM1805110	<0.0001	-	<0.001	-	0.005	0.26	-	-	<0.001	-	0.016	-	<0.0001	-
18/09/2018		EM1815239	<0.0001	0.092	<0.001	0.057	0.012	22.6	0.17	0.043	<0.001	0.238	0.074	0.0011	<0.0001	0.060
18/03/2019		EM1904168	<0.0001	-	<0.001	-	0.010	-	0.07	-	0.001	-	0.060	-	<0.0001	-
11/09/2019		EM1915222	<0.0001	-	<0.001	-	0.010	-	0.28	-	<0.001	-	0.074	-	<0.0001	-
24/03/2020		EM2005146	<0.0001	-	<0.001	-	0.006	-	0.27	-	<0.001	-	0.119	-	<0.0001	-
28/09/2020		EM2017090	<0.0001	-	<0.001	-	0.074	-	0.67	-	0.004	-	0.137	-	<0.0001	-
22/03/2021		EM2104983	<0.0001	-	<0.001	-	<0.001	-	0.51	-	<0.001	-	0.105	-	<0.0001	-
28/09/2021		EM2119193	-	0.129	<0.001	0.147	0.002	37.4	<0.05	0.114	<0.001	0.461	0.010	<0.0001	<0.0001	0.092
4/08/2016	B15	EM1609217	<0.0001	-	<0.001	-	<0.001	4.72	<0.05	-	<0.001	-	0.542	-	<0.0001	-
15/12/2016		EM1615347	<0.0001	-	<0.001	-	0.002	-	0.14	-	<0.001	-	0.012	-	<0.0001	-
1/03/2017		EM1702335	0.0002	-	<0.001	-	0.002	3.84	0.11	-	<0.001	-	0.008	-	<0.0001	-
14/06/2017		EM1707805	0.0002	-	<0.001	-	0.001	-	-	-	<0.001	-	-	-	<0.0001	-
13/09/2017		EM1712490	<0.0001	-	<0.001	-	<0.001	1.64	-	-	<0.001	-	0.006	-	<0.0001	-
3/08/2016	B16	EM1609217	<0.0001	-	<0.001	-	<0.001	8.52	<0.05	-	<0.001	-	0.001	-	<0.0001	-
15/12/2016		EM1615347	<0.0001	-	0.001	-	0.002	-	<0.05	-	<0.001	-	0.005	-	<0.0001	-
2/03/2017		EM1702335	<0.0001	-	0.001	-	0.002	11.2	<0.05	-	<0.001	-	0.002	-	<0.0001	-
14/06/2017		EM1707805	<0.0001	-	<0.001	-	<0.001	-	-	-	<0.001	-	-	-	<0.0001	-
12/09/2017		EM1712490	<0.0001	-	0.001	-	<0.001	8.33	-	-	<0.001	-	<0.001	-	<0.0001	-
3/08/2016	B17	EM1609217	<0.0001	-	<0.001	-	0.001	59.9	<0.05	-	<0.001	-	0.034	-	<0.0001	-
15/12/2016		EM1615347	<0.0001	-	<0.001	-	0.012	-	<0.05	-	<0.001	-	0.007	-	<0.0001	-
3/03/2017		EM1702335	<0.0001	-	<0.001	-	<0.001	51.2	<0.05	-	<0.001	-	0.008	-	<0.0001	-
14/06/2017		EM1707805	<0.0001	-	<0.001	-	<0.001	-	-	-	<0.001	-	-	-	<0.0001	-
13/09/2017		EM1712490	<0.0001	-	<0.001	-	<0.001	36.7	-	-	<0.001	-	0.008	-	<0.0001	-
3/08/2016	B21A	EM1609217	<0.0001	-	<0.001	-	<0.001	23.0	<0.05	-	<0.001	-	0.519	-	<0.0001	-
14/06/2017		EM1707805	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 2 - Historical Groundwater

							BTEXN								
Table 2: Historical Groundwater			Nickel (filtered)	Selenium	Selenium (filtered)	Zinc	Zinc (filtered)	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX (Sum of Total) - Lab Calc	Naphthalene (BTEXN suite)	Naphthalene
			mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			0.001	0.01	0.01	0.005	0.005	1	2	2	2	2	2	1	5	1
ANZECC 2000 - Stock Watering			1	0.02	0.02	20	20									
ANZG (2018) - FW - 95% (updated 26 July 2021)			0.011	0.011	0.011	0.008	0.008	950	180	80	350				16	16
ADWG 2011 Health (v3.6 updated 2021)			0.02	0.01	0.01			1	800	300			600			
ANZECC 2000 Irrigation - Long-term Trigger Values			0.2	0.02	0.02	2	2									
ANZECC 2000 Irrigation - Short-term Trigger Values			2	0.05	0.05	5	5									
Date	**Field ID**	**Lab Report Number**														
4/08/2016	B2	EM1609217	0.009	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-
28/02/2017		EM1702250	0.011	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-
12/09/2017		EM1712490	0.010	-	<0.01	-	0.029	<1	<2	<2	<2	<2	<2	<1	<5	-
21/03/2018		EM1805110	0.009	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-
19/09/2018		EM1815239	0.018	<0.01	<0.01	0.060	0.181	-	-	-	-	-	-	-	-	-
20/03/2019		EM1904168	0.009	-	<0.01	-	0.018	<1	<2	<2	<2	<2	<2	<1	-	<5
10/09/2019		EM1915222	0.015	-	<0.01	-	0.024	<1	<2	<2	<2	<2	<2	<1	-	<5
17/12/2019		EM1921873	0.006	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5
25/03/2020		EM2005146	0.007	-	<0.01	-	<0.005	-	-	-	-	-	-	-	-	-
29/09/2020		EM2017090	0.021	-	<0.01	-	0.016	<1	<2	<2	<2	<2	<2	<1	-	<5
24/03/2021		EM2105221	0.016	-	<0.01	-	0.008	<1	<2	<2	<2	<2	<2	<1	-	<5
29/09/2021		EM2119450	0.029	-	<0.01	-	0.013	<1	<2	<2	<2	<2	<2	<1	-	<5
3/08/2016	B3	EM1609217	0.008	-	<0.01	-	0.046	<1	<2	<2	<2	<2	<2	<1	<5	-
27/02/2017		EM1702198	0.010	-	<0.01	-	0.038	<1	<2	<2	<2	<2	<2	<1	<5	-
11/09/2017		EM1712490	0.009	-	<0.01	-	0.022	<1	<2	<2	<2	<2	<2	<1	<5	-
4/08/2016	B4	EM1609217	0.004	-	<0.01	-	0.024	<1	<2	<2	<2	<2	<2	<1	<5	-
28/02/2017		EM1702250	0.005	-	<0.01	-	0.013	<1	<2	<2	<2	<2	<2	<1	<5	-
12/09/2017		EM1712490	0.005	-	<0.01	-	0.020	<1	<2	<2	<2	<2	<2	<1	<5	-
21/03/2018		EM1805110	0.002	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-
19/09/2018		EM1815239	0.008	<0.01	<0.01	0.098	0.050	-	-	-	-	-	-	-	-	-
20/03/2019		EM1904168	0.003	-	<0.01	-	0.030	<1	<2	<2	<2	<2	<2	<1	-	<5
9/09/2019		EM1915222	0.016	-	<0.01	-	0.025	<1	<2	<2	<2	<2	<2	<1	-	<5
17/12/2019		EM1921873	0.003	-	<0.01	-	0.009	<1	<2	<2	<2	<2	<2	<1	-	<5
25/03/2020		EM2005146	0.003	-	<0.01	-	0.030	-	-	-	-	-	-	-	-	-
29/09/2020		EM2017090	0.003	-	<0.01	-	0.013	<1	<2	<2	<2	<2	<2	<1	-	<5
24/03/2021		EM2105221	0.001	-	<0.01	-	0.008	<1	<2	<2	<2	<2	<2	<1	-	<5
29/09/2021		EM2119450	0.004	-	<0.01	-	0.015	<1	<2	<2	<2	<2	<2	<1	-	<5
2/08/2016	B6	EM1609083	<0.001	-	-	-	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-
27/02/2017		EM1702198	<0.001	-	<0.01	-	0.019	<1	<2	<2	<2	<2	<2	<1	<5	-
11/09/2017		EM1712490	<0.001	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-
20/03/2018		EM1804934	0.002	-	<0.01	-	0.008	<1	<2	<2	<2	<2	<2	<1	<5	-
18/09/2018		EM1815239	0.005	<0.01	<0.01	<0.005	0.055	-	-	-	-	-	-	-	-	-
19/03/2019		EM1904168	<0.001	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5
10/09/2019		EM1915222	0.002	-	<0.01	-	0.010	<1	<2	<2	<2	<2	<2	<1	-	<5
23/03/2020		EM2005146	0.014	-	<0.01	-	0.070	-	-	-	-	-	-	-	-	-
28/09/2020		EM2017090	0.010	-	<0.01	-	0.135	<1	<2	<2	<2	<2	<2	<1	-	<5

Table 2 - Historical Groundwater

						BTEXN								
Table 2: Historical Groundwater			Nickel (filtered)	Selenium	Selenium (filtered)	Zinc	Zinc (filtered)	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX (Sum of Total) - Lab Calc	Naphthalene (BTEXN suite)	Naphthalene
			mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			0.001	0.01	0.01	0.005	0.005	1	2	2	2	2	2	1	5	1
ANZECC 2000 - Stock Watering			1	0.02	0.02	20	20									
ANZG (2018) - FW - 95% (updated 26 July 2021)			0.011	0.011	0.011	0.008	0.008	950	180	80	350				16	16
ADWG 2011 Health (v3.6 updated 2021)			0.02	0.01	0.01			1	800	300			600			
ANZECC 2000 Irrigation - Long-term Trigger Values			0.2	0.02	0.02	2	2									
ANZECC 2000 Irrigation - Short-term Trigger Values			2	0.05	0.05	5	5									
Date	**Field ID**	**Lab Report Number**														
23/03/2021		EM2105110	<0.001	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5
28/09/2021		EM2119193	<0.001	<0.01	<0.01	0.010	0.012	<1	<2	<2	<2	<2	<2	<1	-	<5
3/08/2016	B7	EM1609217	<0.001	-	<0.01	-	0.005	<1	<2	<2	<2	<2	<2	<1	<5	-
28/02/2017		EM1702250	<0.001	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-
11/09/2017		EM1712490	<0.001	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-
20/03/2018		EM1804934	<0.001	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-
19/09/2018		EM1815239	<0.001	<0.01	<0.01	0.013	<0.005	-	-	-	-	-	-	-	-	-
19/03/2019		EM1904168	0.002	-	<0.01	-	0.024	<1	<2	<2	<2	<2	<2	<1	-	<5
11/09/2019		EM1915222	0.006	-	<0.01	-	0.044	<1	<2	<2	<2	<2	<2	<1	-	<5
24/03/2020		EM2005146	0.004	-	<0.01	-	0.018	-	-	-	-	-	-	-	-	-
28/09/2020		EM2017090	0.004	-	<0.01	-	0.067	<1	<2	<2	<2	<2	<2	<1	-	<5
23/03/2021		EM2105110	<0.001	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5
28/09/2021		EM2119193	<0.001	<0.01	<0.01	<0.005	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5
13/09/2017	B9	EM1712490	<0.001	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-
21/03/2018		EM1805110	0.003	-	<0.01	-	0.012	<1	<2	<2	<2	<2	<2	<1	<5	-
19/09/2018		EM1815239	0.003	<0.01	<0.01	0.010	0.022	-	-	-	-	-	-	-	-	-
18/03/2019		EM1904168	0.006	-	<0.01	-	0.066	<1	<2	<2	<2	<2	<2	<1	-	<5
9/09/2019		EM1915222	0.006	-	<0.01	-	0.055	<1	<2	<2	<2	<2	<2	<1	-	<5
25/03/2020		EM2005146	0.004	-	<0.01	-	0.023	-	-	-	-	-	-	-	-	-
30/09/2020		EM2017163	0.016	-	<0.01	-	0.147	<1	<2	<2	<2	<2	<2	<1	-	<5
24/03/2021		EM2105221	<0.001	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5
28/09/2021		EM2119193	<0.001	<0.01	<0.01	0.054	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5
12/09/2017	B11	EM1712490	0.013	-	<0.01	-	0.045	<1	<2	<2	<2	<2	<2	<1	<5	-
21/03/2018		EM1805110	0.012	-	<0.01	-	0.071	<1	<2	<2	<2	<2	<2	<1	<5	-
19/09/2018		EM1815239	0.015	<0.01	<0.01	0.056	0.049	-	-	-	-	-	-	-	-	-
20/03/2019		EM1904168	0.016	-	<0.01	-	0.089	<1	<2	<2	<2	<2	<2	<1	-	<5
9/09/2019		EM1915222	0.024	-	<0.01	-	0.078	<1	<2	<2	<2	<2	<2	<1	-	<5
17/12/2019		EM1921873	0.018	-	<0.01	-	0.074	<1	<2	<2	<2	<2	<2	<1	-	<5
24/03/2020		EM2005146	0.018	-	<0.01	-	0.091	-	-	-	-	-	-	-	-	-
29/09/2020		EM2017090	0.029	-	<0.01	-	0.185	<1	<2	<2	<2	<2	<2	<1	-	<5
23/03/2021		EM2105110	0.017	-	<0.01	-	0.060	<1	<2	<2	<2	<2	<2	<1	-	<5
29/09/2021		EM2119450	0.026	-	<0.01	-	0.078	<1	<2	<2	<2	<2	<2	<1	-	<5
2/08/2016	B12	EM1609083	0.001	-	-	-	0.007	<1	7	<2	<2	<2	<2	7	<5	-
27/02/2017		EM1702198	<0.001	-	<0.01	-	0.007	<1	<2	<2	<2	<2	<2	<1	<5	-
11/09/2017		EM1712490	<0.001	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-
20/03/2018		EM1804934	<0.001	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-
18/09/2018		EM1815239	0.006	<0.01	<0.01	0.112	0.040	-	-	-	-	-	-	-	-	-
19/03/2019		EM1904168	0.005	-	<0.01	-	0.052	<1	<2	<2	<2	<2	<2	<1	-	<5

Table 2 - Historical Groundwater

						BTEXN								
Table 2: Historical Groundwater			Nickel (filtered)	Selenium	Selenium (filtered)	Zinc	Zinc (filtered)	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX (Sum of Total) - Lab Calc	Naphthalene (BTEXN suite)	Naphthalene
			mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			0.001	0.01	0.01	0.005	0.005	1	2	2	2	2	2	1	5	1
ANZECC 2000 - Stock Watering			1	0.02	0.02	20	20									
ANZG (2018) - FW - 95% (updated 26 July 2021)			0.011	0.011	0.011	0.008	0.008	950	180	80	350				16	16
ADWG 2011 Health (v3.6 updated 2021)			0.02	0.01	0.01			1	800	300			600			
ANZECC 2000 Irrigation - Long-term Trigger Values			0.2	0.02	0.02	2	2									
ANZECC 2000 Irrigation - Short-term Trigger Values			2	0.05	0.05	5	5									
Date	**Field ID**	**Lab Report Number**														
10/09/2019		EM1915222	0.006	-	<0.01	-	0.083	<1	<2	<2	<2	<2	<2	<1	-	<5
17/12/2019		EM1921873	0.014	-	<0.01	-	0.077	<1	<2	<2	<2	<2	<2	<1	-	<5
24/03/2020		EM2005146	0.006	-	<0.01	-	0.014	-	-	-	-	-	-	-	-	-
28/09/2020		EM2017090	0.011	-	<0.01	-	0.153	<1	<2	<2	<2	<2	<2	<1	-	<5
23/03/2021		EM2105110	0.004	-	<0.01	-	0.009	<1	<2	<2	<2	<2	<2	<1	-	<5
29/09/2021		EM2119450	0.004	-	<0.01	-	0.012	<1	<2	<2	<2	<2	<2	<1	-	<5
3/08/2016	B14	EM1609217	0.003	-	<0.01	-	0.008	<1	<2	<2	<2	<2	<2	<1	<5	-
27/02/2017		EM1702198	0.004	-	<0.01	-	0.008	<1	<2	<2	<2	<2	<2	<1	<5	-
11/09/2017		EM1712490	0.004	-	<0.01	-	0.012	<1	<2	<2	<2	<2	<2	<1	<5	-
21/03/2018		EM1805110	0.004	-	<0.01	-	0.016	<1	<2	<2	<2	<2	<2	<1	<5	-
18/09/2018		EM1815239	0.003	<0.01	<0.01	0.150	0.017	-	-	-	-	-	-	-	-	-
18/03/2019		EM1904168	0.012	-	<0.01	-	0.121	<1	<2	<2	<2	<2	<2	<1	-	<5
11/09/2019		EM1915222	0.010	-	<0.01	-	0.051	<1	<2	<2	<2	<2	<2	<1	-	<5
24/03/2020		EM2005146	0.007	-	<0.01	-	0.025	-	-	-	-	-	-	-	-	-
28/09/2020		EM2017090	0.010	-	<0.01	-	0.161	<1	<2	<2	<2	<2	<2	<1	-	<5
22/03/2021		EM2104983	0.002	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5
28/09/2021		EM2119193	0.001	<0.01	<0.01	0.276	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5
4/08/2016	B15	EM1609217	0.027	-	<0.01	-	0.018	<1	<2	<2	<2	<2	<2	<1	<5	-
15/12/2016		EM1615347	0.010	-	<0.01	-	0.029	<1	5	<2	<2	<2	<2	5	<5	-
1/03/2017		EM1702335	0.010	-	<0.01	-	0.028	<1	<2	<2	<2	<2	<2	<1	<5	-
14/06/2017		EM1707805	0.010	-	-	-	0.026	<1	<2	<2	<2	<2	<2	<1	<5	-
13/09/2017		EM1712490	0.009	-	<0.01	-	0.030	<1	<2	<2	<2	<2	<2	<1	<5	-
3/08/2016	B16	EM1609217	<0.001	-	<0.01	-	0.005	<1	<2	<2	<2	<2	<2	<1	<5	-
15/12/2016		EM1615347	0.001	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-
2/03/2017		EM1702335	<0.001	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-
14/06/2017		EM1707805	0.003	-	-	-	0.005	<1	<2	<2	<2	<2	<2	<1	<5	-
12/09/2017		EM1712490	<0.001	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-
3/08/2016	B17	EM1609217	0.001	-	<0.01	-	0.005	<1	<2	<2	<2	<2	<2	<1	<5	-
15/12/2016		EM1615347	<0.001	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-
3/03/2017		EM1702335	<0.001	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-
14/06/2017		EM1707805	<0.001	-	-	-	0.006	<1	<2	<2	<2	<2	<2	<1	<5	-
13/09/2017		EM1712490	<0.001	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-
3/08/2016	B21A	EM1609217	0.008	-	<0.01	-	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-
14/06/2017		EM1707805	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 2 - Historical Groundwater

			TRH - NEPM 2013							TRH - NEPM 1999				
Table 2: Historical Groundwater			F1 (C6-C10 minus BTEX) µg/L	C6-C10 Fraction µg/L	F2 (>C10-C16 minus Naphthalene) µg/L	>C10-C16 Fraction µg/L	F3 (>C16-C34 Fraction) µg/L	F4 (>C34-C40 Fraction) µg/L	>C10-C40 (Sum of Total) µg/L	C6-C9 Fraction µg/L	C10-C14 Fraction µg/L	C15-C28 Fraction µg/L	C29-C36 Fraction µg/L	C10-C36 (Sum of Total) µg/L
EQL			20	20	100	100	100	100	100	20	50	100	50	50
ANZECC 2000 - Stock Watering														
ANZG (2018) - FW - 95% (updated 26 July 2021)														
ADWG 2011 Health (v3.6 updated 2021)														
ANZECC 2000 Irrigation - Long-term Trigger Values														
ANZECC 2000 Irrigation - Short-term Trigger Values														
Date	**Field ID**	**Lab Report Number**												
4/08/2016	B2	EM1609217	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
28/02/2017		EM1702250	<20	<20	<100	<100	100	<100	100	<20	<50	110	<50	110
12/09/2017		EM1712490	<20	<20	<100	<100	150	<100	150	<20	<50	140	<50	140
21/03/2018		EM1805110	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
19/09/2018		EM1815239	-	-	-	<100	<100	<100	<100	-	<50	<100	<50	<50
20/03/2019		EM1904168	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
10/09/2019		EM1915222	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
17/12/2019		EM1921873	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
25/03/2020		EM2005146	-	-	-	<100	240	<100	240	-	<50	140	130	270
29/09/2020		EM2017090	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
24/03/2021		EM2105221	<20	<20	<100	<100	900	<100	900	<20	<50	580	390	970
29/09/2021		EM2119450	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
3/08/2016	B3	EM1609217	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
27/02/2017		EM1702198	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
11/09/2017		EM1712490	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
4/08/2016	B4	EM1609217	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
28/02/2017		EM1702250	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
12/09/2017		EM1712490	<20	<20	<100	<100	150	<100	150	<20	<50	<100	80	80
21/03/2018		EM1805110	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
19/09/2018		EM1815239	-	-	-	<100	<100	<100	<100	-	<50	<100	<50	<50
20/03/2019		EM1904168	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
9/09/2019		EM1915222	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
17/12/2019		EM1921873	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
25/03/2020		EM2005146	-	-	-	<100	110	<100	110	-	<50	<100	<50	<50
29/09/2020		EM2017090	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
24/03/2021		EM2105221	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
29/09/2021		EM2119450	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
2/08/2016	B6	EM1609083	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
27/02/2017		EM1702198	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
11/09/2017		EM1712490	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
20/03/2018		EM1804934	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
18/09/2018		EM1815239	-	-	-	<100	170	<100	170	-	<50	<100	60	60
19/03/2019		EM1904168	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
10/09/2019		EM1915222	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
23/03/2020		EM2005146	-	-	-	<100	<100	<100	<100	-	<50	<100	<50	<50
28/09/2020		EM2017090	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50

Table 2 - Historical Groundwater

			TRH - NEPM 2013							TRH - NEPM 1999				
Table 2: Historical Groundwater			F1 (C6-C10 minus BTEX)	C6-C10 Fraction	F2 (>C10-C16 minus Naphthalene)	>C10-C16 Fraction	F3 (>C16-C34 Fraction)	F4 (>C34-C40 Fraction)	>C10-C40 (Sum of Total)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 (Sum of Total)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			20	20	100	100	100	100	100	20	50	100	50	50
ANZECC 2000 - Stock Watering														
ANZG (2018) - FW - 95% (updated 26 July 2021)														
ADWG 2011 Health (v3.6 updated 2021)														
ANZECC 2000 Irrigation - Long-term Trigger Values														
ANZECC 2000 Irrigation - Short-term Trigger Values														
Date	**Field ID**	**Lab Report Number**												
23/03/2021		EM2105110	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
28/09/2021		EM2119193	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
3/08/2016	B7	EM1609217	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
28/02/2017		EM1702250	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
11/09/2017		EM1712490	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
20/03/2018		EM1804934	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
19/09/2018		EM1815239	-	-	-	<100	<100	<100	<100	-	<50	<100	<50	<50
19/03/2019		EM1904168	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
11/09/2019		EM1915222	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
24/03/2020		EM2005146	-	-	-	<100	<100	<100	<100	-	<50	<100	<50	<50
28/09/2020		EM2017090	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
23/03/2021		EM2105110	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
28/09/2021		EM2119193	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
13/09/2017	B9	EM1712490	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
21/03/2018		EM1805110	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
19/09/2018		EM1815239	-	-	-	<100	<100	<100	<100	-	<50	<100	<50	<50
18/03/2019		EM1904168	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
9/09/2019		EM1915222	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
25/03/2020		EM2005146	-	-	-	<100	<100	<100	<100	-	<50	<100	<50	<50
30/09/2020		EM2017163	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
24/03/2021		EM2105221	<20	<20	<100	<100	140	<100	140	<20	<50	120	<50	120
28/09/2021		EM2119193	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
12/09/2017	B11	EM1712490	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
21/03/2018		EM1805110	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
19/09/2018		EM1815239	-	-	-	<100	<100	<100	<100	-	<50	<100	<50	<50
20/03/2019		EM1904168	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
9/09/2019		EM1915222	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
17/12/2019		EM1921873	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
24/03/2020		EM2005146	-	-	-	<100	<100	<100	<100	-	<50	<100	<50	<50
29/09/2020		EM2017090	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
23/03/2021		EM2105110	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
29/09/2021		EM2119450	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
2/08/2016	B12	EM1609083	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
27/02/2017		EM1702198	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
11/09/2017		EM1712490	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
20/03/2018		EM1804934	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
18/09/2018		EM1815239	-	-	-	<100	<100	<100	<100	-	<50	<100	<50	<50
19/03/2019		EM1904168	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50

Table 2 - Historical Groundwater

			TRH - NEPM 2013							TRH - NEPM 1999				
Table 2: Historical Groundwater			F1 (C6-C10 minus BTEX)	C6-C10 Fraction	F2 (>C10-C16 minus Naphthalene)	>C10-C16 Fraction	F3 (>C16-C34 Fraction)	F4 (>C34-C40 Fraction)	>C10-C40 (Sum of Total)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 (Sum of Total)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			20	20	100	100	100	100	100	20	50	100	50	50
ANZECC 2000 - Stock Watering														
ANZG (2018) - FW - 95% (updated 26 July 2021)														
ADWG 2011 Health (v3.6 updated 2021)														
ANZECC 2000 Irrigation - Long-term Trigger Values														
ANZECC 2000 Irrigation - Short-term Trigger Values														
Date	**Field ID**	**Lab Report Number**												
10/09/2019		EM1915222	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
17/12/2019		EM1921873	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
24/03/2020		EM2005146	-	-	-	<100	<100	<100	<100	-	<50	<100	<50	<50
28/09/2020		EM2017090	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
23/03/2021		EM2105110	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
29/09/2021		EM2119450	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
3/08/2016	B14	EM1609217	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
27/02/2017		EM1702198	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
11/09/2017		EM1712490	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
21/03/2018		EM1805110	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
18/09/2018		EM1815239	-	-	-	<100	<100	<100	<100	-	<50	<100	<50	<50
18/03/2019		EM1904168	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
11/09/2019		EM1915222	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
24/03/2020		EM2005146	-	-	-	<100	220	<100	220	-	<50	<100	150	150
28/09/2020		EM2017090	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
22/03/2021		EM2104983	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
28/09/2021		EM2119193	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
4/08/2016	B15	EM1609217	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
15/12/2016		EM1615347	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
1/03/2017		EM1702335	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
14/06/2017		EM1707805	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
13/09/2017		EM1712490	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
3/08/2016	B16	EM1609217	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
15/12/2016		EM1615347	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
2/03/2017		EM1702335	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
14/06/2017		EM1707805	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
12/09/2017		EM1712490	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
3/08/2016	B17	EM1609217	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
15/12/2016		EM1615347	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
3/03/2017		EM1702335	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
14/06/2017		EM1707805	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
13/09/2017		EM1712490	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
3/08/2016	B21A	EM1609217	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50
14/06/2017		EM1707805	-	-	-	-	-	-	-	-	-	-	-	-

Table 3 -
Surface Water 2021

				Inorganics			Acidity & Alkalinity									Major Ions
Table 3: Surface Water 2021			pH (Lab)	Electrical conductivity (lab)	Total Suspended Solids	Alkalinity (Carbonate as CaCO3)	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide as CaCO3)	Alkalinity (total as CaCO3)	Calcium (filtered)	Magnesium (filtered)	Potassium (filtered)	Sodium (filtered)	Chloride
			pH units	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.01	1	5	1	1	1	1	1	1	1	1	1
ANZECC 2000 - Stock Watering										1,000				
ANZG (2018) - FW - 95% (updated 26 July 2021)														
ADWG 2011 Health (v3.6 updated 2021)														
ANZECC 2000 Irrigation - Long-term Trigger Values			6-9	2,900										350
ANZECC 2000 Irrigation - Short-term Trigger Values														
Date	**Field ID**	**Lab Report Number**												
23 March 2021	S1	EM2105106	7.89	437	<5	<1	188	<1	188	79	6	1	14	28
22 June 2021	S1	EM2111910	8.44	502	<5	14	189	<1	203	76	6	1	16	28
28 September 2021	S1	EM2119193	8.22	505	<5	<1	176	<1	176	65	6	2	14	25
06 December 2021	S1	EM2124670	7.56	526	<5	<1	209	<1	209	63	6	1	15	31
22 March 2021	S2	EM2104983	7.92	446	<5	<1	187	<1	187	67	5	<1	14	23
22 June 2021	S2	EM2111910	8.42	487	8	13	186	<1	199	76	6	1	14	27
29 September 2021	S2	EM2119454	7.79	494	-	<1	184	<1	184	81	6	1	14	12
06 December 2021	S2	EM2124670	7.61	535	8	<1	204	<1	204	65	6	1	16	33
22 June 2021	S3	EM2111910	8.27	1,150	45	<1	287	<1	287	70	17	59	79	116
29 September 2021	S3	EM2119454	7.96	1,000	54	<1	280	<1	280	66	14	45	76	128
06 December 2021	S3	EM2124670	7.28	809	2,520	<1	296	<1	296	70	12	28	39	69
23 March 2021	S4	EM2105106	7.91	444	<5	<1	187	<1	187	78	6	1	14	26
22 June 2021	S4	EM2111910	8.27	405	6	<1	150	<1	150	56	5	1	15	27
28 September 2021	S4	EM2119193	8.27	609	<5	<1	190	<1	190	71	5	2	14	27
06 December 2021	S4	EM2124670	7.46	515	<5	<1	197	<1	197	63	6	1	14	32
22 March 2021	S6	EM2104983	7.89	484	<5	<1	196	<1	196	70	6	<1	14	23
28 September 2021	S6	EM2119193	8.2	525	<5	<1	186	<1	186	74	6	2	14	23
06 December 2021	S6	EM2124670	7.65	541	9	<1	209	<1	209	66	6	1	15	34
22 June 2021	S7	EM2111910	8.35	2,320	315	8	558	<1	566	88	47	197	181	273
29 September 2021	S7	EM2119454	8.05	1,460	132	<1	385	<1	385	40	26	133	124	182
27 September 2021	S9	EM2119193	8.27	586	<5	<1	171	<1	171	73	5	1	13	23
06 December 2021	S9	EM2124670	7.9	514	<5	<1	210	<1	210	65	6	1	15	32

Table 3 -
Surface Water 2021

					Nutrients								
Table 3: Surface Water 2021	Sulfate (filtered)	Cations Total	Anions Total	Ionic Balance	Ammonium (as N)	Ammonia as N	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total Oxidised) (as N)	Nitrogen (Total)	Kjeldahl Nitrogen Total	Phosphorus filterable reactive (P)	Phosphorus (Total)
	mg/L	meq/L	meq/L	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.1	0.1	0.01	0.01
ANZECC 2000 - Stock Watering	1,000						90	9.1					
ANZG (2018) - FW - 95% (updated 26 July 2021)						0.9	2.4						
ADWG 2011 Health (v3.6 updated 2021)	500						11.29	0.91					
ANZECC 2000 Irrigation - Long-term Trigger Values										5			0.05
ANZECC 2000 Irrigation - Short-term Trigger Values										25			0.8

Date	Field ID	Lab Report Number												
23 March 2021	S1	EM2105106	32	5.07	5.21	1.38	-	0.08	0.56	<0.01	0.56	0.7	0.1	<0.01	0.03
22 June 2021	S1	EM2111910	33	5.01	5.53	4.98	-	<0.01	1	<0.01	1	1.2	0.2	0.02	0.01
28 September 2021	S1	EM2119193	36	4.4	4.97	6.12	0.09	0.09	1.11	<0.01	1.11	1.4	0.3	<0.01	<0.01
06 December 2021	S1	EM2124670	32	4.32	5.72	14	-	0.1	0.68	<0.01	0.68	0.9	0.2	<0.01	0.02
22 March 2021	S2	EM2104983	30	4.36	5.01	6.89	-	0.02	0.65	<0.01	0.65	0.6	<0.1	<0.01	<0.01
22 June 2021	S2	EM2111910	31	4.92	5.38	4.49	-	<0.01	0.95	<0.01	0.95	1.2	0.2	<0.01	0.01
29 September 2021	S2	EM2119454	34	5.17	4.72	4.52	-	<0.01	1.17	0.01	1.18	1.7	0.5	<0.01	<0.01
06 December 2021	S2	EM2124670	32	4.46	5.67	12	-	0.09	0.69	<0.01	0.69	1	0.3	<0.01	0.03
22 June 2021	S3	EM2111910	85	9.84	10.8	4.55	-	5.94	2.9	0.2	3.1	13.7	10.6	0.61	0.94
29 September 2021	S3	EM2119454	28	8.9	9.79	4.74	-	11.2	1.14	0.05	1.19	14	12.8	0.48	0.61
06 December 2021	S3	EM2124670	15	6.89	8.17	8.49	-	1.16	0.15	0.06	0.21	20.2	20	0.04	16.2
23 March 2021	S4	EM2105106	30	5.02	5.09	0.73	-	0.03	0.66	<0.01	0.66	0.9	0.2	<0.01	0.04
22 June 2021	S4	EM2111910	23	3.88	4.24	4.35	-	0.01	0.67	0.01	0.68	0.8	0.1	0.02	<0.01
28 September 2021	S4	EM2119193	38	4.61	5.35	7.37	1.32	1.34	1.19	<0.01	1.19	1.6	0.4	<0.01	<0.01
06 December 2021	S4	EM2124670	30	4.27	5.46	12.2	-	0.04	0.68	<0.01	0.68	0.8	0.1	0.02	0.02
22 March 2021	S6	EM2104983	32	4.6	5.23	6.46	-	0.01	0.73	<0.01	0.73	0.7	<0.1	<0.01	<0.01
28 September 2021	S6	EM2119193	38	4.85	5.16	3.1	0.18	0.19	1.24	<0.01	1.24	1.5	0.3	<0.01	<0.01
06 December 2021	S6	EM2124670	34	4.46	5.84	13.4	-	0.07	0.71	<0.01	0.71	0.8	0.1	<0.01	0.02
22 June 2021	S7	EM2111910	212	21.2	23.4	5.05	-	33.6	19.3	0.5	19.8	76.2	56.4	4.9	7.62
29 September 2021	S7	EM2119454	64	12.9	14.2	4.53	-	14.2	3.64	0.09	3.73	39.5	35.8	3.86	6.77
27 September 2021	S9	EM2119193	37	4.64	4.84	2.01	<0.01	<0.01	1.26	<0.01	1.26	1.5	0.2	<0.01	<0.01
06 December 2021	S9	EM2124670	32	4.42	5.76	13.2	-	0.1	0.74	<0.01	0.74	0.8	0.1	<0.01	0.02

Table 3 -
Surface Water 2021

		Organic	Metals										
Table 3: Surface Water 2021		BOD	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Chromium (III+VI) (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL		2	0.0001	0.0001	0.001	0.001	0.001	0.001	0.05	0.05	0.001	0.001	0.001
ANZECC 2000 - Stock Watering			0.01	0.01	1	1	1	1			0.1	0.1	
ANZG (2018) - FW - 95% (updated 26 July 2021)			0.0002	0.0002	0.001	0.001	0.0014	0.0014			0.0034	0.0034	1.9
ADWG 2011 Health (v3.6 updated 2021)			0.002	0.002			2	2			0.01	0.01	0.5
ANZECC 2000 Irrigation - Long-term Trigger Values			0.01	0.01	0.1	0.1	0.2	0.2	0.2	0.2	2	2	0.2
ANZECC 2000 Irrigation - Short-term Trigger Values			0.05	0.05	1	1	5	5	10	10	5	5	10
Date	**Field ID**	**Lab Report Number**											
23 March 2021	S1	EM2105106	<2	<0.0001	<0.0001	<0.001	<0.001	<0.001	0.104	0.06	<0.05	<0.001	0.004	0.015
22 June 2021	S1	EM2111910	<2	-	-	-	-	-	-	-	-	-	-	-
28 September 2021	S1	EM2119193	<10	<0.0001	<0.0001	<0.001	<0.001	<0.001	<0.001	0.17	<0.05	<0.001	<0.001	0.015
06 December 2021	S1	EM2124670	<2	-	-	-	-	-	-	-	-	-	-	-
22 March 2021	S2	EM2104983	<2	<0.0001	<0.0001	<0.001	<0.001	<0.001	0.006	0.05	<0.05	<0.001	<0.001	0.004
22 June 2021	S2	EM2111910	<2	-	-	-	-	-	-	-	-	-	-	-
29 September 2021	S2	EM2119454	<10	<0.0001	<0.0001	<0.001	<0.001	<0.001	<0.001	0.08	<0.05	<0.001	<0.001	0.009
06 December 2021	S2	EM2124670	<2	-	-	-	-	-	-	-	-	-	-	-
22 June 2021	S3	EM2111910	2	-	-	-	-	-	-	-	-	-	-	-
29 September 2021	S3	EM2119454	22	<0.0001	<0.0001	0.007	0.004	0.005	0.003	2.86	0.51	0.002	<0.001	0.385
06 December 2021	S3	EM2124670	29	-	-	-	-	-	-	-	-	-	-	-
23 March 2021	S4	EM2105106	<2	<0.0001	<0.0001	<0.001	<0.001	<0.001	0.005	0.07	<0.05	<0.001	<0.001	0.006
22 June 2021	S4	EM2111910	<2	-	-	-	-	-	-	-	-	-	-	-
28 September 2021	S4	EM2119193	<10	<0.0001	<0.0001	<0.001	0.002	<0.001	<0.001	0.06	<0.05	<0.001	<0.001	0.006
06 December 2021	S4	EM2124670	<2	-	-	-	-	-	-	-	-	-	-	-
22 March 2021	S6	EM2104983	<2	<0.0001	<0.0001	<0.001	<0.001	<0.001	0.004	0.06	<0.05	<0.001	<0.001	0.005
28 September 2021	S6	EM2119193	<10	<0.0001	<0.0001	<0.001	<0.001	<0.001	<0.001	0.08	<0.05	<0.001	<0.001	0.006
06 December 2021	S6	EM2124670	<2	-	-	-	-	-	-	-	-	-	-	-
22 June 2021	S7	EM2111910	11	-	-	-	-	-	-	-	-	-	-	-
29 September 2021	S7	EM2119454	19	0.0002	<0.0001	0.015	0.002	0.031	0.016	8.36	0.57	0.01	<0.001	0.298
27 September 2021	S9	EM2119193	<10	<0.0001	<0.0001	<0.001	<0.001	<0.001	<0.001	0.1	<0.05	<0.001	<0.001	0.009
06 December 2021	S9	EM2124670	<2	-	-	-	-	-	-	-	-	-	-	-

Table 3 -
Surface Water 2021

Table 3: Surface Water 2021			Manganese (filtered) mg/L	Nickel mg/L	Nickel (filtered) mg/L	Zinc mg/L	Zinc (filtered) mg/L
EQL			0.001	0.001	0.001	0.005	0.005
ANZECC 2000 - Stock Watering				1	1	20	20
ANZG (2018) - FW - 95% (updated 26 July 2021)			1.9	0.011	0.011	0.008	0.008
ADWG 2011 Health (v3.6 updated 2021)			0.5	0.02	0.02		
ANZECC 2000 Irrigation - Long-term Trigger Values			0.2	0.2	0.2	2	2
ANZECC 2000 Irrigation - Short-term Trigger Values			10	2	2	5	5
Date	**Field ID**	**Lab Report Number**					
23 March 2021	S1	EM2105106	0.019	<0.001	0.018	<0.005	0.213
22 June 2021	S1	EM2111910	-	-	-	-	-
28 September 2021	S1	EM2119193	0.002	<0.001	<0.001	<0.005	<0.005
06 December 2021	S1	EM2124670	-	-	-	-	-
22 March 2021	S2	EM2104983	0.003	<0.001	<0.001	<0.005	<0.005
22 June 2021	S2	EM2111910	-	-	-	-	-
29 September 2021	S2	EM2119454	0.004	<0.001	<0.001	<0.005	<0.005
06 December 2021	S2	EM2124670	-	-	-	-	-
22 June 2021	S3	EM2111910	-	-	-	-	-
29 September 2021	S3	EM2119454	0.316	0.009	0.007	0.014	0.009
06 December 2021	S3	EM2124670	-	-	-	-	-
23 March 2021	S4	EM2105106	0.006	<0.001	<0.001	<0.005	<0.005
22 June 2021	S4	EM2111910	-	-	-	-	-
28 September 2021	S4	EM2119193	0.002	<0.001	<0.001	<0.005	<0.005
06 December 2021	S4	EM2124670	-	-	-	-	-
22 March 2021	S6	EM2104983	0.004	<0.001	<0.001	<0.005	<0.005
28 September 2021	S6	EM2119193	0.002	<0.001	<0.001	<0.005	<0.005
06 December 2021	S6	EM2124670	-	-	-	-	-
22 June 2021	S7	EM2111910	-	-	-	-	-
29 September 2021	S7	EM2119454	0.16	0.025	0.018	0.083	0.027
27 September 2021	S9	EM2119193	0.004	<0.001	<0.001	<0.005	<0.005
06 December 2021	S9	EM2124670	-	-	-	-	-

Table 4 - Historical Surface Water

				Inorganics			Acidity & Alkalinity										
Table 4: Historical Surface Water		Filtered Total Phosphorus as P (filtered)	Phosphorus total (P2O5) (filtered)	pH (Lab)	Electrical conductivity (lab)	Total Suspended Solids	Alkalinity (Carbonate as CaCO3)	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide as CaCO3)	Alkalinity (total as CaCO3)	Calcium (filtered)	Magnesium (filtered)	Potassium (filtered)	Sodium (filtered)	Chloride	Sulfate (filtered)	Sulfate as S (filtered)
		mg/L	µg/L	pH units	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL		0.01	10	0.01	1	5	1	1	1	1	1	1	1	1	1	1	1
ANZECC 2000 - Stock Watering											1,000					1,000	333
ANZG (2018) - FW - 95% (updated 26 July 2021)																	
ADWG 2011 Health (v3.6 updated 2021)																500	
ANZECC 2000 Irrigation - Long-term Trigger Values				6-9	2,900										350		
ANZECC 2000 Irrigation - Short-term Trigger Values																	
Date	**Field ID**	**Lab Report Number**															
1/08/2016	S1	EM1609083	<0.01	<10	7.83	299	18	-	-	-	-	-	-	-	-	-	-
23/11/2016		EM1614219	<0.01	-	8.10	440	<5	-	-	-	-	-	-	-	-	-	-
28/02/2017		EM1702250	-	-	-	-	<5	<1	181	<1	181	67	5	<1	13	23	27	27
14/06/2017		EM1707805	-	-	8.11	506	<5	<1	185	<1	185	69	5	<1	14	22	35	-
11/09/2017		EM1712490	-	-	-	-	<5	<1	182	<1	182	71	6	1	14	30	33	-
20/03/2018		EM1804934	-	-	-	-	10	16	179	<1	194	72	6	2	15	24	56	-
25/06/2018		EM1810261	-	-	-	-	<5	<1	188	<1	188	68	6	1	14	23	41	-
19/09/2018		EM1815239	-	-	-	-	<5	<1	88	<1	88	40	4	2	17	27	21	-
12/12/2018		EM1820185	-	-	-	-	<5	<1	162	<1	162	63	6	1	15	22	34	-
20/03/2019		EM1904168	-	-	8.20	447	<5	<1	164	<1	164	69	6	1	15	21	31	-
26/06/2019		EM1910172	-	-	-	-	<5	<1	196	<1	196	81	7	<1	14	21	36	-
11/09/2019		EM1915222	-	-	7.66	399	<5	<1	145	<1	145	51	5	1	15	26	26	-
24/03/2020		EM2005146	-	-	8.13	523	16	<1	159	<1	159	82	6	2	15	27	39	-
16/06/2020		EM2010246	-	-	-	-	18	<1	93	<1	93	36	5	2	14	25	30	-
29/09/2020		EM2017090	-	-	8.07	434	53	<1	146	<1	146	62	6	2	15	24	29	-
7/12/2020		EM2021896	-	-	7.92	465	14	<1	170	<1	170	59	5	1	14	26	33	-
23/03/2021		EM2105106	-	-	7.89	437	<5	<1	188	<1	188	79	6	1	14	28	32	-
22/06/2021		EM2111910	-	-	8.44	502	<5	14	189	<1	203	76	6	1	16	28	33	-
28/09/2021		EM2119193	-	-	8.22	505	<5	<1	176	<1	176	65	6	2	14	25	36	-
6/12/2021		EM2124670	-	-	7.56	526	<5	<1	209	<1	209	63	6	1	15	31	32	-
1/08/2016	S2	EM1609083	<0.01	<10	7.81	308	7	-	-	-	-	-	-	-	-	-	-	-
23/11/2016		EM1614219	<0.01	-	8.09	455	<5	-	-	-	-	-	-	-	-	-	-	-
28/02/2017		EM1702250	-	-	-	-	8	<1	197	<1	197	70	5	<1	13	23	28	28
14/06/2017		EM1707805	-	-	7.98	522	<5	<1	196	<1	196	69	5	<1	13	23	35	-
11/09/2017		EM1712490	-	-	-	-	<5	<1	185	<1	185	74	6	1	13	22	26	-
20/03/2018		EM1804934	-	-	-	-	8	<1	198	<1	198	78	6	1	13	21	38	-
25/06/2018		EM1810261	-	-	-	-	<5	<1	196	<1	196	72	6	<1	13	22	38	-
18/09/2018		EM1815239	-	-	-	-	<5	<1	153	<1	153	68	5	2	15	25	31	-
12/12/2018		EM1820185	-	-	-	-	<5	<1	179	<1	179	70	6	<1	15	22	32	-
19/03/2019		EM1904168	-	-	8.25	476	<5	<1	178	<1	178	73	6	1	14	23	32	-
26/06/2019		EM1910172	-	-	-	-	<5	<1	195	<1	195	86	7	1	15	22	36	-
11/09/2019		EM1915222	-	-	7.76	425	<5	<1	154	<1	154	56	5	1	15	26	26	-
17/12/2019		EM1921873	-	-	7.29	398	<5	<1	128	<1	128	43	4	<1	15	25	20	-
24/03/2020		EM2005146	-	-	8.19	516	<5	<1	166	<1	166	85	6	1	15	30	39	-
16/06/2020		EM2010246	-	-	-	-	12	<1	119	<1	119	49	5	2	14	24	34	-
30/09/2020		EM2017163	-	-	8.09	475	<5	<1	171	<1	171	66	5	1	14	28	35	-
7/12/2020		EM2021896	-	-	7.95	474	19	<1	182	<1	182	62	5	1	13	26	32	-
22/03/2021		EM2104983	-	-	7.92	446	<5	<1	187	<1	187	67	5	<1	14	23	30	-
22/06/2021		EM2111910	-	-	8.42	487	8	13	186	<1	199	76	6	1	14	27	31	-
29/09/2021		EM2119454	-	-	7.79	494	-	<1	184	<1	184	81	6	1	14	12	34	-

Table 4 - Historical Surface Water

					Inorganics			Acidity & Alkalinity											
Table 4: Historical Surface Water			Filtered Total Phosphorus as P (filtered)	Phosphorus total (P2O5) (filtered)	pH (Lab)	Electrical conductivity (lab)	Total Suspended Solids	Alkalinity (Carbonate as CaCO3)	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide as CaCO3)	Alkalinity (total as CaCO3)	Calcium (filtered)	Magnesium (filtered)	Potassium (filtered)	Sodium (filtered)	Chloride	Sulfate (filtered)	Sulfate as S (filtered)
			mg/L	µg/L	pH units	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.01	10	0.01	1	5	1	1	1	1	1	1	1	1	1	1	1
ANZECC 2000 - Stock Watering												1,000					1,000	333
ANZG (2018) - FW - 95% (updated 26 July 2021)																		
ADWG 2011 Health (v3.6 updated 2021)																	500	
ANZECC 2000 Irrigation - Long-term Trigger Values					6-9	2,900										350		
ANZECC 2000 Irrigation - Short-term Trigger Values																		
Date	**Field ID**	**Lab Report Number**																
6/12/2021		EM2124670	-	-	7.61	535	8	<1	204	<1	204	65	6	1	16	33	32	-
1/08/2016	S3	EM1609083	0.1	100	7.53	375	116	-	-	-	-	-	-	-	-	-	-	-
23/11/2016		EM1614219	0.03	-	7.88	660	<5	-	-	-	-	-	-	-	-	-	-	-
14/06/2017		EM1707805	-	-	7.25	678	<5	<1	189	<1	189	60	6	18	37	65	45	-
11/09/2017		EM1712490	-	-	-	-	46	<1	245	<1	245	87	8	12	33	32	24	-
25/06/2018		EM1810261	-	-	-	-	<5	<1	201	<1	201	68	7	24	51	93	83	-
18/09/2018		EM1815239	-	-	-	-	9	<1	198	<1	198	75	7	18	34	61	20	-
26/06/2019		EM1910172	-	-	-	-	<5	<1	195	<1	195	105	11	23	66	135	100	-
11/09/2019		EM1915222	-	-	7.43	602	16	<1	185	<1	185	46	6	27	41	68	25	-
16/06/2020		EM2010246	-	-	-	-	55	<1	162	<1	162	32	9	39	65	102	49	-
29/09/2020		EM2017090	-	-	7.55	998	131	<1	296	<1	296	70	15	49	72	107	26	-
7/12/2020		EM2021896	-	-	7.62	899	35	<1	260	<1	260	67	12	38	62	111	42	-
22/06/2021		EM2111910	-	-	8.27	1,150	45	<1	287	<1	287	70	17	59	79	116	85	-
29/09/2021		EM2119454	-	-	7.96	1,000	54	<1	280	<1	280	66	14	45	76	128	28	-
6/12/2021		EM2124670	-	-	7.28	809	2,520	<1	296	<1	296	70	12	28	39	69	15	-
1/08/2016	S4	EM1609083	<0.01	<10	7.8	299	6	-	-	-	-	-	-	-	-	-	-	-
23/11/2016		EM1614219	<0.01	-	8.03	440	<5	-	-	-	-	-	-	-	-	-	-	-
27/02/2017		EM1702198	-	-	-	-	<5	<1	197	<1	197	73	5	<1	13	20	29	29
14/06/2017		EM1707805	-	-	7.78	526	<5	<1	193	<1	193	72	5	<1	13	22	36	-
11/09/2017		EM1712490	-	-	-	-	<5	<1	196	<1	196	79	6	1	14	22	36	-
13/12/2017		EM1717302	-	-	-	-	<5	<1	68	<1	68	21	3	<1	14	35	7	-
20/03/2018		EM1804934	-	-	-	-	7	<1	193	<1	193	79	6	1	13	20	38	-
25/06/2018		EM1810261	-	-	-	-	<5	<1	202	<1	202	72	6	1	13	22	42	-
18/09/2018		EM1815239	-	-	-	-	8	<1	159	<1	159	73	5	2	15	21	27	-
12/12/2018		EM1820185	-	-	-	-	<5	<1	182	<1	182	69	6	<1	15	20	32	-
18/03/2019		EM1904168	-	-	7.24	174	<5	<1	37	<1	37	11	3	<1	13	22	3	-
26/06/2019		EM1910172	-	-	-	-	<5	<1	197	<1	197	82	7	<1	14	21	37	-
10/09/2019		EM1915222	-	-	7.76	499	<5	<1	193	<1	193	76	5	1	14	29	35	-
17/12/2019		EM1921873	-	-	7.15	255	<5	<1	68	<1	68	19	3	<1	14	28	8	-
23/03/2020		EM2005146	-	-	8.11	528	<5	<1	162	<1	162	84	6	2	15	24	42	-
16/06/2020		EM2010246	-	-	-	-	9	<1	126	<1	126	52	5	2	14	24	35	-
28/09/2020		EM2017090	-	-	7.76	431	8	<1	149	<1	149	65	6	1	13	22	34	-
7/12/2020		EM2021896	-	-	7.89	449	6	<1	181	<1	181	61	5	1	13	24	32	-
23/03/2021		EM2105106	-	-	7.91	444	<5	<1	187	<1	187	78	6	1	14	26	30	-
22/06/2021		EM2111910	-	-	8.27	405	6	<1	150	<1	150	56	5	1	15	27	23	-
28/09/2021		EM2119193	-	-	8.27	609	<5	<1	190	<1	190	71	5	2	14	27	38	-
6/12/2021		EM2124670	-	-	7.46	515	<5	<1	197	<1	197	63	6	1	14	32	30	-
1/08/2016	S6	EM1609083	<0.01	<10	7.84	315	8	-	-	-	-	-	-	-	-	-	-	-
23/11/2016		EM1614219	<0.01	-	8.08	460	<5	-	-	-	-	-	-	-	-	-	-	-
27/02/2017		EM1702198	-	-	-	-	<5	<1	204	<1	204	75	6	<1	13	21	30	30
14/06/2017		EM1707805	-	-	8.14	522	<5	<1	198	<1	198	77	6	<1	13	22	36	-
11/09/2017		EM1712490	-	-	-	-	<5	<1	199	<1	199	80	6	1	13	23	35	-

Table 4 - Historical Surface Water

				Inorganics			Acidity & Alkalinity											
Table 4: Historical Surface Water			Filtered Total Phosphorus as P (filtered)	Phosphorus total (P2O5) (filtered)	pH (Lab)	Electrical conductivity (lab)	Total Suspended Solids	Alkalinity (Carbonate as CaCO3)	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide as CaCO3)	Alkalinity (total as CaCO3)	Calcium (filtered)	Magnesium (filtered)	Potassium (filtered)	Sodium (filtered)	Chloride	Sulfate (filtered)	Sulfate as S (filtered)
			mg/L	µg/L	pH units	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.01	10	0.01	1	5	1	1	1	1	1	1	1	1	1	1	1
ANZECC 2000 - Stock Watering												1,000					1,000	333
ANZG (2018) - FW - 95% (updated 26 July 2021)																		
ADWG 2011 Health (v3.6 updated 2021)																	500	
ANZECC 2000 Irrigation - Long-term Trigger Values					6-9	2,900										350		
ANZECC 2000 Irrigation - Short-term Trigger Values																		
Date	**Field ID**	**Lab Report Number**																
13/12/2017		EM1717302	-	-	-	-	<5	<1	203	<1	203	75	6	1	13	31	29	-
20/03/2018		EM1804934	-	-	-	-	8	<1	196	<1	196	81	6	1	12	21	41	-
25/06/2018		EM1810261	-	-	-	-	<5	<1	204	<1	204	75	6	<1	13	22	42	-
18/09/2018		EM1815239	-	-	-	-	10	<1	177	<1	177	76	5	2	15	22	34	-
12/12/2018		EM1820185	-	-	-	-	<5	<1	191	<1	191	74	6	<1	14	22	30	-
26/06/2019		EM1910172	-	-	-	-	<5	<1	206	<1	206	90	7	<1	14	21	39	-
24/03/2020		EM2005146	-	-	8.14	524	<5	<1	172	<1	172	90	6	1	14	25	40	-
16/06/2020		EM2010246	-	-	-	-	38	<1	132	<1	132	50	6	5	19	29	38	-
28/09/2020		EM2017090	-	-	8.14	466	<5	<1	163	<1	163	70	6	2	14	24	33	-
7/12/2020		EM2021896	-	-	8.06	443	15	<1	198	<1	198	65	5	1	13	24	34	-
22/03/2021		EM2104983	-	-	7.89	484	<5	<1	196	<1	196	70	6	<1	14	23	32	-
28/09/2021		EM2119193	-	-	8.20	525	<5	<1	186	<1	186	74	6	2	14	23	38	-
6/12/2021		EM2124670	-	-	7.65	541	9	<1	209	<1	209	66	6	1	15	34	34	-
2/08/2016	S7	EM1609083	0.18	180	7.42	351	45	-	-	-	-	-	-	-	-	-	-	-
23/11/2016		EM1614219	2.19	-	7.05	270	737	-	-	-	-	-	-	-	-	-	-	-
27/02/2017		EM1702198	-	-	-	-	35	<1	957	<1	957	43	30	382	406	638	<10	<10
14/06/2017		EM1707805	-	-	7.39	2,020	266	<1	391	<1	391	12	7	118	185	398	<1	-
12/09/2017		EM1712490	-	-	-	-	134	<1	111	<1	111	12	6	30	44	64	14	-
25/06/2018		EM1810261	-	-	-	-	120	<1	171	<1	171	24	7	63	80	157	48	-
19/09/2018		EM1815239	-	-	-	-	430	<1	158	<1	158	16	7	62	84	139	25	-
10/09/2019		EM1915222	-	-	6.96	1,220	529	<1	175	<1	175	24	8	85	109	251	58	-
16/06/2020		EM2010246	-	-	-	-	215	<1	258	<1	258	44	22	110	141	251	129	-
30/09/2020		EM2017163	-	-	4.78	2,540	201	<1	76	<1	76	88	40	222	245	411	152	-
22/06/2021		EM2111910	-	-	8.35	2,320	315	8	558	<1	566	88	47	197	181	273	212	-
29/09/2021		EM2119454	-	-	8.05	1,460	132	<1	385	<1	385	40	26	133	124	182	64	-
2/08/2016		EM1609083	<0.01	<10	7.76	286	30	-	-	-	-	-	-	-	-	-	-	-
23/11/2016		EM1614219	<0.01	-	8.03	430	267	-	-	-	-	-	-	-	-	-	-	-
27/02/2017		EM1702198	-	-	-	-	91	<1	208	<1	208	73	6	<1	13	22	30	30
14/06/2017		EM1707805	-	-	8.11	536	<5	<1	200	<1	200	75	5	<1	13	22	36	-
12/09/2017		EM1712490	-	-	-	-	9	<1	194	<1	194	77	6	1	13	42	33	-
13/12/2017		EM1717302	-	-	-	-	<5	<1	188	<1	188	72	6	<1	12	32	32	-
21/03/2018		EM1805110	-	-	-	-	<5	<1	183	<1	183	82	6	1	13	20	38	-
25/06/2018		EM1810261	-	-	-	-	<5	<1	201	<1	201	77	6	1	14	23	43	-
18/09/2018		EM1815239	-	-	-	-	6	<1	172	<1	172	77	5	2	14	21	34	-
12/12/2018		EM1820185	-	-	-	-	<5	<1	180	<1	180	72	6	<1	14	21	32	-
18/03/2019		EM1904168	-	-	8.26	492	<5	<1	183	<1	183	76	6	1	14	20	33	-
26/06/2019		EM1910172	-	-	-	-	<5	<1	206	<1	206	93	7	<1	14	21	38	-
23/03/2020		EM2005146	-	-	8.07	509	<5	<1	164	<1	164	87	6	2	15	26	41	-
16/06/2020		EM2010246	-	-	-	-	11	<1	131	<1	131	54	5	2	13	22	37	-
7/12/2020		EM2021896	-	-	8.09	420	24	<1	178	<1	178	62	5	1	13	24	35	-
27/09/2021		EM2119193	-	-	8.27	586	<5	<1	171	<1	171	73	5	1	13	23	37	-
6/12/2021	S9	EM2124670	-	-	7.90	514	<5	<1	210	<1	210	65	6	1	15	32	32	-

Table 4 - Historical Surface Water

					Nutrients												
Table 4: Historical Surface Water			Cations Total	Anions Total	Ionic Balance	Ammonium (as N)	Ammonia as N	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total Oxidised) (as N)	Nitrogen (Total)	Kjeldahl Nitrogen Total	Reactive Phosphorus as P	Phosphorus filterable reactive (P)	Phosphorus (Total)	Phosphorus (Total) (filtered)	BOD	Aluminium
			meq/L	meq/L	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.1	0.1	0.01	0.01	0.01	0.01	2	0.01
ANZECC 2000 - Stock Watering								90	9.1									5
ANZG (2018) - FW - 95% (updated 26 July 2021)							0.9	2.4										0.055
ADWG 2011 Health (v3.6 updated 2021)								11.29	0.91									
ANZECC 2000 Irrigation - Long-term Trigger Values											5				0.05	0.05		5
ANZECC 2000 Irrigation - Short-term Trigger Values											25				0.8	0.8		20
Date	**Field ID**	**Lab Report Number**																
1/08/2016	S1	EM1609083	-	-	-	-	0.77	1.31	0.01	1.32	2.1	0.8	-	-	0.03	-	<2	-
23/11/2016		EM1614219	-	-	-	-	0.02	0.83	<0.01	0.83	1.2	0.4	-	-	<0.01	-	10	-
28/02/2017		EM1702250	4.32	4.83	5.54	-	0.07	0.57	<0.01	0.57	0.9	0.3	-	-	<0.01	<0.01	<2	-
14/06/2017		EM1707805	4.46	5.04	6.12	-	0.02	1.01	<0.01	1.01	1.0	<0.1	<0.01	-	<0.01	-	3	-
11/09/2017		EM1712490	4.67	5.17	5.06	-	0.02	0.92	0.01	0.93	0.9	<0.1	<0.01	-	<0.01	<0.01	<2	-
20/03/2018		EM1804934	4.79	5.72	8.84	-	0.09	0.29	<0.01	0.29	0.3	<0.1	0.02	0.02	0.08	-	3	-
25/06/2018		EM1810261	4.52	5.26	7.54	-	0.03	1.20	<0.01	1.20	1.7	0.5	0.01	0.01	0.01	-	7	-
19/09/2018		EM1815239	3.12	2.96	2.61	-	0.06	0.39	<0.01	0.39	0.5	0.1	<0.01	-	0.04	0.02	4	0.62
12/12/2018		EM1820185	4.32	4.56	2.81	-	0.04	0.52	<0.01	0.52	0.8	0.3	<0.01	-	0.11	0.03	6	-
20/03/2019		EM1904168	4.61	4.51	1.10	-	0.04	0.44	<0.01	0.44	0.4	<0.1	-	0.01	0.05	-	3	-
26/06/2019		EM1910172	5.23	5.26	0.30	-	<0.01	0.99	0.01	1.00	1.0	<0.1	0.08	-	0.09	-	2	-
11/09/2019		EM1915222	3.65	4.17	6.63	-	0.03	0.66	<0.01	0.66	0.7	<0.1	-	<0.01	0.02	-	<2	-
24/03/2020		EM2005146	5.29	4.75	5.37	-	0.04	0.69	<0.01	0.69	1.2	0.5	-	<0.01	0.02	-	<2	-
16/06/2020		EM2010246	2.87	3.19	5.28	-	0.12	1.00	<0.01	1.00	1.5	0.5	0.01	0.01	0.06	-	2	-
29/09/2020		EM2017090	4.29	4.20	1.10	-	0.06	1.27	<0.01	1.27	1.7	0.4	-	0.06	0.08	-	<8	-
7/12/2020		EM2021896	3.99	4.82	9.39	-	<0.01	0.65	<0.01	0.65	0.6	<0.1	-	<0.01	<0.01	-	<10	-
23/03/2021		EM2105106	5.07	5.21	1.38	-	0.08	0.56	<0.01	0.56	0.7	0.1	-	<0.01	0.03	-	<2	-
22/06/2021		EM2111910	5.01	5.53	4.98	-	<0.01	1.00	<0.01	1.00	1.2	0.2	-	0.02	0.01	-	<2	-
28/09/2021		EM2119193	4.40	4.97	6.12	0.09	0.09	1.11	<0.01	1.11	1.4	0.3	-	<0.01	<0.01	-	<10	-
6/12/2021		EM2124670	4.32	5.72	14.0	-	0.10	0.68	<0.01	0.68	0.9	0.2	-	<0.01	0.02	-	<2	-
1/08/2016	S2	EM1609083	-	-	-	-	0.03	1.14	<0.01	1.14	1.1	<0.1	-	-	0.02	-	4	-
23/11/2016		EM1614219	-	-	-	-	0.02	0.88	<0.01	0.88	1.0	0.1	-	-	<0.01	-	8	-
28/02/2017		EM1702250	4.47	5.17	7.24	-	0.17	0.72	<0.01	0.72	1.1	0.4	-	-	0.01	<0.01	<2	-
14/06/2017		EM1707805	4.42	5.29	8.99	-	0.03	1.06	<0.01	1.06	1.1	<0.1	<0.01	-	<0.01	-	2	-
11/09/2017		EM1712490	4.78	4.86	0.84	-	0.01	1.13	0.01	1.14	1.1	<0.1	<0.01	-	0.01	<0.01	3	-
20/03/2018		EM1804934	4.98	5.34	3.51	-	0.04	1.03	<0.01	1.03	1.2	0.2	<0.01	<0.01	0.03	-	4	-
25/06/2018		EM1810261	4.65	5.33	6.77	-	0.03	1.20	<0.01	1.20	1.4	0.2	0.01	0.01	0.03	-	7	-
18/09/2018		EM1815239	4.51	4.41	1.13	-	0.08	0.86	<0.01	0.86	1.1	0.2	<0.01	-	0.08	0.02	4	0.16
12/12/2018		EM1820185	4.64	4.86	2.36	-	0.06	0.67	0.01	0.68	0.7	<0.1	<0.01	-	0.09	<0.01	3	-
19/03/2019		EM1904168	4.77	4.87	1.04	-	0.03	0.55	<0.01	0.55	0.8	0.3	-	<0.01	0.22	-	4	-
26/06/2019		EM1910172	5.54	5.27	2.58	-	0.02	1.11	<0.01	1.11	1.1	<0.1	0.02	-	0.04	-	3	-
11/09/2019		EM1915222	3.89	4.35	5.55	-	0.02	0.66	<0.01	0.66	0.8	0.1	-	0.01	0.04	-	<2	-
17/12/2019		EM1921873	3.13	3.68	8.10	-	0.03	0.28	<0.01	0.28	0.3	<0.1	-	0.01	<0.01	-	<2	-
24/03/2020		EM2005146	5.41	4.97	4.22	-	0.06	0.81	<0.01	0.81	0.9	0.1	-	<0.01	0.10	-	<2	-
16/06/2020		EM2010246	3.52	3.76	3.38	-	0.03	1.10	<0.01	1.10	1.5	0.4	<0.01	<0.01	<0.01	-	<2	-
30/09/2020		EM2017163	4.34	4.94	6.42	-	0.15	1.25	<0.01	1.25	1.4	0.2	-	<0.01	<0.01	-	<10	-
7/12/2020		EM2021896	4.10	5.04	10.3	-	<0.01	0.77	<0.01	0.77	0.8	<0.1	-	<0.01	0.01	-	<10	-
22/03/2021		EM2104983	4.36	5.01	6.89	-	0.02	0.65	<0.01	0.65	0.6	<0.1	-	<0.01	<0.01	-	<2	-
22/06/2021		EM2111910	4.92	5.38	4.49	-	<0.01	0.95	<0.01	0.95	1.2	0.2	-	<0.01	0.01	-	<2	-
29/09/2021		EM2119454	5.17	4.72	4.52	-	<0.01	1.17	0.01	1.18	1.7	0.5	-	<0.01	<0.01	-	<10	-

Table 4 - Historical Surface Water

						Nutrients												
Table 4: Historical Surface Water			Cations Total	Anions Total	Ionic Balance	Ammonium (as N)	Ammonia as N	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total Oxidised) (as N)	Nitrogen (Total)	Kjeldahl Nitrogen Total	Reactive Phosphorus as P	Phosphorus filterable reactive (P)	Phosphorus (Total)	Phosphorus (Total) (filtered)	BOD	Aluminium
			meq/L	meq/L	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.1	0.1	0.01	0.01	0.01	0.01	2	0.01
ANZECC 2000 - Stock Watering								90	9.1									5
ANZG (2018) - FW - 95% (updated 26 July 2021)							0.9	2.4										0.055
ADWG 2011 Health (v3.6 updated 2021)								11.29	0.91									
ANZECC 2000 Irrigation - Long-term Trigger Values											5				0.05	0.05		5
ANZECC 2000 Irrigation - Short-term Trigger Values											25				0.8	0.8		20
Date	**Field ID**	**Lab Report Number**																
6/12/2021		EM2124670	4.46	5.67	12.0	-	0.09	0.69	<0.01	0.69	1.0	0.3	-	<0.01	0.03	-	<2	-
1/08/2016	S3	EM1609083	-	-	-	-	4.04	1.24	0.03	1.27	5.7	4.4	-	-	0.35	-	2	-
23/11/2016		EM1614219	-	-	-	-	0.50	0.32	0.06	0.38	1.0	0.6	-	-	0.05	-	14	-
14/06/2017		EM1707805	5.56	6.55	8.17	-	0.04	0.16	<0.01	0.16	0.8	0.6	0.05	-	0.09	-	2	-
11/09/2017		EM1712490	6.74	6.30	3.41	-	0.95	0.17	0.04	0.21	1.5	1.3	0.01	-	0.24	0.22	10	-
25/06/2018		EM1810261	6.97	8.37	9.23	-	2.48	0.35	0.03	0.38	4.2	3.8	0.07	0.07	0.09	-	5	-
18/09/2018		EM1815239	6.26	6.09	1.33	-	0.30	0.45	0.01	0.46	2.3	1.8	0.05	-	0.23	0.22	8	0.58
26/06/2019		EM1910172	9.60	9.79	0.94	-	0.16	0.67	0.03	0.70	1.9	1.2	0.08	-	0.12	-	4	-
11/09/2019		EM1915222	5.48	6.14	5.59	-	2.14	0.47	0.03	0.50	5.3	4.8	-	0.19	0.46	-	<2	-
16/06/2020		EM2010246	6.39	7.13	5.46	-	3.30	5.39	0.16	5.55	17.6	12.1	1.54	1.54	2.71	-	12	-
29/09/2020		EM2017090	9.11	9.47	1.94	-	6.36	0.01	<0.01	0.01	18.6	18.6	-	8.42	10.5	-	138	-
7/12/2020		EM2021896	8.00	9.20	6.98	-	0.12	0.50	0.12	0.62	4.9	4.3	-	0.28	0.88	-	<10	-
22/06/2021		EM2111910	9.84	10.8	4.55	-	5.94	2.90	0.20	3.10	13.7	10.6	-	0.61	0.94	-	2	-
29/09/2021		EM2119454	8.90	9.79	4.74	-	11.2	1.14	0.05	1.19	14.0	12.8	-	0.48	0.61	-	22	-
6/12/2021		EM2124670	6.89	8.17	8.49	-	1.16	0.15	0.06	0.21	20.2	20.0	-	0.04	16.2	-	29	-
1/08/2016	S4	EM1609083	-	-	-	-	0.04	1.27	<0.01	1.27	1.3	<0.1	-	-	<0.01	-	<2	-
23/11/2016		EM1614219	-	-	-	-	0.03	0.88	<0.01	0.88	1.0	0.1	-	-	<0.01	-	6	-
27/02/2017		EM1702198	4.62	5.10	4.98	-	0.02	0.75	<0.01	0.75	1.0	0.2	-	-	<0.01	<0.01	6	-
14/06/2017		EM1707805	4.57	5.23	6.70	-	0.02	1.11	<0.01	1.11	1.1	<0.1	<0.01	-	<0.01	-	7	-
11/09/2017		EM1712490	5.07	5.29	2.08	-	0.01	1.06	0.01	1.07	1.1	<0.1	<0.01	-	<0.01	<0.01	5	-
13/12/2017		EM1717302	1.90	2.49	-	-	0.09	0.17	<0.01	0.17	0.2	<0.1	<0.01	<0.01	<0.01	-	4	-
20/03/2018		EM1804934	5.03	5.21	1.80	-	0.08	1.02	<0.01	1.02	1.3	0.3	<0.01	<0.01	0.02	-	2	-
25/06/2018		EM1810261	4.68	5.53	8.36	-	0.12	1.29	<0.01	1.29	1.6	0.3	<0.01	<0.01	<0.01	-	5	-
18/09/2018		EM1815239	4.76	4.33	4.69	-	0.09	0.94	<0.01	0.94	0.9	<0.1	<0.01	-	0.06	0.02	4	0.15
12/12/2018		EM1820185	4.59	4.87	2.93	-	0.05	0.76	<0.01	0.76	0.8	<0.1	0.03	-	<0.01	<0.01	2	-
18/03/2019		EM1904168	1.36	1.42	2.19	-	0.03	0.06	<0.01	0.06	<0.1	<0.1	-	0.01	0.02	-	3	-
26/06/2019		EM1910172	5.28	5.30	0.21	-	0.02	1.11	<0.01	1.11	1.1	<0.1	0.01	-	0.06	-	<2	-
10/09/2019		EM1915222	4.84	5.40	5.51	-	0.02	1.00	<0.01	1.00	1.1	0.1	-	0.01	0.01	-	<2	-
17/12/2019		EM1921873	1.80	2.32	-	-	0.11	0.12	<0.01	0.12	0.2	0.1	-	0.01	<0.01	-	<2	-
23/03/2020		EM2005146	5.39	4.79	5.90	-	0.22	0.77	<0.01	0.77	1.0	0.2	-	<0.01	0.03	-	<2	-
16/06/2020		EM2010246	3.67	3.92	3.38	-	0.04	1.22	<0.01	1.22	1.7	0.5	<0.01	<0.01	0.01	-	<2	-
28/09/2020		EM2017090	4.33	4.30	0.26	-	0.07	1.39	<0.01	1.39	1.8	0.4	-	0.02	0.02	-	<8	-
7/12/2020		EM2021896	4.05	4.96	10.1	-	<0.01	0.76	<0.01	0.76	0.8	<0.1	-	0.01	<0.01	-	<10	-
23/03/2021		EM2105106	5.02	5.09	0.73	-	0.03	0.66	<0.01	0.66	0.9	0.2	-	<0.01	0.04	-	<2	-
22/06/2021		EM2111910	3.88	4.24	4.35	-	0.01	0.67	0.01	0.68	0.8	0.1	-	0.02	<0.01	-	<2	-
28/09/2021		EM2119193	4.61	5.35	7.37	1.32	1.34	1.19	<0.01	1.19	1.6	0.4	-	<0.01	<0.01	-	<10	-
6/12/2021		EM2124670	4.27	5.46	12.2	-	0.04	0.68	<0.01	0.68	0.8	0.1	-	0.02	0.02	-	<2	-
1/08/2016	S6	EM1609083	-	-	-	-	0.06	1.21	<0.01	1.21	1.2	<0.1	-	-	<0.01	-	<2	-
23/11/2016		EM1614219	-	-	-	-	0.01	0.91	<0.01	0.91	1.1	0.2	-	-	<0.01	-	<2	-
27/02/2017		EM1702198	4.80	5.29	4.86	-	0.06	0.80	<0.01	0.80	1.1	0.3	-	-	<0.01	<0.01	6	-
14/06/2017		EM1707805	4.90	5.33	4.15	-	0.02	1.13	<0.01	1.13	1.4	0.3	<0.01	-	<0.01	-	6	-
11/09/2017		EM1712490	5.08	5.35	2.65	-	0.02	1.13	0.01	1.14	1.3	0.2	<0.01	-	<0.01	<0.01	2	-

Table 4 - Historical Surface Water

						Nutrients											
Table 4: Historical Surface Water			Cations Total	Anions Total	Ionic Balance	Ammonium (as N)	Ammonia as N	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total Oxidised) (as N)	Nitrogen (Total)	Kjeldahl Nitrogen Total	Reactive Phosphorus as P	Phosphorus filterable reactive (P)	Phosphorus (Total)	Phosphorus (Total) (filtered)	BOD	Aluminium
			meq/L	meq/L	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.1	0.1	0.01	0.01	0.01	0.01	2	0.01
ANZECC 2000 - Stock Watering								90	9.1									5
ANZG (2018) - FW - 95% (updated 26 July 2021)							0.9	2.4										0.055
ADWG 2011 Health (v3.6 updated 2021)								11.29	0.91									
ANZECC 2000 Irrigation - Long-term Trigger Values											5				0.05	0.05		5
ANZECC 2000 Irrigation - Short-term Trigger Values											25				0.8	0.8		20
Date	**Field ID**	**Lab Report Number**																
13/12/2017		EM1717302	4.83	5.53	6.82	-	0.08	0.72	0.01	0.73	1.2	0.5	<0.01	<0.01	0.25	-	4	-
20/03/2018		EM1804934	5.08	5.36	2.67	-	0.06	1.07	<0.01	1.07	1.1	<0.1	<0.01	<0.01	0.03	-	5	-
25/06/2018		EM1810261	4.80	5.57	7.42	-	0.03	1.36	<0.01	1.36	1.7	0.3	<0.01	<0.01	0.03	-	6	-
18/09/2018		EM1815239	4.91	4.86	0.44	-	0.11	0.95	<0.01	0.95	1.2	0.2	<0.01	-	0.05	0.02	4	0.28
12/12/2018		EM1820185	4.80	5.06	2.70	-	0.07	0.75	<0.01	0.75	0.8	<0.1	<0.01	-	0.02	0.01	2	-
26/06/2019		EM1910172	5.68	5.52	1.39	-	0.03	1.25	<0.01	1.25	1.2	<0.1	<0.01	-	0.04	-	<2	-
24/03/2020		EM2005146	5.62	4.97	6.09	-	0.02	0.85	<0.01	0.85	1.0	0.1	-	<0.01	<0.01	-	<2	-
16/06/2020		EM2010246	3.94	4.25	3.70	-	0.04	1.47	<0.01	1.47	2.2	0.7	0.02	0.02	0.06	-	5	-
28/09/2020		EM2017090	4.65	4.62	0.28	-	0.06	1.39	<0.01	1.39	1.6	0.2	-	0.01	0.01	-	<8	-
7/12/2020		EM2021896	4.25	5.34	11.4	-	<0.01	0.79	<0.01	0.79	0.8	<0.1	-	<0.01	<0.01	-	<10	-
22/03/2021		EM2104983	4.60	5.23	6.46	-	0.01	0.73	<0.01	0.73	0.7	<0.1	-	<0.01	<0.01	-	<2	-
28/09/2021		EM2119193	4.85	5.16	3.10	0.18	0.19	1.24	<0.01	1.24	1.5	0.3	-	<0.01	<0.01	-	<10	-
6/12/2021		EM2124670	4.46	5.84	13.4	-	0.07	0.71	<0.01	0.71	0.8	0.1	-	<0.01	0.02	-	<2	-
2/08/2016	S7	EM1609083	-	-	-	-	6.04	0.96	0.02	0.98	7	6	-	-	0.44	-	2	-
23/11/2016		EM1614219	-	-	-	-	3.85	0.01	0.02	0.03	7.5	7.5	-	-	2.77	-	11	-
27/02/2017		EM1702198	32.0	37.1	7.34	-	36.3	0.05	0.03	0.08	69.5	69.4	-	-	23.9	20.5	35	-
14/06/2017		EM1707805	12.2	19.0	21.7	-	11.6	<0.01	<0.01	<0.01	29.0	29.0	5.08	-	7.09	-	68	-
12/09/2017		EM1712490	3.77	4.31	6.69	-	5.63	0.13	0.01	0.14	7.6	7.5	0.80	-	2.49	1.47	15	-
25/06/2018		EM1810261	8.21	9.08	5.00	-	18.9	3.21	0.04	3.25	30.6	27.3	0.69	0.69	1.92	-	12	-
19/09/2018		EM1815239	6.61	7.60	6.93	-	4.90	0.73	0.08	0.81	12.6	11.8	2.76	-	3.68	3.64	19	6.79
10/09/2019		EM1915222	9.76	11.8	9.39	-	11.6	8.98	1.02	10.0	49.1	39.1	-	2.20	5.43	-	33	-
16/06/2020		EM2010246	13.0	14.9	7.06	-	16.0	14.9	0.31	15.2	52.8	37.6	5.98	5.98	9.15	-	30	-
30/09/2020		EM2017163	24.0	16.3	19.2	-	16.8	0.01	<0.01	0.01	76.3	76.3	-	40.5	49.5	-	1,160	-
22/06/2021		EM2111910	21.2	23.4	5.05	-	33.6	19.3	0.50	19.8	76.2	56.4	-	4.90	7.62	-	11	-
29/09/2021		EM2119454	12.9	14.2	4.53	-	14.2	3.64	0.09	3.73	39.5	35.8	-	3.86	6.77	-	19	-
2/08/2016		EM1609083	-	-	-	-	<0.01	1.29	<0.01	1.29	1.3	<0.1	-	-	<0.01	-	4	-
23/11/2016		EM1614219	-	-	-	-	0.01	0.86	<0.01	0.86	1.3	0.4	-	-	<0.01	-	<2	-
27/02/2017		EM1702198	4.70	5.40	6.92	-	0.05	0.78	<0.01	0.78	1.3	0.5	-	-	0.04	<0.01	4	-
14/06/2017		EM1707805	4.72	5.37	6.41	-	0.04	1.15	<0.01	1.15	1.6	0.5	0.02	-	<0.01	-	4	-
12/09/2017		EM1712490	4.93	5.75	7.69	-	0.02	1.01	0.01	1.02	1.0	<0.1	<0.01	-	<0.01	<0.01	7	-
13/12/2017		EM1717302	4.61	5.32	7.21	-	0.13	0.68	0.01	0.69	0.9	0.2	<0.01	<0.01	<0.01	-	3	-
21/03/2018		EM1805110	5.18	5.01	1.62	-	0.16	0.94	<0.01	0.94	1.0	0.1	<0.01	<0.01	0.68	-	<2	-
25/06/2018		EM1810261	4.97	5.56	5.60	-	0.07	1.36	<0.01	1.36	1.6	0.2	0.02	0.02	0.05	-	6	-
18/09/2018		EM1815239	4.91	4.74	1.84	-	0.27	0.96	<0.01	0.96	1.8	0.8	0.01	-	0.04	0.03	5	0.16
12/12/2018		EM1820185	4.70	4.86	1.67	-	0.04	0.70	<0.01	0.70	0.7	<0.1	<0.01	-	<0.01	<0.01	2	-
18/03/2019		EM1904168	4.92	4.91	0.13	-	0.04	0.61	<0.01	0.61	0.6	<0.1	-	<0.01	0.11	-	5	-
26/06/2019		EM1910172	5.82	5.50	2.88	-	0.03	1.17	0.01	1.18	1.2	<0.1	0.01	-	0.03	-	<2	-
23/03/2020		EM2005146	5.54	4.86	6.49	-	0.04	0.81	<0.01	0.81	1.0	0.2	-	<0.01	0.05	-	<2	-
16/06/2020		EM2010246	3.72	4.01	3.69	-	0.02	1.14	<0.01	1.14	1.3	0.2	<0.01	<0.01	0.01	-	<2	-
7/12/2020		EM2021896	4.10	4.96	9.56	-	<0.01	0.70	<0.01	0.70	0.7	<0.1	-	<0.01	<0.01	-	<10	-
27/09/2021		EM2119193	4.64	4.84	2.01	<0.01	<0.01	1.26	<0.01	1.26	1.5	0.2	-	<0.01	<0.01	-	<10	-
6/12/2021	S9	EM2124670	4.42	5.76	13.2	-	0.10	0.74	<0.01	0.74	0.8	0.1	-	<0.01	0.02	-	<2	-

Table 4 - Historical Surface Water

			Metals														
Table 4: Historical Surface Water			Aluminium (filtered) mg/L	Arsenic mg/L	Arsenic (filtered) mg/L	Cadmium mg/L	Cadmium (filtered) mg/L	Chromium (III+VI) mg/L	Chromium (III+VI) (filtered) mg/L	Copper mg/L	Copper (filtered) mg/L	Iron mg/L	Iron (filtered) mg/L	Lead mg/L	Lead (filtered) mg/L	Manganese mg/L	Manganese (filtered) mg/L	Mercury mg/L
EQL			0.01	0.001	0.001	0.0001	0.0001	0.001	0.001	0.001	0.001	0.05	0.05	0.001	0.001	0.001	0.001	0.0001
ANZECC 2000 - Stock Watering			5	0.5	0.5	0.01	0.01	1	1	1	1			0.1	0.1			0.002
ANZG (2018) - FW - 95% (updated 26 July 2021)			0.055	0.013	0.013	0.0002	0.0002	0.001	0.001	0.0014	0.0014			0.0034	0.0034	1.9	1.9	0.0006
ADWG 2011 Health (v3.6 updated 2021)				0.01	0.01	0.002	0.002			2	2			0.01	0.01	0.5	0.5	0.001
ANZECC 2000 Irrigation - Long-term Trigger Values			5	0.1	0.1	0.01	0.01	0.1	0.1	0.2	0.2	0.2	0.2	2	2	0.2	0.2	0.002
ANZECC 2000 Irrigation - Short-term Trigger Values			20	2	2	0.05	0.05	1	1	5	5	10	10	5	5	10	10	0.002
Date	**Field ID**	**Lab Report Number**																
1/08/2016	S1	EM1609083	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23/11/2016		EM1614219	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28/02/2017		EM1702250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14/06/2017		EM1707805	-	-	<0.001	-	<0.0001	-	<0.001	-	<0.001	-	-	-	<0.001	-	-	-
11/09/2017		EM1712490	-	-	-	-	<0.0001	-	<0.001	-	0.003	-	-	-	<0.001	-	0.006	-
20/03/2018		EM1804934	-	-	-	-	<0.0001	-	0.002	-	0.015	-	<0.05	-	0.002	-	0.016	-
25/06/2018		EM1810261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19/09/2018		EM1815239	0.11	<0.001	<0.001	<0.0001	<0.0001	0.002	<0.001	0.001	<0.001	0.80	0.23	<0.001	<0.001	0.020	0.004	<0.0001
12/12/2018		EM1820185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/03/2019		EM1904168	-	-	-	<0.0001	<0.0001	<0.001	<0.001	<0.001	0.010	0.06	<0.05	<0.001	<0.001	0.014	0.011	-
26/06/2019		EM1910172	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/09/2019		EM1915222	-	-	-	<0.0001	<0.0001	0.002	<0.001	<0.001	0.011	0.46	0.18	<0.001	0.002	0.011	0.010	-
24/03/2020		EM2005146	-	-	-	<0.0001	<0.0001	<0.001	<0.001	<0.001	0.025	0.07	<0.05	<0.001	0.001	0.014	0.009	-
16/06/2020		EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29/09/2020		EM2017090	-	-	-	<0.0001	<0.0001	0.001	<0.001	<0.001	0.082	0.44	0.21	<0.001	0.002	0.013	0.012	-
7/12/2020		EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23/03/2021		EM2105106	-	-	-	<0.0001	<0.0001	<0.001	<0.001	<0.001	0.104	0.06	<0.05	<0.001	0.004	0.015	0.019	-
22/06/2021		EM2111910	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28/09/2021		EM2119193	-	-	-	<0.0001	<0.0001	<0.001	<0.001	<0.001	<0.001	0.17	<0.05	<0.001	<0.001	0.015	0.002	-
6/12/2021		EM2124670	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1/08/2016	S2	EM1609083	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23/11/2016		EM1614219	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28/02/2017		EM1702250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14/06/2017		EM1707805	-	-	<0.001	-	<0.0001	-	<0.001	-	0.001	-	-	-	<0.001	-	-	-
11/09/2017		EM1712490	-	-	-	-	<0.0001	-	<0.001	-	0.043	-	-	-	<0.001	-	0.006	-
20/03/2018		EM1804934	-	-	-	-	<0.0001	-	<0.001	-	0.035	-	<0.05	-	0.002	-	0.009	-
25/06/2018		EM1810261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/09/2018		EM1815239	0.04	<0.001	<0.001	<0.0001	<0.0001	<0.001	<0.001	0.001	0.048	0.23	0.06	<0.001	0.003	0.027	0.014	<0.0001
12/12/2018		EM1820185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19/03/2019		EM1904168	-	-	-	<0.0001	<0.0001	0.002	<0.001	<0.001	0.013	0.06	<0.05	<0.001	0.001	0.008	0.007	-
26/06/2019		EM1910172	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/09/2019		EM1915222	-	-	-	<0.0001	<0.0001	<0.001	<0.001	<0.001	0.010	0.18	0.08	<0.001	<0.001	0.008	0.009	-
17/12/2019		EM1921873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24/03/2020		EM2005146	-	-	-	<0.0001	<0.0001	<0.001	<0.001	<0.001	0.011	<0.05	<0.05	<0.001	<0.001	0.006	0.004	-
16/06/2020		EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30/09/2020		EM2017163	-	-	-	<0.0001	0.0001	<0.001	<0.001	<0.001	0.135	0.12	0.08	<0.001	0.002	0.008	0.012	-
7/12/2020		EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/03/2021		EM2104983	-	-	-	<0.0001	<0.0001	<0.001	<0.001	<0.001	0.006	0.05	<0.05	<0.001	<0.001	0.004	0.003	-
22/06/2021		EM2111910	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29/09/2021		EM2119454	-	-	-	<0.0001	<0.0001	<0.001	<0.001	<0.001	<0.001	0.08	<0.05	<0.001	<0.001	0.009	0.004	-

Table 4 - Historical Surface Water

			Metals														
Table 4: Historical Surface Water			Aluminium (filtered) mg/L	Arsenic mg/L	Arsenic (filtered) mg/L	Cadmium mg/L	Cadmium (filtered) mg/L	Chromium (III+VI) mg/L	Chromium (III+VI) (filtered) mg/L	Copper mg/L	Copper (filtered) mg/L	Iron mg/L	Iron (filtered) mg/L	Lead mg/L	Lead (filtered) mg/L	Manganese mg/L	Manganese (filtered) mg/L	Mercury mg/L
EQL			0.01	0.001	0.001	0.0001	0.0001	0.001	0.001	0.001	0.001	0.05	0.05	0.001	0.001	0.001	0.001	0.0001
ANZECC 2000 - Stock Watering			5	0.5	0.5	0.01	0.01	1	1	1	1			0.1	0.1			0.002
ANZG (2018) - FW - 95% (updated 26 July 2021)			0.055	0.013	0.013	0.0002	0.0002	0.001	0.001	0.0014	0.0014			0.0034	0.0034	1.9	1.9	0.0006
ADWG 2011 Health (v3.6 updated 2021)				0.01	0.01	0.002	0.002			2	2			0.01	0.01	0.5	0.5	0.001
ANZECC 2000 Irrigation - Long-term Trigger Values			5	0.1	0.1	0.01	0.01	0.1	0.1	0.2	0.2	0.2	0.2	2	2	0.2	0.2	0.002
ANZECC 2000 Irrigation - Short-term Trigger Values			20	2	2	0.05	0.05	1	1	5	5	10	10	5	5	10	10	0.002
Date	**Field ID**	**Lab Report Number**																
6/12/2021		EM2124670	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1/08/2016	S3	EM1609083	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23/11/2016		EM1614219	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14/06/2017		EM1707805	-	-	<0.001	-	<0.0001	-	<0.001	-	0.002	-	-	-	<0.001	-	-	-
11/09/2017		EM1712490	-	-	-	-	<0.0001	-	<0.001	-	<0.001	-	-	-	<0.001	-	0.451	-
25/06/2018		EM1810261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/09/2018		EM1815239	0.02	0.002	<0.001	<0.0001	<0.0001	0.003	<0.001	0.002	0.014	1.97	<0.05	<0.001	<0.001	0.402	0.012	<0.0001
26/06/2019		EM1910172	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/09/2019		EM1915222	-	-	-	<0.0001	<0.0001	0.004	0.001	0.003	0.011	2.28	0.89	0.001	0.002	0.319	0.282	-
16/06/2020		EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29/09/2020		EM2017090	-	-	-	<0.0001	<0.0001	0.006	0.004	0.005	0.144	5.89	3.45	0.002	0.003	1.50	1.37	-
7/12/2020		EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/06/2021		EM2111910	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29/09/2021		EM2119454	-	-	-	<0.0001	<0.0001	0.007	0.004	0.005	0.003	2.86	0.51	0.002	<0.001	0.385	0.316	-
6/12/2021		EM2124670	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1/08/2016	S4	EM1609083	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23/11/2016		EM1614219	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/02/2017		EM1702198	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14/06/2017		EM1707805	-	-	<0.001	-	<0.0001	-	<0.001	-	<0.001	-	-	-	<0.001	-	-	-
11/09/2017		EM1712490	-	-	-	-	<0.0001	-	<0.001	-	<0.001	-	-	-	<0.001	-	0.006	-
13/12/2017		EM1717302	-	-	-	-	<0.0001	-	<0.001	-	<0.001	-	-	-	<0.001	-	0.040	-
20/03/2018		EM1804934	-	-	-	-	<0.0001	-	<0.001	-	0.018	-	<0.05	-	0.002	-	0.008	-
25/06/2018		EM1810261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/09/2018		EM1815239	0.02	<0.001	<0.001	<0.0001	<0.0001	<0.001	<0.001	<0.001	0.014	0.19	<0.05	<0.001	<0.001	0.018	0.012	<0.0001
12/12/2018		EM1820185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/03/2019		EM1904168	-	-	-	<0.0001	<0.0001	<0.001	<0.001	<0.001	0.014	0.11	0.06	<0.001	0.001	0.037	0.034	-
26/06/2019		EM1910172	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10/09/2019		EM1915222	-	-	-	<0.0001	<0.0001	<0.001	<0.001	<0.001	0.008	0.12	<0.05	<0.001	<0.001	0.008	0.008	-
17/12/2019		EM1921873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23/03/2020		EM2005146	-	-	-	<0.0001	<0.0001	<0.001	<0.001	<0.001	0.006	0.07	<0.05	<0.001	<0.001	0.005	0.004	-
16/06/2020		EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28/09/2020		EM2017090	-	-	-	<0.0001	<0.0001	0.001	<0.001	<0.001	<0.001	0.47	0.12	<0.001	<0.001	0.011	0.006	-
7/12/2020		EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23/03/2021		EM2105106	-	-	-	<0.0001	<0.0001	<0.001	<0.001	<0.001	0.005	0.07	<0.05	<0.001	<0.001	0.006	0.006	-
22/06/2021		EM2111910	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28/09/2021		EM2119193	-	-	-	<0.0001	<0.0001	<0.001	0.002	<0.001	<0.001	0.06	<0.05	<0.001	<0.001	0.006	0.002	-
6/12/2021		EM2124670	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1/08/2016	S6	EM1609083	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23/11/2016		EM1614219	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/02/2017		EM1702198	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14/06/2017		EM1707805	-	-	<0.001	-	<0.0001	-	<0.001	-	<0.001	-	-	-	<0.001	-	-	-
11/09/2017		EM1712490	-	-	-	-	<0.0001	-	<0.001	-	<0.001	-	-	-	<0.001	-	0.004	-

Table 4 - Historical Surface Water

			Metals														
Table 4: Historical Surface Water			Aluminium (filtered) mg/L	Arsenic mg/L	Arsenic (filtered) mg/L	Cadmium mg/L	Cadmium (filtered) mg/L	Chromium (III+VI) mg/L	Chromium (III+VI) (filtered) mg/L	Copper mg/L	Copper (filtered) mg/L	Iron mg/L	Iron (filtered) mg/L	Lead mg/L	Lead (filtered) mg/L	Manganese mg/L	Manganese (filtered) mg/L	Mercury mg/L
EQL			0.01	0.001	0.001	0.0001	0.0001	0.001	0.001	0.001	0.001	0.05	0.05	0.001	0.001	0.001	0.001	0.0001
ANZECC 2000 - Stock Watering			5	0.5	0.5	0.01	0.01	1	1	1	1			0.1	0.1			0.002
ANZG (2018) - FW - 95% (updated 26 July 2021)			0.055	0.013	0.013	0.0002	0.0002	0.001	0.001	0.0014	0.0014			0.0034	0.0034	1.9	1.9	0.0006
ADWG 2011 Health (v3.6 updated 2021)				0.01	0.01	0.002	0.002			2	2			0.01	0.01	0.5	0.5	0.001
ANZECC 2000 Irrigation - Long-term Trigger Values			5	0.1	0.1	0.01	0.01	0.1	0.1	0.2	0.2	0.2	0.2	2	2	0.2	0.2	0.002
ANZECC 2000 Irrigation - Short-term Trigger Values			20	2	2	0.05	0.05	1	1	5	5	10	10	5	5	10	10	0.002
Date	**Field ID**	**Lab Report Number**																
13/12/2017		EM1717302	-	-	-	-	<0.0001	-	<0.001	-	0.001	-	-	-	<0.001	-	0.029	-
20/03/2018		EM1804934	-	-	-	-	<0.0001	-	<0.001	-	0.018	-	<0.05	-	0.001	-	0.006	-
25/06/2018		EM1810261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/09/2018		EM1815239	0.02	<0.001	<0.001	<0.0001	<0.0001	<0.001	<0.001	<0.001	0.022	0.36	<0.05	<0.001	0.002	0.027	0.013	<0.0001
12/12/2018		EM1820185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26/06/2019		EM1910172	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24/03/2020		EM2005146	-	-	-	<0.0001	<0.0001	<0.001	<0.001	<0.001	0.012	0.06	<0.05	<0.001	<0.001	0.004	0.005	-
16/06/2020		EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28/09/2020		EM2017090	-	-	-	<0.0001	<0.0001	<0.001	<0.001	<0.001	<0.001	0.38	0.12	<0.001	<0.001	0.011	0.008	-
7/12/2020		EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/03/2021		EM2104983	-	-	-	<0.0001	<0.0001	<0.001	<0.001	<0.001	0.004	0.06	<0.05	<0.001	<0.001	0.005	0.004	-
28/09/2021		EM2119193	-	-	-	<0.0001	<0.0001	<0.001	<0.001	<0.001	<0.001	0.08	<0.05	<0.001	<0.001	0.006	0.002	-
6/12/2021		EM2124670	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2/08/2016	S7	EM1609083	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23/11/2016		EM1614219	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/02/2017		EM1702198	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14/06/2017		EM1707805	-	-	0.010	-	<0.0001	-	0.004	-	0.001	-	-	-	<0.001	-	-	-
12/09/2017		EM1712490	-	-	-	-	<0.0001	-	0.002	-	0.001	-	-	-	<0.001	-	0.226	-
25/06/2018		EM1810261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19/09/2018		EM1815239	-	0.008	-	0.0001	-	0.019	-	0.029	-	6.91	-	0.016	-	0.274	-	<0.0001
10/09/2019		EM1915222	-	-	-	<0.0002	<0.0002	0.031	0.006	0.050	0.038	10.7	1.72	0.016	0.003	0.245	0.076	-
16/06/2020		EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30/09/2020		EM2017163	-	-	-	0.0002	0.0001	0.015	0.005	0.042	0.147	7.02	3.47	0.010	0.004	0.625	0.526	-
22/06/2021		EM2111910	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29/09/2021		EM2119454	-	-	-	0.0002	<0.0001	0.015	0.002	0.031	0.016	8.36	0.57	0.010	<0.001	0.298	0.160	-
2/08/2016		EM1609083	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23/11/2016		EM1614219	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/02/2017		EM1702198	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14/06/2017		EM1707805	-	-	<0.001	-	<0.0001	-	<0.001	-	<0.001	-	-	-	<0.001	-	-	-
12/09/2017		EM1712490	-	-	-	-	<0.0001	-	<0.001	-	<0.001	-	-	-	<0.001	-	0.006	-
13/12/2017		EM1717302	-	-	-	-	0.0001	-	<0.001	-	0.002	-	-	-	0.016	-	0.042	-
21/03/2018		EM1805110	-	-	-	-	<0.0001	-	<0.001	-	0.019	-	-	-	0.001	-	0.007	-
25/06/2018		EM1810261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/09/2018		EM1815239	0.02	<0.001	<0.001	<0.0001	<0.0001	<0.001	<0.001	<0.001	0.023	0.21	<0.05	0.006	0.003	0.022	0.013	<0.0001
12/12/2018		EM1820185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/03/2019		EM1904168	-	-	-	<0.0001	<0.0001	<0.001	<0.001	<0.001	0.009	0.10	<0.05	<0.001	<0.001	0.008	0.005	-
26/06/2019		EM1910172	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23/03/2020		EM2005146	-	-	-	<0.0001	<0.0001	<0.001	<0.001	<0.001	0.022	0.07	<0.05	<0.001	0.001	0.009	0.010	-
16/06/2020		EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7/12/2020		EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/09/2021		EM2119193	-	-	-	<0.0001	<0.0001	<0.001	<0.001	<0.001	<0.001	0.10	<0.05	<0.001	<0.001	0.009	0.004	-
6/12/2021	S9	EM2124670	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 4 - Historical Surface Water

Table 4: Historical Surface Water			Mercury (filtered) mg/L	Nickel mg/L	Nickel (filtered) mg/L	Selenium mg/L	Selenium (filtered) mg/L	Zinc mg/L	Zinc (filtered) mg/L
EQL			0.0001	0.001	0.001	0.01	0.01	0.005	0.005
ANZECC 2000 - Stock Watering			0.002	1	1	0.02	0.02	20	20
ANZG (2018) - FW - 95% (updated 26 July 2021)			0.0006	0.011	0.011	0.011	0.011	0.008	0.008
ADWG 2011 Health (v3.6 updated 2021)			0.001	0.02	0.02	0.01	0.01		
ANZECC 2000 Irrigation - Long-term Trigger Values			0.002	0.2	0.2	0.02	0.02	2	2
ANZECC 2000 Irrigation - Short-term Trigger Values			0.002	2	2	0.05	0.05	5	5
Date	**Field ID**	**Lab Report Number**							
1/08/2016	S1	EM1609083	-	-	-	-	-	-	-
23/11/2016		EM1614219	-	-	-	-	-	-	-
28/02/2017		EM1702250	-	-	-	-	-	-	-
14/06/2017		EM1707805	<0.0001	-	<0.001	-	-	-	<0.005
11/09/2017		EM1712490	-	-	<0.001	-	-	-	<0.005
20/03/2018		EM1804934	-	-	0.006	-	-	-	0.035
25/06/2018		EM1810261	-	-	-	-	-	-	-
19/09/2018		EM1815239	<0.0001	0.003	0.001	<0.01	<0.01	<0.005	<0.005
12/12/2018		EM1820185	-	-	-	-	-	-	-
20/03/2019		EM1904168	-	<0.001	0.010	-	-	<0.005	0.107
26/06/2019		EM1910172	-	-	-	-	-	-	-
11/09/2019		EM1915222	-	0.001	0.013	-	-	<0.005	0.042
24/03/2020		EM2005146	-	<0.001	0.013	-	-	<0.005	0.075
16/06/2020		EM2010246	-	-	-	-	-	-	-
29/09/2020		EM2017090	-	0.002	0.008	-	-	<0.005	0.090
7/12/2020		EM2021896	-	-	-	-	-	-	-
23/03/2021		EM2105106	-	<0.001	0.018	-	-	<0.005	0.213
22/06/2021		EM2111910	-	-	-	-	-	-	-
28/09/2021		EM2119193	-	<0.001	<0.001	-	-	<0.005	<0.005
6/12/2021		EM2124670	-	-	-	-	-	-	-
1/08/2016	S2	EM1609083	-	-	-	-	-	-	-
23/11/2016		EM1614219	-	-	-	-	-	-	-
28/02/2017		EM1702250	-	-	-	-	-	-	-
14/06/2017		EM1707805	<0.0001	-	<0.001	-	-	-	0.007
11/09/2017		EM1712490	-	-	0.002	-	-	-	0.035
20/03/2018		EM1804934	-	-	0.006	-	-	-	0.063
25/06/2018		EM1810261	-	-	-	-	-	-	-
18/09/2018		EM1815239	<0.0001	0.002	0.004	<0.01	<0.01	<0.005	0.043
12/12/2018		EM1820185	-	-	-	-	-	-	-
19/03/2019		EM1904168	-	0.001	0.015	-	-	<0.005	0.108
26/06/2019		EM1910172	-	-	-	-	-	-	-
11/09/2019		EM1915222	-	0.001	0.010	-	-	<0.005	0.054
17/12/2019		EM1921873	-	-	-	-	-	-	-
24/03/2020		EM2005146	-	<0.001	0.004	-	-	<0.005	0.024
16/06/2020		EM2010246	-	-	-	-	-	-	-
30/09/2020		EM2017163	-	0.001	0.010	-	-	<0.005	0.172
7/12/2020		EM2021896	-	-	-	-	-	-	-
22/03/2021		EM2104983	-	<0.001	<0.001	-	-	<0.005	<0.005
22/06/2021		EM2111910	-	-	-	-	-	-	-
29/09/2021		EM2119454	-	<0.001	<0.001	-	-	<0.005	<0.005

Table 4 - Historical Surface Water

Table 4: Historical Surface Water			Mercury (filtered)	Nickel	Nickel (filtered)	Selenium	Selenium (filtered)	Zinc	Zinc (filtered)
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.0001	0.001	0.001	0.01	0.01	0.005	0.005
ANZECC 2000 - Stock Watering			0.002	1	1	0.02	0.02	20	20
ANZG (2018) - FW - 95% (updated 26 July 2021)			0.0006	0.011	0.011	0.011	0.011	0.008	0.008
ADWG 2011 Health (v3.6 updated 2021)			0.001	0.02	0.02	0.01	0.01		
ANZECC 2000 Irrigation - Long-term Trigger Values			0.002	0.2	0.2	0.02	0.02	2	2
ANZECC 2000 Irrigation - Short-term Trigger Values			0.002	2	2	0.05	0.05	5	5
Date	**Field ID**	**Lab Report Number**							
6/12/2021		EM2124670	-	-	-	-	-	-	-
1/08/2016	S3	EM1609083	-	-	-	-	-	-	-
23/11/2016		EM1614219	-	-	-	-	-	-	-
14/06/2017		EM1707805	<0.0001	-	0.003	-	-	-	<0.005
11/09/2017		EM1712490	-	-	0.002	-	-	-	<0.005
25/06/2018		EM1810261	-	-	-	-	-	-	-
18/09/2018		EM1815239	<0.0001	0.005	0.006	<0.01	<0.01	0.005	0.015
26/06/2019		EM1910172	-	-	-	-	-	-	-
11/09/2019		EM1915222	-	0.006	0.013	-	-	0.006	0.044
16/06/2020		EM2010246	-	-	-	-	-	-	-
29/09/2020		EM2017090	-	0.012	0.020	-	-	0.021	0.228
7/12/2020		EM2021896	-	-	-	-	-	-	-
22/06/2021		EM2111910	-	-	-	-	-	-	-
29/09/2021		EM2119454	-	0.009	0.007	-	-	0.014	0.009
6/12/2021		EM2124670	-	-	-	-	-	-	-
1/08/2016	S4	EM1609083	-	-	-	-	-	-	-
23/11/2016		EM1614219	-	-	-	-	-	-	-
27/02/2017		EM1702198	-	-	-	-	-	-	-
14/06/2017		EM1707805	<0.0001	-	<0.001	-	-	-	<0.005
11/09/2017		EM1712490	-	-	<0.001	-	-	-	<0.005
13/12/2017		EM1717302	-	-	0.002	-	-	-	<0.005
20/03/2018		EM1804934	-	-	0.006	-	-	-	0.028
25/06/2018		EM1810261	-	-	-	-	-	-	-
18/09/2018		EM1815239	<0.0001	0.001	0.007	<0.01	<0.01	<0.005	0.016
12/12/2018		EM1820185	-	-	-	-	-	-	-
18/03/2019		EM1904168	-	0.002	0.008	-	-	<0.005	0.082
26/06/2019		EM1910172	-	-	-	-	-	-	-
10/09/2019		EM1915222	-	0.001	0.009	-	-	<0.005	0.050
17/12/2019		EM1921873	-	-	-	-	-	-	-
23/03/2020		EM2005146	-	<0.001	0.005	-	-	<0.005	0.027
16/06/2020		EM2010246	-	-	-	-	-	-	-
28/09/2020		EM2017090	-	0.002	<0.001	-	-	<0.005	<0.005
7/12/2020		EM2021896	-	-	-	-	-	-	-
23/03/2021		EM2105106	-	<0.001	<0.001	-	-	<0.005	<0.005
22/06/2021		EM2111910	-	-	-	-	-	-	-
28/09/2021		EM2119193	-	<0.001	<0.001	-	-	<0.005	<0.005
6/12/2021		EM2124670	-	-	-	-	-	-	-
1/08/2016	S6	EM1609083	-	-	-	-	-	-	-
23/11/2016		EM1614219	-	-	-	-	-	-	-
27/02/2017		EM1702198	-	-	-	-	-	-	-
14/06/2017		EM1707805	<0.0001	-	<0.001	-	-	-	<0.005
11/09/2017		EM1712490	-	-	<0.001	-	-	-	<0.005

Table 4 - Historical Surface Water

Table 4: Historical Surface Water			Mercury (filtered)	Nickel	Nickel (filtered)	Selenium	Selenium (filtered)	Zinc	Zinc (filtered)
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.0001	0.001	0.001	0.01	0.01	0.005	0.005
ANZECC 2000 - Stock Watering			0.002	1	1	0.02	0.02	20	20
ANZG (2018) - FW - 95% (updated 26 July 2021)			0.0006	0.011	0.011	0.011	0.011	0.008	0.008
ADWG 2011 Health (v3.6 updated 2021)			0.001	0.02	0.02	0.01	0.01		
ANZECC 2000 Irrigation - Long-term Trigger Values			0.002	0.2	0.2	0.02	0.02	2	2
ANZECC 2000 Irrigation - Short-term Trigger Values			0.002	2	2	0.05	0.05	5	5
Date	**Field ID**	**Lab Report Number**							
13/12/2017		EM1717302	-	-	<0.001	-	-	-	0.006
20/03/2018		EM1804934	-	-	0.003	-	-	-	0.031
25/06/2018		EM1810261	-	-	-	-	-	-	-
18/09/2018		EM1815239	<0.0001	0.001	0.005	<0.01	<0.01	<0.005	0.027
12/12/2018		EM1820185	-	-	-	-	-	-	-
26/06/2019		EM1910172	-	-	-	-	-	-	-
24/03/2020		EM2005146	-	<0.001	0.012	-	-	<0.005	0.061
16/06/2020		EM2010246	-	-	-	-	-	-	-
28/09/2020		EM2017090	-	0.002	0.001	-	-	<0.005	<0.005
7/12/2020		EM2021896	-	-	-	-	-	-	-
22/03/2021		EM2104983	-	<0.001	<0.001	-	-	<0.005	<0.005
28/09/2021		EM2119193	-	<0.001	<0.001	-	-	<0.005	<0.005
6/12/2021		EM2124670	-	-	-	-	-	-	-
2/08/2016	S7	EM1609083	-	-	-	-	-	-	-
23/11/2016		EM1614219	-	-	-	-	-	-	-
27/02/2017		EM1702198	-	-	-	-	-	-	-
14/06/2017		EM1707805	<0.0001	-	0.009	-	-	-	0.005
12/09/2017		EM1712490	-	-	0.004	-	-	-	<0.005
25/06/2018		EM1810261	-	-	-	-	-	-	-
19/09/2018		EM1815239	-	0.016	-	<0.01	-	0.076	-
10/09/2019		EM1915222	-	0.025	0.022	-	-	0.128	0.068
16/06/2020		EM2010246	-	-	-	-	-	-	-
30/09/2020		EM2017163	-	0.030	0.034	-	-	0.144	0.245
22/06/2021		EM2111910	-	-	-	-	-	-	-
29/09/2021		EM2119454	-	0.025	0.018	-	-	0.083	0.027
2/08/2016		EM1609083	-	-	-	-	-	-	-
23/11/2016		EM1614219	-	-	-	-	-	-	-
27/02/2017		EM1702198	-	-	-	-	-	-	-
14/06/2017		EM1707805	<0.0001	-	<0.001	-	-	-	<0.005
12/09/2017		EM1712490	-	-	<0.001	-	-	-	0.012
13/12/2017		EM1717302	-	-	<0.001	-	-	-	0.024
21/03/2018		EM1805110	-	-	0.006	-	-	-	0.036
25/06/2018		EM1810261	-	-	-	-	-	-	-
18/09/2018		EM1815239	<0.0001	<0.001	0.004	<0.01	<0.01	<0.005	0.030
12/12/2018		EM1820185	-	-	-	-	-	-	-
18/03/2019		EM1904168	-	0.001	0.004	-	-	<0.005	0.050
26/06/2019		EM1910172	-	-	-	-	-	-	-
23/03/2020		EM2005146	-	<0.001	0.014	-	-	<0.005	0.078
16/06/2020		EM2010246	-	-	-	-	-	-	-
7/12/2020		EM2021896	-	-	-	-	-	-	-
27/09/2021		EM2119193	-	<0.001	<0.001	-	-	<0.005	<0.005
6/12/2021	S9	EM2124670	-	-	-	-	-	-	-

Table 5- Landfill Leachate 2021

				Cyanide	Acidity & Alkalinity													
Table 5: Landfill leachate 2021			Total Dissolved Solids	Total Suspended Solids	Cyanide (Total)	Alkalinity (Carbonate as CaCO3)	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide as CaCO3)	Alkalinity (total as CaCO3)	Calcium (filtered)	Magnesium (filtered)	Potassium (filtered)	Sodium (filtered)	Chloride	Sulfate (filtered)	Cations Total	Anions Total	Ionic Balance	Thiosulfate as S2O3 2-
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	%	mg/L
EQL			10	5	0.004	1	1	1	1	1	1	1	1	1	1	0.01	0.01	0.01	2
ANZECC 2000 - Stock Watering			5,000							1,000					1,000				
ANZG (2018) - FW - 95% (updated 26 July 2021)					0.007														
ADWG 2011 Health (v3.6 updated 2021)					0.08										500				
ANZECC 2000 Irrigation - Long-term Trigger Values														350					
ANZECC 2000 Irrigation - Short-term Trigger Values																			
Date	**Field ID**	**Lab Report Number**																	
12 May 2021	Landfill Leachate	EM2108650	6,060	72	0.008	39	2,070	<1	2,110	72	58	480	1,630	2,830	7	114	122	3.56	14
22 June 2021	Landfill Leachate	EM2111910	5,080	63	<0.010	<1	2,620	<1	2,620	77	48	418	1,130	1,710	24	108	101	3.25	28
20 July 2021	Landfill Leachate	EM2114040	5,610	80	-	<1	3,380	<1	3,380	77	46	399	884	1,480	31	110	110	0.22	14
18 August 2021	Landfill Leachate	EM2116503	3,770	42	-	<1	634	<1	634	81	44	383	840	1,180	<1	54.0	46.0	8.05	560
28 September 2021	Pomona pump	EM2119193	-	122	<0.020	<1	5,720	<1	5,720	118	76	1,230	1,810	3,150	52	227	204	5.27	-
18 October 2021	Landfill Leachate	EM2120767	3,470	68	-	<1	2,070	<1	2,070	49	30	305	673	1,100	<1	66.6	72.4	4.22	28
17 November 2021	Pomona (landfill leachate)	EM2123125	3,500	24	-	<1	2,020	<1	2,020	58	32	321	672	1,070	<1	80.5	70.5	6.54	56
6 December 2021	Landfill Leachate	EM2124673	11,800	420	0.043	<1	10,800	<1	10,800	94	75	1,280	2,000	3,830	30	276	324	8.00	84

Table 5- Landfill Leachate 2021

												Organic Indicators						
Table 5: Landfill leachate 2021			Sulfide	Ammonia as N	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total Oxidised) (as N)	Nitrogen (Total)	Kjeldahl Nitrogen Total	Reactive Phosphorus as P	Phosphorus (Total)	Sulfite as SO3-	Sulfur (Total Oxidised as SO4)	BOD	Dissolved Organic Carbon	Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.1	0.01	0.01	0.01	0.01	0.1	0.1	0.01	0.01	2	10	2	1	0.01	0.01	0.001	0.001
ANZECC 2000 - Stock Watering					90	9.1										5	5	0.5	0.5
ANZG (2018) - FW - 95% (updated 26 July 2021)				0.9	2.4											0.055	0.055	0.013	0.013
ADWG 2011 Health (v3.6 updated 2021)					11.29	0.91												0.01	0.01
ANZECC 2000 Irrigation - Long-term Trigger Values								5			0.05					5	5	0.1	0.1
ANZECC 2000 Irrigation - Short-term Trigger Values								25			0.8					20	20	2	2
Date	**Field ID**	**Lab Report Number**																	
12 May 2021	Landfill Leachate	EM2108650	0.4	311	0.02	<0.01	0.02	370	370	1.93	3.94	<10	80	72	416	0.35	0.27	0.055	0.054
22 June 2021	Landfill Leachate	EM2111910	1.0	564	0.01	<0.01	0.01	558	558	3.28	5.78	10	90	89	353	0.66	0.44	0.057	0.049
20 July 2021	Landfill Leachate	EM2114040	1.5	745	-	-	2.41	790	788	-	7.85	<10	80	298	-	-	-	-	-
18 August 2021	Landfill Leachate	EM2116503	11.9	521	-	-	<0.01	614	614	-	9.42	175	<100	154	-	-	-	-	-
28 September 2021	Pomona pump	EM2119193	-	1,860	0.41	<0.05	0.41	2,370	2,370	25.0	22.1	-	-	508	209	4.17	3.17	0.214	0.175
18 October 2021	Landfill Leachate	EM2120767	0.2	344	-	-	<0.01	400	400	-	5.56	<20	<100	91	-	-	-	-	-
17 November 2021	Pomona (landfill leachate)	EM2123125	1.5	358	-	-	<0.01	404	404	-	5.52	20	60	56	-	-	-	-	-
6 December 2021	Landfill Leachate	EM2124673	<0.5	2,030	0.45	<0.10	0.45	2,170	2,170	15.8	16.6	35	310	508	2,030	4.22	4.00	0.256	0.258

Table 5- Landfill Leachate 2021

									Metals									
Table 5: Landfill leachate 2021			Cadmium	Cadmium (filtered)	Chromium (III+VI)	Chromium (III+VI) (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Selenium
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.0001	0.0001	0.001	0.001	0.001	0.001	0.05	0.05	0.001	0.001	0.001	0.001	0.0001	0.0001	0.001	0.001	0.01
ANZECC 2000 - Stock Watering			0.01	0.01	1	1	1	1			0.1	0.1			0.002	0.002	1	1	0.02
ANZG (2018) - FW - 95% (updated 26 July 2021)			0.0002	0.0002	0.001	0.001	0.0014	0.0014			0.0034	0.0034	1.9	1.9	0.0006	0.0006	0.011	0.011	0.011
ADWG 2011 Health (v3.6 updated 2021)			0.002	0.002			2	2			0.01	0.01	0.5	0.5	0.001	0.001	0.02	0.02	0.01
ANZECC 2000 Irrigation - Long-term Trigger Values			0.01	0.01	0.1	0.1	0.2	0.2	0.2	0.2	2	2	0.2	0.2	0.002	0.002	0.2	0.2	0.02
ANZECC 2000 Irrigation - Short-term Trigger Values			0.05	0.05	1	1	5	5	10	10	5	5	10	10	0.002	0.002	2	2	0.05
Date	**Field ID**	**Lab Report Number**																	
12 May 2021	Landfill Leachate	EM2108650	<0.0001	<0.0001	0.170	0.097	0.001	0.001	7.26	4.28	0.001	<0.001	0.246	0.229	<0.0001	<0.0001	0.082	0.069	<0.01
22 June 2021	Landfill Leachate	EM2111910	0.0001	<0.0001	0.213	0.157	0.604	0.031	3.71	0.98	0.023	0.002	0.342	0.282	<0.0001	<0.0001	0.072	0.064	<0.01
20 July 2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18 August 2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28 September 2021	Pomona pump	EM2119193	<0.0010	<0.0010	1.11	1.01	0.142	0.022	13.0	9.27	0.030	<0.010	0.817	0.833	<0.0010	<0.0001	0.241	0.232	<0.10
18 October 2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17 November 2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6 December 2021	Landfill Leachate	EM2124673	<0.0010	<0.0010	1.24	1.12	0.427	0.378	82.0	17.7	0.027	0.012	0.830	0.602	<0.0010	<0.0010	0.256	0.231	<0.10

Table 5- Landfill Leachate 2021

				BTEXN								TRH - NEPM 2013					
Table 5: Landfill leachate 2021	Selenium (filtered)	Zinc	Zinc (filtered)	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX (Sum of Total) - Lab Calc	Naphthalene	F1 (C6-C10 minus BTEX)	C6-C10 Fraction	F2 (>C10-C16 minus Naphthalene)	>C10-C16 Fraction	F3 (>C16-C34 Fraction)	F4 (>C34-C40 Fraction)
	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.01	0.005	0.005	1	2	2	2	2	2	1	1	20	20	100	100	100	100
ANZECC 2000 - Stock Watering	0.02	20	20														
ANZG (2018) - FW - 95% (updated 26 July 2021)	0.011	0.008	0.008	950	180	80	350				16						
ADWG 2011 Health (v3.6 updated 2021)	0.01			1	800	300			600								
ANZECC 2000 Irrigation - Long-term Trigger Values	0.02	2	2														
ANZECC 2000 Irrigation - Short-term Trigger Values	0.05	5	5														
Date	**Field ID**	**Lab Report Number**															
12 May 2021	Landfill Leachate	EM2108650	<0.01	0.023	0.016	<1	<2	<2	<2	<2	<2	<1	<4	<20	<20	420	420	1,180	<100
22 June 2021	Landfill Leachate	EM2111910	<0.01	0.368	0.065	<1	6	<2	<2	3	3	9	<4	20	30	730	730	1,530	<100
20 July 2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18 August 2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28 September 2021	Pomona pump	EM2119193	<0.10	0.458	0.162	<1	4	<2	6	10	16	20	<5	180	200	5,510	5,510	9,830	360
18 October 2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17 November 2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6 December 2021	Landfill Leachate	EM2124673	<0.10	0.533	0.340	<1	2	4	5	6	11	17	<2	170	190	2,120	2,120	4,420	150

Table 5- Landfill Leachate 2021

		TRH - NEPM 1999					TPH	PAHs - standard 16										
Table 5: Landfill leachate 2021	>C10-C40 (Sum of Total)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 (Sum of Total)	Oil & Grease	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	100	20	50	100	50	50	5,000	1	1	1	1	0.5	1	1	1	1	1
ANZECC 2000 - Stock Watering																	
ANZG (2018) - FW - 95% (updated 26 July 2021)										0.4		0.2				1.4	
ADWG 2011 Health (v3.6 updated 2021)												0.01					
ANZECC 2000 Irrigation - Long-term Trigger Values																	
ANZECC 2000 Irrigation - Short-term Trigger Values																	
Date	**Field ID**	**Lab Report Number**																
12 May 2021	Landfill Leachate	EM2108650	1,600	<20	290	1,240	140	1,670	<5,000	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
22 June 2021	Landfill Leachate	EM2111910	2,260	50	560	1,670	140	2,370	7,000	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
20 July 2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	<5,000	-	-	-	-	-	-	-	-	-	-
18 August 2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	6,000	-	-	-	-	-	-	-	-	-	-
28 September 2021	Pomona pump	EM2119193	15,700	190	4,530	11,000	710	16,200	-	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
18 October 2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	<5,000	-	-	-	-	-	-	-	-	-	-
17 November 2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	6,000	-	-	-	-	-	-	-	-	-	-
6 December 2021	Landfill Leachate	EM2124673	6,690	210	1,730	4,800	340	6,870	5,000	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2

Table 5- Landfill Leachate 2021

						PAHs - extended				Phenols - Halogenated							
Table 5: Landfill leachate 2021	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	PAHs (Sum of total) - Lab calc	Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc	2-methylnaphthalene	3-methylcholanthrene	7,12-dimethylbenz(a)anthracene	Benzo(b+j+k)fluoranthene	2-Chlorophenol	2,4-Dichlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,6-Dichlorophenol	4-Chloro-3-methylphenol	Pentachlorophenol	Phenol
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	1	1	1	0.5	0.5	2	2	2	4	1	1	1	1	1	1	2	1
ANZECC 2000 - Stock Watering																	
ANZG (2018) - FW - 95% (updated 26 July 2021)		2								490	160		20			10	320
ADWG 2011 Health (v3.6 updated 2021)				0.01						300	200		20			10	
ANZECC 2000 Irrigation - Long-term Trigger Values																	
ANZECC 2000 Irrigation - Short-term Trigger Values																	

Date	Field ID	Lab Report Number																
12 May 2021	Landfill Leachate	EM2108650	<4	<4	<4	<4	<4	<4	<4	<4	<7	<4	<4	<4	<4	<4	<4	<4	<4
22 June 2021	Landfill Leachate	EM2111910	<4	<4	<4	<5	<5	<4	<4	<4	<8	<4	<4	<4	<4	<4	<4	<4	<4
20 July 2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18 August 2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28 September 2021	Pomona pump	EM2119193	<7	<7	<7	<9	<9	<7	<7	<7	<15	<7	<7	<7	<7	<7	<7	<7	50
18 October 2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17 November 2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6 December 2021	Landfill Leachate	EM2124673	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<2	<2	<4	5

Table 5- Landfill Leachate 2021

				Phenols - Non-Halogenated				OC Pesticides											
Table 5: Landfill leachate 2021				2-Nitrophenol	2-Methylphenol (o-Cresol)	3,4-Methylphenol (m,p-cresol)	2,4-Dimethylphenol	4,4'-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	Chlordane	Chlordane (cis)	Chlordane (trans)	d-BHC	4,4 DDD	4,4 DDT	DDT+DDE+DDD - Lab Calc	Dieldrin
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				1	1	2	1	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
ANZECC 2000 - Stock Watering																				
ANZG (2018) - FW - 95% (updated 26 July 2021)													0.08					0.01		
ADWG 2011 Health (v3.6 updated 2021)											0.3		2					9		
ANZECC 2000 Irrigation - Long-term Trigger Values																				
ANZECC 2000 Irrigation - Short-term Trigger Values																				
Date	**Field ID**	**Lab Report Number**																		
12 May 2021	Landfill Leachate	EM2108650		<4	<4	9	<4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5
22 June 2021	Landfill Leachate	EM2111910		<4	5	8	<4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5
20 July 2021	Landfill Leachate	EM2114040		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18 August 2021	Landfill Leachate	EM2116503		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28 September 2021	Pomona pump	EM2119193		<7	71	121	<7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<2.0	<0.7	<0.7
18 October 2021	Landfill Leachate	EM2120767		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17 November 2021	Pomona (landfill leachate)	EM2123125		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6 December 2021	Landfill Leachate	EM2124673		<2	52	38	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5

Table 5- Landfill Leachate 2021

Table 5: Landfill leachate 2021				Endosulfan I (alpha)	Endosulfan II (beta)	Endosulfan Sulfate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Azinphos methyl	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				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
ANZECC 2000 - Stock Watering																				
ANZG (2018) - FW - 95% (updated 26 July 2021)							0.02			0.2	0.09		0.1		0.02				0.01	
ADWG 2011 Health (v3.6 updated 2021)										10	0.3			300	30	10	0.5	2	10	
ANZECC 2000 Irrigation - Long-term Trigger Values																				
ANZECC 2000 Irrigation - Short-term Trigger Values																				
Date	**Field ID**	**Lab Report Number**																		
12 May 2021	Landfill Leachate	EM2108650		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
22 June 2021	Landfill Leachate	EM2111910		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
20 July 2021	Landfill Leachate	EM2114040		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18 August 2021	Landfill Leachate	EM2116503		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28 September 2021	Pomona pump	EM2119193		<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<2.0	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
18 October 2021	Landfill Leachate	EM2120767		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17 November 2021	Pomona (landfill leachate)	EM2123125		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6 December 2021	Landfill Leachate	EM2124673		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Table 5- Landfill Leachate 2021

				OP Pesticides												Pesticides			
Table 5: Landfill leachate 2021				Demeton-S-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenamiphos	Fenthion	Malathion	Methyl parathion	Monocrotophos	Parathion	Pirimphos-ethyl	Prothiofos	4-Chlorophenoxy acetic acid	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	2	2	0.5	0.5	10	5	5	5
ANZECC 2000 - Stock Watering																				
ANZG (2018) - FW - 95% (updated 26 July 2021)					0.01		0.15				0.05			0.004					270	400
ADWG 2011 Health (v3.6 updated 2021)					4	5	7	4	0.5	7	70	0.7	2	20	0.5					
ANZECC 2000 Irrigation - Long-term Trigger Values																				
ANZECC 2000 Irrigation - Short-term Trigger Values																				
Date	**Field ID**	**Lab Report Number**																		
12 May 2021	Landfill Leachate	EM2108650		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<0.5	<0.5	<10	<5	<5	<5
22 June 2021	Landfill Leachate	EM2111910		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<0.5	<0.5	<10	<5	<5	<5
20 July 2021	Landfill Leachate	EM2114040		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18 August 2021	Landfill Leachate	EM2116503		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28 September 2021	Pomona pump	EM2119193		<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<2.0	<2.0	<2.0	<0.7	<0.7	<10	<5	<5	<5
18 October 2021	Landfill Leachate	EM2120767		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17 November 2021	Pomona (landfill leachate)	EM2123125		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6 December 2021	Landfill Leachate	EM2124673		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<0.5	<0.5	<10	<5	<5	<5

Table 5- Landfill Leachate 2021

				Chlorinated Hydrocarbons															
Table 5: Landfill leachate 2021				1,1,2-trichloroethane	1,1-dichloroethene	1,1-dichloroethene (filtered)	1,1-dichloropropene	1,2,4-trichlorobenzene	1,2-dibromo-3-chloropropane	1,2-dichlorobenzene	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	1,4-dichlorobenzene	2,2-dichloropropane	2-chloronaphthalene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Carbon tetrachloride
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/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	2	5	2	5	5	5	2	5	2	5	5	5	5
ANZECC 2000 - Stock Watering																				
ANZG (2018) - FW - 95% (updated 26 July 2021)				6,500	700	700		170		160	1,900	1,100		60						240
ADWG 2011 Health (v3.6 updated 2021)					30	30				1,500	3			40						3
ANZECC 2000 Irrigation - Long-term Trigger Values																				
ANZECC 2000 Irrigation - Short-term Trigger Values																				
Date	**Field ID**	**Lab Report Number**																		
12 May 2021	Landfill Leachate	EM2108650		<5	<5	-	<5	<4	<5	<4	<5	<5	<5	<4	<5	<4	<5	<5	<5	<5
22 June 2021	Landfill Leachate	EM2111910		<5	<5	-	<5	<4	<5	<4	<5	<5	<5	<4	<5	<4	<5	<5	<5	<5
20 July 2021	Landfill Leachate	EM2114040		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18 August 2021	Landfill Leachate	EM2116503		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28 September 2021	Pomona pump	EM2119193		<5	<5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<7	<5	<5	<5	<5
18 October 2021	Landfill Leachate	EM2120767		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17 November 2021	Pomona (landfill leachate)	EM2123125		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6 December 2021	Landfill Leachate	EM2124673		<5	<5	-	<5	<2	<5	<2	<5	<5	<5	<2	<5	<2	<5	<5	<5	<5

Table 5- Landfill Leachate 2021

								Explosives				Halogenated						
Table 5: Landfill leachate 2021	Chlorobenzene µg/L	Chloroform µg/L	Chloromethane µg/L	cis-1,2-dichloroethene µg/L	Hexachlorobutadiene µg/L	Vinyl chloride µg/L	1,3,5-Trinitrobenzene µg/L	2,4-Dinitrotoluene µg/L	2,6-dinitrotoluene µg/L	Nitrobenzene µg/L	Bromomethane µg/L	Dichlorodifluoromethane µg/L	2,6-D µg/L	2,4,5-T µg/L	2,4,5-TP (Silvex) µg/L	2,4-D (Hedonal) µg/L	2,4-DP (dichlorprop) µg/L
EQL	5	5	50	5	2	50	2	4	4	2	50	50	10	10	10	10	10
ANZECC 2000 - Stock Watering																	
ANZG (2018) - FW - 95% (updated 26 July 2021)	55	770				100		65		550				36		280	
ADWG 2011 Health (v3.6 updated 2021)	300				0.7	0.3					1			100	10	30	100
ANZECC 2000 Irrigation - Long-term Trigger Values																	
ANZECC 2000 Irrigation - Short-term Trigger Values																	
Date	**Field ID**	**Lab Report Number**																
12 May 2021	Landfill Leachate	EM2108650	<5	<5	<50	<5	<4	<50	<4	<4	<4	<4	<50	<50	<10	<10	<10	<10	<10
22 June 2021	Landfill Leachate	EM2111910	<5	<5	<50	<5	<4	<50	<4	<4	<4	<4	<50	<50	<10	<10	<10	<10	<10
20 July 2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18 August 2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28 September 2021	Pomona pump	EM2119193	<5	<5	<50	<5	<5	<50	<7	<7	<7	<7	<50	<50	<10	<10	<10	<10	<10
18 October 2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17 November 2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6 December 2021	Landfill Leachate	EM2124673	<5	<5	<50	<5	<2	<50	<2	<4	<4	<2	<50	<50	<10	<10	<10	<10	<10

Table 5- Landfill Leachate 2021

			Herbicides										Nitroaromatics and Keytones					
Table 5: Landfill leachate 2021			2,4,6-Trichlorophenoxy-acetic acid	4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB)	Clopyralid	Dicamba	Fluroxypyr	MCPA	MCPB	Mecoprop	Picloram	Pronamide	Triclopyr	2-Picoline	4-aminobiphenyl	Acetophenone	N-Nitrosodiphenyl & Diphenylamine	Pentachloronitrobenzene	2-hexanone (MBK)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			10	10	10	10	10	10	10	10	10	2	10	2	2	2	4	2	50
ANZECC 2000 - Stock Watering																			
ANZG (2018) - FW - 95% (updated 26 July 2021)																			
ADWG 2011 Health (v3.6 updated 2021)					2,000	100		40			300	70	20					30	
ANZECC 2000 Irrigation - Long-term Trigger Values																			
ANZECC 2000 Irrigation - Short-term Trigger Values																			
Date	**Field ID**	**Lab Report Number**																	
12 May 2021	Landfill Leachate	EM2108650	<10	<10	<10	<10	<10	<10	<10	<10	<10	<4	<10	<4	<4	<4	<4	<4	-
22 June 2021	Landfill Leachate	EM2111910	<10	<10	<10	<10	<10	<10	<10	<10	<10	<4	<10	<4	<4	<4	<4	<4	<50
20 July 2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18 August 2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28 September 2021	Pomona pump	EM2119193	<10	<10	<10	<10	<10	<10	<10	<10	<10	<7	<10	13	<7	<7	<7	<7	-
18 October 2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17 November 2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6 December 2021	Landfill Leachate	EM2124673	<10	<10	<10	<10	<10	<10	<10	<10	<10	<2	<10	9	<2	6	<4	<2	<50

Table 5- Landfill Leachate 2021

	Solvents		PCBs	Phthalates						Surfactants							
Table 5: Landfill leachate 2021	Isophorone	Vinyl acetate	PCBs (Total)	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Diethylphthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate	Anionic Surfactants as MBAS	1-naphthylamine	2-(acetylamino) fluorene	2-nitroaniline	3,3-Dichlorobenzidine	3-nitroaniline	4-(dimethylamino) azobenzene	4-bromophenyl phenyl ether
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	2	50	1	10	2	2	2	2	2	50	2	2	4	2	4	2	2
ANZECC 2000 - Stock Watering																	
ANZG (2018) - FW - 95% (updated 26 July 2021)						1,000	3,700	26									
ADWG 2011 Health (v3.6 updated 2021)				10													
ANZECC 2000 Irrigation - Long-term Trigger Values																	
ANZECC 2000 Irrigation - Short-term Trigger Values																	
Date	**Field ID**	**Lab Report Number**															
12 May 2021	Landfill Leachate	EM2108650	<4	-	<1	<10	<4	<4	<4	<4	<4	1,000	<4	<4	<4	<4	<4	<4	<4
22 June 2021	Landfill Leachate	EM2111910	<4	<50	<1	<10	<4	<4	<4	<4	<4	700	<4	<4	<4	<4	<4	<4	<4
20 July 2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18 August 2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28 September 2021	Pomona pump	EM2119193	<7	-	<1	<10	<7	<7	<7	<7	<7	4,300	<7	<7	<7	<7	<7	<7	<7
18 October 2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17 November 2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6 December 2021	Landfill Leachate	EM2124673	<2	<50	<1	<10	<2	<2	<2	<2	<2	2,700	<2	<2	<4	<2	<4	<2	<2

Table 5- Landfill Leachate 2021

				SVOCs														
Table 5: Landfill leachate 2021				4-chloroaniline	4-chlorophenyl phenyl ether	4-nitroaniline	4-Nitroquinoline-N-oxide	5-nitro-o-toluidine	Aniline	Azobenzene	Bis(2-chloroethoxy) methane	Bis(2-chloroethyl)ether	Carbazole	Chlorobenzilate	Dibenzofuran	Hexachlorocyclopentadiene	Hexachloroethane	Hexachloropropene	Methapyrilene	N-nitrosodiethylamine
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				2	2	2	2	2	2	2	2	2	2	2	2	10	2	2	2	2
ANZECC 2000 - Stock Watering																				
ANZG (2018) - FW - 95% (updated 26 July 2021)									250								360			
ADWG 2011 Health (v3.6 updated 2021)																				
ANZECC 2000 Irrigation - Long-term Trigger Values																				
ANZECC 2000 Irrigation - Short-term Trigger Values																				
Date	**Field ID**	**Lab Report Number**																		
12 May 2021	Landfill Leachate	EM2108650		<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<10	<4	<4	<4	<4
22 June 2021	Landfill Leachate	EM2111910		<4	<4	<4	<4	<4	6	<4	<4	<4	<4	<4	<4	<10	<4	<4	<4	<4
20 July 2021	Landfill Leachate	EM2114040		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18 August 2021	Landfill Leachate	EM2116503		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28 September 2021	Pomona pump	EM2119193		<7	<7	<7	<7	<7	90	<7	<7	<7	<7	<7	<7	<10	<7	<7	<7	<7
18 October 2021	Landfill Leachate	EM2120767		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17 November 2021	Pomona (landfill leachate)	EM2123125		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6 December 2021	Landfill Leachate	EM2124673		<2	<2	<2	<2	<2	59	<2	<2	<2	<2	<2	<2	<10	<2	<2	<2	<2

Table 5- Landfill Leachate 2021

Table 5: Landfill leachate 2021			N-nitrosodi-n-butylamine	N-nitrosodi-n-propylamine	N-Nitrosomethylethylamine	N-nitrosomorpholine	N-nitrosopiperidine	N-nitrosopyrrolidine	Pentachlorobenzene	Phenacetin	1,1-dichloroethane	1,2,3-trichlorobenzene	1,2,3-trichloropropane	1,2-dibromoethane	1,3-dichlorobenzene	2-butanone (MEK)	4-methyl-2-pentanone (MIBK)	Acetone	Bromodichloromethane
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			2	2	2	2	2	4	2	2	5	5	5	5	2	50	50	50	5
ANZECC 2000 - Stock Watering																			
ANZG (2018) - FW - 95% (updated 26 July 2021)									2			10			260				
ADWG 2011 Health (v3.6 updated 2021)														1					
ANZECC 2000 Irrigation - Long-term Trigger Values																			
ANZECC 2000 Irrigation - Short-term Trigger Values																			
Date	**Field ID**	**Lab Report Number**																	
12 May 2021	Landfill Leachate	EM2108650	<4	<4	<4	<4	<4	<4	<4	<4	<5	<5	<5	<5	<4	-	-	<50	<5
22 June 2021	Landfill Leachate	EM2111910	<4	<4	<4	<4	<4	<4	<4	<4	<5	<5	<5	<5	<4	<50	<50	<50	<5
20 July 2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18 August 2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28 September 2021	Pomona pump	EM2119193	<7	<7	<7	<7	<7	<7	<7	<7	<5	<5	<5	<5	<5	-	-	100	<5
18 October 2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17 November 2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6 December 2021	Landfill Leachate	EM2124673	<2	<2	<2	<2	<2	<4	<2	<2	<5	<5	<5	<5	<2	350	<50	510	<5

Table 5- Landfill Leachate 2021

		VOCs														
Table 5: Landfill leachate 2021		Bromoform	Chlorodibromomethane	Chloroethane	cis-1,3-dichloropropene	cis-1,4-Dichloro-2-butene	Dibromomethane	Formaldehyde	Iodomethane	Pentachloroethane	Trichloroethene	Tetrachloroethene	trans-1,3-dichloropropene	trans-1,2-dichloroethene	trans-1,4-Dichloro-2-butene	Trichlorofluoromethane
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL		5	5	50	5	5	5	100	5	5	5	5	5	5	5	50
ANZECC 2000 - Stock Watering																
ANZG (2018) - FW - 95% (updated 26 July 2021)										80	330	70				
ADWG 2011 Health (v3.6 updated 2021)								500				50				
ANZECC 2000 Irrigation - Long-term Trigger Values																
ANZECC 2000 Irrigation - Short-term Trigger Values																
Date	**Field ID**	**Lab Report Number**														
12 May 2021	Landfill Leachate	EM2108650	<5	<5	<50	<5	<5	<5	1,000	<5	<5	<5	<5	<5	<5	<5	<50
22 June 2021	Landfill Leachate	EM2111910	<5	<5	<50	<5	<5	<5	600	<5	<5	<5	<5	<5	<5	<5	<50
20 July 2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18 August 2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28 September 2021	Pomona pump	EM2119193	<5	<5	<50	<5	<5	<5	<1,000	<5	<5	<5	<5	<5	<5	<5	<50
18 October 2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17 November 2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6 December 2021	Landfill Leachate	EM2124673	<5	<5	<50	<5	<5	<5	6,600	<5	<5	<5	<5	<5	<5	<5	<50

Table 6 - Historical Leachate

			Unassigned							Cyanide	Acidity & Alkalinity				Major Ions							
			Bisphenol A	Total Dissolved Solids	Total Dissolved Solids (filtered)	Total Suspended Solids	Total Suspended Solids (filtered)	COD	COD (filtered)	Cyanide (Total)	Alkalinity (Carbonate as CaCO3)	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide as CaCO3)	Alkalinity (total as CaCO3)	Calcium	Calcium (filtered)	Magnesium	Magnesium (filtered)	Potassium (filtered)	Sodium	Sodium (filtered)	Chloride
Table 6: Historical Leachate			µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.05	10	10	5	5	10	10	0.004	1	1	1	1	1	1	1	1	1	1	1	1
ANZECC 2000 - Stock Watering				5,000	5,000										1,000	1,000						
ANZG (2018) - FW - 95% (updated 26 July 2021)										0.007												
ADWG 2011 Health (v3.6 updated 2021)										0.08												
ANZECC 2000 Irrigation - Long-term Trigger Values																						350
ANZECC 2000 Irrigation - Short-term Trigger Values																						
Date	**Field ID**	**Lab Report Number**																				
10/09/2013	LEACHATE POND 2	EM1309644	-	4,870	-	482	-	2,860	-	-	-	-	-	-	194	-	63	-	-	854	-	1,360
18/11/2013	Landfill leachate (quarterly)	EM1312183	-	3,290	-	189	-	788	-	-	-	-	-	-	80	-	46	-	-	724	-	1,210
4/03/2014	Landfill leachate (quarterly)	EM1401975	-	4,920	-	194	-	938	-	-	-	-	-	-	50	-	68	-	-	1,190	-	2,200
2/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-	-	-	1,260	-	-	-	-	-	-	103	-	63	-	-	1,220	-	-
17/06/2014	Landfill leachate (quarterly)	EM1405379	-	8,050	-	285	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,410
2/09/2014	Landfill leachate (quarterly)	EM1408979	-	6,070	-	76	-	2,020	-	-	-	-	-	-	122	-	59	-	-	1,520	-	2,510
1/06/2015	Landfill leachate (quarterly)	EM1510467	-	5,660	-	104	-	1,490	-	-	-	-	-	-	72	-	33	-	-	1,090	-	1,800
27/06/2016	Landfill leachate (quarterly)	EM1607483	-	-	2,790	-	44	-	1,370	-	-	-	-	-	-	146	-	36	-	-	525	-
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	1,870	84	84	1,380	1,380	-	-	-	-	-	118	118	34	34	-	596	596	909
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	3,330	462	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/01/2017	Landfill leachate (quarterly)	EM1700066	-	-	3,670	-	70	-	2,130	-	-	-	-	-	-	103	-	36	-	-	717	-
23/03/2017	DWM230317	EM1703524	-	-	5,520	371	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,070	-
8/05/2017	Landfill leachate (quarterly)	EM1705724	-	-	5,470	40	-	2,050	-	-	253	2,350	<1	2,610	-	96	-	49	602	-	1,360	1,910
14/06/2017	DWM140617	EM1707709	-	-	5,190	612	-	-	-	-	379	2,100	<1	2,480	-	48	-	25	476	-	1,070	1,610
28/08/2017	Quarterly leachate samples	EM1711607	-	-	4,450	80	-	1,190	-	-	66	2,140	<1	2,200	-	40	-	21	322	-	734	1,160
6/09/2017	DWM060917	EM1712174	-	-	3,760	855	-	-	-	-	-	-	-	-	-	-	-	-	-	-	711	-
11/09/2017	DWM110917	EM1712414	-	-	3,730	170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,010	-
20/09/2017	DWM200917	EM1712965	-	-	4,990	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	889	-
12/10/2017	DWM121017	EM1714085	-	-	4,110	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	827	-
25/06/2018	Landfill Leachate	EM1810261	-	-	-	56	-	-	-	0.006	195	2,740	<1	2,930	-	36	-	17	386	-	876	1,470
19/09/2018	Leachate	EM1815239	-	-	-	96	-	-	-	<0.004	44	2,240	<1	2,290	-	54	-	27	354	-	879	1,460
20/09/2018	Landfill Leachate	EM1815253	-	3,380	-	157	-	-	-	-	-	-	-	-	-	-	-	-	-	-	821	-
15/11/2018	Weekly Leachate	EM1818439	-	9,690	-	46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,980	-
12/12/2018	Landfill Leachate	EM1820185	-	-	-	48	-	-	-	0.004	418	5,540	<1	5,960	-	31	-	24	786	-	1,800	3,310
20/03/2019	Landfill Leachate	EM1904168	-	-	-	119	-	-	-	0.008	<1	5,120	<1	5,120	-	53	-	52	1,890	-	3,890	6,060
26/06/2019	Landfill Leachate	EM1910175	-	-	-	72	-	-	-	0.005	<1	4,300	<1	4,300	-	58	-	30	621	-	1,450	2,560
9/09/2019	Landfill Leachate	EM1915222	-	-	-	37	-	-	-	0.010	<1	2,870	<1	2,870	-	36	-	20	418	-	1,100	1,600
11/09/2019	Landfill Leachate	EM1915222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/12/2019	Landfill Leachate	EM1921873	4,300	10,100	-	131	-	-	-	0.006	<1	6,170	<1	6,170	-	38	-	30	927	-	2,180	3,970
17/12/2019	Landfill Leachate	EM1921873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/03/2020	Landfill Leachate	EM2005146	-	9,540	-	152	-	-	-	-	197	3,840	<1	4,030	-	88	-	59	891	-	2,270	4,140
21/04/2020	Landfill Leachate	EM2006671	-	4,060	-	123	-	-	-	-	<1	1,870	<1	1,870	-	61	-	34	332	-	894	1,520
21/04/2020	Leachate Pond	EM2006671	-	4,550	-	122	-	-	-	-	<1	1,880	<1	1,880	-	60	-	35	400	-	1,050	1,520
11/05/2020	Landfill Leachate	EM2007860	-	5,960	-	103	-	-	-	-	<1	2,270	<1	2,270	-	64	-	38	554	-	1,270	2,050
18/05/2020	Landfill Leachate	EM2008320	-	5,670	-	205	-	-	-	-	<1	2,700	<1	2,700	-	66	-	42	572	-	1,400	2,460
16/06/2020	Landfill Leachate	EM2010246	-	4,740	-	100	-	-	-	<0.004	<1	2,430	<1	2,430	-	53	-	34	343	-	934	1,580
16/06/2020	Landfill Leachate	EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/07/2020	Landfill Leachate	EM2012818	-	4,630	-	42	-	-	-	-	<1	2,380	<1	2,380	-	47	-	31	378	-	1,040	1,660
26/08/2020	Dulverton Leachate	EM2014788	-	3,890	-	156	-	-	-	-	<1	1,890	<1	1,890	-	32	-	20	323	-	858	1,400
29/09/2020	Landfill Leachate	EM2017090	-	3,700	-	136	-	-	-	<0.004	<1	2,210	<1	2,210	-	89	-	45	315	-	880	1,430
29/09/2020	Landfill Leachate	EM2017090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/10/2020	Landfill Leachate	EM2019050	-	3,090	-	84	-	-	-	-	<1	1,690	<1	1,690	-	86	-	36	214	-	538	896
7/12/2020	Landfill Leachate	EM2021896	-	4,350	-	71	-	-	-	<0.004	<1	2,400	<1	2,400	-	96	-	52	367	-	995	1,540
7/12/2020	Landfill Leachate	EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/05/2021	Landfill Leachate	EM2108650	-	6,060	-	72	-	-	-	0.008	39	2,070	<1	2,110	-	72	-	58	480	-	1,630	2,830
22/06/2021	Landfill Leachate	EM2111910	-	5,080	-	63	-	-	-	<0.010	<1	2,620	<1	2,620	-	77	-	48	418	-	1,130	1,710
20/07/2021	Landfill Leachate	EM2114040	-	5,610	-	80	-	-	-	-	<1	3,380	<1	3,380	-	77	-	46	399	-	884	1,480
18/08/2021	Landfill Leachate	EM2116503	-	3,770	-	42	-	-	-	-	<1	634	<1	634	-	81	-	44	383	-	840	1,180
18/10/2021	Landfill Leachate	EM2120767	-	3,470	-	68	-	-	-	-	<1	2,070	<1	2,070	-	49	-	30	305	-	673	1,100
17/11/2021	Pomona (landfill leachate)	EM2123125	-	3,500	-	24	-	-	-	-	<1	2,020	<1	2,020	-	58	-	32	321	-	672	1,070
6/12/2021	Landfill Leachate	EM2124673	-	11,800	-	420	-	-	-	0.043	<1	10,800	<1	10,800	-	94	-	75	1,280	-	2,000	3,830

Table 6 - Historical Leachate

									Minor Ions													
			Chloride (filtered)	Sulfate (filtered)	Sulfate as S (filtered)	Fluoride	Cations Total	Anions Total	Ionic Balance	Iodide	Thiosulfate as S2O3 2-	Thiosulfate as S2O3 2- (filtered)	Thiosulfate	Bromide	Sulfide	Sulfide (filtered)	Ammonium (as N)	Ammonia as N	Ammonia as N (filtered)	Nitrate (as N)	Nitrate (as N) (filtered)	Nitrite (as N)
Table 6: Historical Leachate			mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	%	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			1	1	1	0.1	0.01	0.01	0.01	10	2	2	2	0.01	0.1	0.1	0.01	0.01	0.01	0.01	0.01	0.01
ANZECC 2000 - Stock Watering				1,000	333	2														90	90	9.1
ANZG (2018) - FW - 95% (updated 26 July 2021)																		0.9	0.9	2.4	2.4	
ADWG 2011 Health (v3.6 updated 2021)				500		1.5				500										11.29	11.29	0.91
ANZECC 2000 Irrigation - Long-term Trigger Values			350			1																
ANZECC 2000 Irrigation - Short-term Trigger Values						2																
Date	**Field ID**	**Lab Report Number**																				
10/09/2013	LEACHATE POND 2	EM1309644	-	-	<1	-	-	-	-	-	-	-	<2	-	5	-	-	306	-	<0.01	-	<0.01
18/11/2013	Landfill leachate (quarterly)	EM1312183	-	-	<1	-	-	-	-	-	-	-	<2	-	3.2	-	-	141	-	0.02	-	<0.01
4/03/2014	Landfill leachate (quarterly)	EM1401975	-	-	37	-	-	-	-	-	-	-	<2	-	<0.1	-	-	52.7	-	<0.01	-	<0.01
2/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-	-	-	-	-	-	-	-	3	-	0.4	-	-	236	-	-	-	-
17/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.08	-	0.14
2/09/2014	Landfill leachate (quarterly)	EM1408979	-	-	<1	-	-	-	-	-	-	-	10	-	12.8	-	-	683	-	0.27	-	<0.01
1/06/2015	Landfill leachate (quarterly)	EM1510467	-	-	22	-	-	-	-	-	-	-	18	-	1	-	-	451	-	0.63	-	<0.01
27/06/2016	Landfill leachate (quarterly)	EM1607483	733	138	-	-	-	-	-	-	-	11	-	-	-	28.5	-	-	193	-	0.05	-
22/09/2016	Landfill leachate (quarterly)	EM1611287	909	9	-	-	-	-	-	-	-	53	-	-	7.2	7.2	-	250	250	<0.01	<0.01	<0.01
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/01/2017	Landfill leachate (quarterly)	EM1700066	1,130	81	-	-	-	-	-	-	-	4	-	-	-	8.2	-	-	177	-	0.18	-
23/03/2017	DWM230317	EM1703524	-	275	-	-	-	-	-	-	6	-	-	-	<0.1	-	-	241	-	167	-	0.14
8/05/2017	Landfill leachate (quarterly)	EM1705724	-	25	-	-	110	106	1.55	-	7	-	-	-	<0.1	-	-	372	-	<0.10	-	2.57
14/06/2017	DWM140617	EM1707709	-	18	-	<0.1	90.1	95.3	2.85	-	6	-	-	-	<0.2	-	-	377	-	<0.10	-	1.88
28/08/2017	Quarterly leachate samples	EM1711607	-	10	-	-	75.5	76.9	0.91	-	6	-	-	-	0.5	-	-	443	-	<0.01	-	0.02
6/09/2017	DWM060917	EM1712174	-	66	-	-	-	-	-	-	4	-	-	-	0.2	-	-	296	-	<0.20	-	0.59
11/09/2017	DWM110917	EM1712414	-	68	-	-	-	-	-	-	6	-	-	-	<0.1	-	-	298	-	0.07	-	0.07
20/09/2017	DWM200917	EM1712965	-	5	-	-	-	-	-	-	6	-	-	-	0.5	-	-	446	-	<0.01	-	<0.01
12/10/2017	DWM121017	EM1714085	-	7	-	-	-	-	-	-	18	-	-	-	3.1	-	-	392	-	0.01	-	<0.01
25/06/2018	Landfill Leachate	EM1810261	-	93	-	-	95.5	102	3.28	-	-	-	-	-	-	-	-	621	-	0.02	-	<0.01
19/09/2018	Leachate	EM1815239	-	<1	-	-	84.4	86.9	1.49	-	-	-	-	-	-	-	-	451	-	<0.01	-	<0.01
20/09/2018	Landfill Leachate	EM1815253	-	2	-	-	-	-	-	-	<20	-	-	-	0.1	-	-	442	-	0.02	-	<0.01
15/11/2018	Weekly Leachate	EM1818439	-	11	-	-	-	-	-	-	<40	-	-	-	1.9	-	-	848	-	0.29	-	0.02
12/12/2018	Landfill Leachate	EM1820185	-	13	-	-	160	213	14.1	-	-	-	-	-	-	-	-	815	-	0.28	-	<0.05
20/03/2019	Landfill Leachate	EM1904168	-	<10	-	-	293	273	3.47	-	-	-	-	-	-	-	-	960	-	0.41	-	0.09
26/06/2019	Landfill Leachate	EM1910175	-	1	-	-	137	158	7.23	-	-	-	-	-	-	-	-	736	-	0.22	-	<0.01
9/09/2019	Landfill Leachate	EM1915222	-	40	-	-	699	103	2.25	-	-	-	-	-	-	-	-	513	-	0.02	-	<0.01
11/09/2019	Landfill Leachate	EM1915222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/12/2019	Landfill Leachate	EM1921873	-	<1	-	-	203	235	7.41	-	<20	-	-	-	8.1	-	-	1,120	-	0.27	-	<0.01
17/12/2019	Landfill Leachate	EM1921873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/03/2020	Landfill Leachate	EM2005146	-	<20	-	-	170	197	7.51	-	<20	-	-	-	2.0	-	-	546	-	0.13	-	<0.01
21/04/2020	Landfill Leachate	EM2006671	-	58	-	-	73.9	81.4	4.85	-	<20	-	-	-	2.2	-	-	290	-	-	-	-
21/04/2020	Leachate Pond	EM2006671	-	36	-	-	81.1	81.2	0.05	-	<20	-	-	-	2.1	-	-	271	-	-	-	-
11/05/2020	Landfill Leachate	EM2007860	-	50	-	-	101	104	1.75	-	28	-	-	-	3.9	-	-	349	-	-	-	-
18/05/2020	Landfill Leachate	EM2008320	-	64	-	-	108	125	7.35	-	8	-	-	-	2.8	-	-	355	-	-	-	-
16/06/2020	Landfill Leachate	EM2010246	-	83	-	-	85.4	94.8	5.25	-	28	-	-	-	<0.5	-	-	428	-	2.66	-	0.76
16/06/2020	Landfill Leachate	EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/07/2020	Landfill Leachate	EM2012818	-	61	-	-	85.8	95.6	5.45	-	<20	-	-	-	0.8	-	-	364	-	-	-	-
26/08/2020	Dulverton Leachate	EM2014788	-	8	-	-	72.2	77.4	3.47	-	20	-	-	-	3.3	-	-	328	-	-	-	-
29/09/2020	Landfill Leachate	EM2017090	-	66	-	-	80.6	85.9	3.18	-	<10	-	-	-	<0.1	-	-	366	-	0.05	-	<0.01
29/09/2020	Landfill Leachate	EM2017090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/10/2020	Landfill Leachate	EM2019050	-	16	-	-	45.6	59.4	13.2	-	98	-	-	-	14.8	-	-	132	-	-	-	-
7/12/2020	Landfill Leachate	EM2021896	-	<5	-	-	86.2	91.4	2.96	-	28	-	-	-	2.6	-	-	342	-	0.02	-	<0.01
7/12/2020	Landfill Leachate	EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/05/2021	Landfill Leachate	EM2108650	-	7	-	-	114	122	3.56	-	14	-	-	-	0.4	-	-	311	-	0.02	-	<0.01
22/06/2021	Landfill Leachate	EM2111910	-	24	-	-	108	101	3.25	-	28	-	-	-	1.0	-	-	564	-	0.01	-	<0.01
20/07/2021	Landfill Leachate	EM2114040	-	31	-	-	110	110	0.22	-	14	-	-	-	1.5	-	-	745	-	-	-	-
18/08/2021	Landfill Leachate	EM2116503	-	<1	-	-	54.0	46.0	8.05	-	560	-	-	-	11.9	-	-	521	-	-	-	-
18/10/2021	Landfill Leachate	EM2120767	-	<1	-	-	66.6	72.4	4.22	-	28	-	-	-	0.2	-	-	344	-	-	-	-
17/11/2021	Pomona (landfill leachate)	EM2123125	-	<1	-	-	80.5	70.5	6.54	-	56	-	-	-	1.5	-	-	358	-	-	-	-
6/12/2021	Landfill Leachate	EM2124673	-	30	-	-	276	324	8.00	-	84	-	-	-	<0.5	-	-	2,030	-	0.45	-	<0.10

Table 6 - Historical Leachate

			Nutrients												Organic Indicators						
			Nitrite (as N) (filtered)	Nitrogen (Total Oxidised) (as N)	Nitrogen (Total Oxidised) (as N) (filtered)	Nitrogen (Total)	Nitrogen (Total) (filtered)	Kjeldahl Nitrogen Total	Kjeldahl Nitrogen Total (filtered)	Reactive Phosphorus as P	Phosphorus filterable reactive (P)	Phosphorus (Total)	Phosphorus (Total) (filtered)	Sulfite as SO3-	Sulfite as SO3- (filtered)	Sulfur (Total Oxidised as SO4)	Total Oxidised Sulfur (as S)	BOD	BOD (filtered)	Dissolved Organic Carbon	Aluminium	Aluminium (filtered)
Table 6: Historical Leachate			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.01	0.01	0.01	0.1	0.1	0.1	0.1	0.01	0.01	0.01	0.01	2	2	10	10	2	2	1	0.01	0.01
ANZECC 2000 - Stock Watering			9.1																		5	5
ANZG (2018) - FW - 95% (updated 26 July 2021)																					0.055	0.055
ADWG 2011 Health (v3.6 updated 2021)			0.91																			
ANZECC 2000 Irrigation - Long-term Trigger Values						5	5					0.05	0.05								5	5
ANZECC 2000 Irrigation - Short-term Trigger Values						25	25					0.8	0.8								20	20
Date	**Field ID**	**Lab Report Number**																				
10/09/2013	LEACHATE POND 2	EM1309644	-	<0.01	-	399	-	399	-	-	-	4.04	-	10	-	-	-	1,240	-	-	1.23	-
18/11/2013	Landfill leachate (quarterly)	EM1312183	-	0.02	-	231	-	231	-	-	-	4.14	-	10	-	-	-	140	-	-	0.33	-
4/03/2014	Landfill leachate (quarterly)	EM1401975	-	<0.01	-	99.9	-	99.9	-	-	-	2.94	-	<2	-	-	-	74	-	-	0.26	-
2/06/2014	Landfill leachate (quarterly)	EM1405379	-	0.2	-	247	-	247	-	-	-	3.7	-	4	-	-	-	-	-	-	0.4	-
17/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	149	-	-	-	-
2/09/2014	Landfill leachate (quarterly)	EM1408979	-	0.27	-	753	-	753	-	-	-	9.48	-	29	-	-	-	217	-	-	1.19	-
1/06/2015	Landfill leachate (quarterly)	EM1510467	-	0.63	-	522	-	521	-	-	-	9.55	-	4	-	-	-	2	-	-	3.47	-
27/06/2016	Landfill leachate (quarterly)	EM1607483	<0.01	-	0.05	-	328	-	328	-	-	-	2.35	-	6	-	-	-	56	-	-	0.67
22/09/2016	Landfill leachate (quarterly)	EM1611287	<0.01	<0.01	<0.01	403	403	403	403	-	-	4.42	4.42	<2	<2	-	-	125	125	-	0.61	0.61
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/01/2017	Landfill leachate (quarterly)	EM1700066	<0.01	-	0.18	-	248	-	248	-	-	-	4.43	-	<2	-	-	-	203	-	-	0.54
23/03/2017	DWM230317	EM1703524	-	167	-	445	-	278	-	-	-	3.44	-	<2	-	-	-	157	-	-	-	-
8/05/2017	Landfill leachate (quarterly)	EM1705724	-	2.63	-	468	-	465	-	-	-	5.89	-	<2	-	-	-	32	-	-	0.90	-
14/06/2017	DWM140617	EM1707709	-	1.68	-	530	-	528	-	-	-	10.1	-	<2	-	-	-	89	-	-	-	-
28/08/2017	Quarterly leachate samples	EM1711607	-	0.02	-	461	-	461	-	-	-	4.69	-	<2	-	-	-	92	-	-	1.16	-
6/09/2017	DWM060917	EM1712174	-	0.68	-	362	-	361	-	-	-	5.98	-	<2	-	-	-	50	-	-	-	-
11/09/2017	DWM110917	EM1712414	-	0.14	-	313	-	313	-	-	-	3.16	-	<2	-	-	-	22	-	-	-	-
20/09/2017	DWM200917	EM1712965	-	<0.01	-	562	-	562	-	-	-	6.23	-	<2	-	-	-	263	-	-	-	-
12/10/2017	DWM121017	EM1714085	-	0.01	-	416	-	416	-	-	-	4.04	-	2	-	-	-	169	-	-	-	-
25/06/2018	Landfill Leachate	EM1810261	-	0.02	-	627	-	627	-	4.36	4.36	5.31	-	-	-	-	-	214	-	568	1.37	0.68
19/09/2018	Leachate	EM1815239	-	<0.01	-	531	-	531	-	4.15	-	4.68	4.61	-	-	-	-	112	-	426	0.88	0.64
20/09/2018	Landfill Leachate	EM1815253	-	0.02	-	655	-	655	-	-	-	13.5	-	<20	-	-	-	148	-	-	-	-
15/11/2018	Weekly Leachate	EM1818439	-	0.31	-	1,560	-	1,560	-	-	-	195	-	<40	-	-	-	370	-	-	-	-
12/12/2018	Landfill Leachate	EM1820185	-	0.28	-	1,030	-	1,030	-	10.6	-	24.7	8.53	-	-	-	-	700	-	1,290	2.12	2.22
20/03/2019	Landfill Leachate	EM1904168	-	0.50	-	1,550	-	1,550	-	13.6	-	42.7	-	-	-	-	-	753	-	2,880	4.09	3.70
26/06/2019	Landfill Leachate	EM1910175	-	0.22	-	1,020	-	1,020	-	6.15	-	8.34	-	-	-	-	-	335	-	951	2.54	1.13
9/09/2019	Landfill Leachate	EM1915222	-	0.02	-	543	-	543	-	4.02	-	4.99	-	-	-	-	-	-	-	250	0.64	0.60
11/09/2019	Landfill Leachate	EM1915222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	109	-	-	-	-
17/12/2019	Landfill Leachate	EM1921873	-	0.27	-	1,280	-	1,280	-	10.4	-	12.4	-	<20	-	-	20	406	-	1,100	1.37	1.40
17/12/2019	Landfill Leachate	EM1921873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/03/2020	Landfill Leachate	EM2005146	-	0.13	-	747	-	747	-	8.34	-	14.8	-	<20	-	-	20	206	-	518	1.44	1.41
21/04/2020	Landfill Leachate	EM2006671	-	<0.01	-	356	-	356	-	-	-	6.20	-	<20	-	180	-	160	-	-	-	-
21/04/2020	Leachate Pond	EM2006671	-	<0.01	-	345	-	345	-	-	-	6.52	-	<20	-	180	-	138	-	-	-	-
11/05/2020	Landfill Leachate	EM2007860	-	0.02	-	380	-	380	-	-	-	6.80	-	<20	-	130	-	105	-	-	-	-
18/05/2020	Landfill Leachate	EM2008320	-	0.07	-	403	-	403	-	-	-	7.28	-	4	-	170	-	174	-	-	-	-
16/06/2020	Landfill Leachate	EM2010246	-	3.42	-	501	-	498	-	3.00	-	4.75	-	<20	-	120	-	138	-	318	0.46	0.42
16/06/2020	Landfill Leachate	EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/07/2020	Landfill Leachate	EM2012818	-	0.03	-	429	-	429	-	-	-	5.39	-	<20	-	110	-	126	-	-	-	-
26/08/2020	Dulverton Leachate	EM2014788	-	<0.01	-	413	-	413	-	-	-	5.57	-	5	-	90	-	105	-	-	-	-
29/09/2020	Landfill Leachate	EM2017090	-	0.05	-	430	-	430	-	2.56	-	3.94	-	<10	-	100	-	138	-	264	0.82	0.32
29/09/2020	Landfill Leachate	EM2017090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/10/2020	Landfill Leachate	EM2019050	-	<0.01	-	278	-	278	-	-	-	8.13	-	30	-	100	-	418	-	-	-	-
7/12/2020	Landfill Leachate	EM2021896	-	0.02	-	419	-	419	-	5.35	-	8.03	-	<20	-	80	-	322	-	454	0.67	0.49
7/12/2020	Landfill Leachate	EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/05/2021	Landfill Leachate	EM2108650	-	0.02	-	370	-	370	-	1.93	-	3.94	-	<10	-	80	-	72	-	416	0.35	0.27
22/06/2021	Landfill Leachate	EM2111910	-	0.01	-	558	-	558	-	3.28	-	5.78	-	10	-	90	-	89	-	353	0.66	0.44
20/07/2021	Landfill Leachate	EM2114040	-	2.41	-	790	-	788	-	-	-	7.85	-	<10	-	80	-	298	-	-	-	-
18/08/2021	Landfill Leachate	EM2116503	-	<0.01	-	614	-	614	-	-	-	9.42	-	175	-	<100	-	154	-	-	-	-
18/10/2021	Landfill Leachate	EM2120767	-	<0.01	-	400	-	400	-	-	-	5.56	-	<20	-	<100	-	91	-	-	-	-
17/11/2021	Pomona (landfill leachate)	EM2123125	-	<0.01	-	404	-	404	-	-	-	5.52	-	20	-	60	-	56	-	-	-	-
6/12/2021	Landfill Leachate	EM2124673	-	0.45	-	2,170	-	2,170	-	15.8	-	16.6	-	35	-	310	-	508	-	2,030	4.22	4.00

Table 6 - Historical Leachate

			Metals																		
			Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Chromium (III+VI) (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Selenium	Selenium (filtered)
Table 6: Historical Leachate			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.001	0.001	0.0001	0.0001	0.001	0.001	0.001	0.001	0.05	0.05	0.001	0.001	0.001	0.001	0.0001	0.0001	0.001	0.001	0.01	0.01
ANZECC 2000 - Stock Watering			0.5	0.5	0.01	0.01	1	1	1	1			0.1	0.1			0.002	0.002	1	1	0.02	0.02
ANZG (2018) - FW - 95% (updated 26 July 2021)			0.013	0.013	0.0002	0.0002	0.001	0.001	0.0014	0.0014			0.0034	0.0034	1.9	1.9	0.0006	0.0006	0.011	0.011	0.011	0.011
ADWG 2011 Health (v3.6 updated 2021)			0.01	0.01	0.002	0.002			2	2			0.01	0.01	0.5	0.5	0.001	0.001	0.02	0.02	0.01	0.01
ANZECC 2000 Irrigation - Long-term Trigger Values			0.1	0.1	0.01	0.01	0.1	0.1	0.2	0.2	0.2	0.2	2	2	0.2	0.2	0.002	0.002	0.2	0.2	0.02	0.02
ANZECC 2000 Irrigation - Short-term Trigger Values			2	2	0.05	0.05	1	1	5	5	10	10	5	5	10	10	0.002	0.002	2	2	0.05	0.05
Date	**Field ID**	**Lab Report Number**																				
10/09/2013	LEACHATE POND 2	EM1309644	0.025	-	0.0006	-	0.081	-	0.023	-	10.9	-	0.016	-	0.726	-	<0.0001	-	0.066	-	<0.01	-
18/11/2013	Landfill leachate (quarterly)	EM1312183	0.014	-	0.0002	-	0.062	-	0.558	-	2.84	-	0.036	-	0.22	-	<0.0001	-	0.044	-	<0.01	-
4/03/2014	Landfill leachate (quarterly)	EM1401975	0.022	-	<0.0001	-	0.066	-	0.786	-	2.09	-	0.011	-	0.088	-	<0.0001	-	0.075	-	<0.01	-
2/06/2014	Landfill leachate (quarterly)	EM1405379	0.02	-	0.0002	-	0.11	-	0.915	-	4.76	-	0.014	-	0.343	-	<0.001	-	0.067	-	<0.01	-
17/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2/09/2014	Landfill leachate (quarterly)	EM1408979	0.062	-	0.0003	-	0.244	-	0.866	-	4.89	-	0.014	-	0.516	-	<0.0001	-	0.093	-	<0.01	-
1/06/2015	Landfill leachate (quarterly)	EM1510467	0.047	-	0.0003	-	0.334	-	1.01	-	6.01	-	0.014	-	0.311	-	<0.0001	-	0.1	-	<0.01	-
27/06/2016	Landfill leachate (quarterly)	EM1607483	-	0.036	-	0.0006	-	0.131	-	0.664	-	4.40	-	0.028	-	0.583	-	<0.0001	-	0.048	-	<0.01
22/09/2016	Landfill leachate (quarterly)	EM1611287	0.036	0.036	0.0003	0.0003	0.143	0.143	0.141	0.141	3.59	3.59	0.011	0.011	0.456	0.456	<0.0001	<0.0001	0.051	0.051	<0.01	<0.01
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/01/2017	Landfill leachate (quarterly)	EM1700066	-	0.036	-	0.0002	-	0.155	-	0.191	-	3.83	-	0.012	-	0.354	-	<0.0001	-	0.050	-	<0.01
23/03/2017	DWM230317	EM1703524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8/05/2017	Landfill leachate (quarterly)	EM1705724	0.104	-	0.0002	-	0.352	-	0.609	-	8.85	-	0.025	-	0.347	-	<0.0001	-	0.122	-	<0.01	-
14/06/2017	DWM140617	EM1707709	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28/08/2017	Quarterly leachate samples	EM1711607	0.064	-	0.0003	-	0.219	-	0.072	-	4.41	-	0.030	-	0.326	-	<0.0001	-	0.055	-	<0.01	-
6/09/2017	DWM060917	EM1712174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/09/2017	DWM110917	EM1712414	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2017	DWM200917	EM1712965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/10/2017	DWM121017	EM1714085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/06/2018	Landfill Leachate	EM1810261	0.105	0.096	0.0002	0.0002	0.313	0.160	0.040	0.006	5.58	3.12	0.010	0.002	0.312	0.298	<0.0001	<0.0001	0.064	0.052	<0.01	<0.01
19/09/2018	Leachate	EM1815239	0.100	0.096	0.0004	0.0003	0.281	0.140	0.471	0.165	6.73	5.39	0.049	0.028	0.316	0.303	<0.0001	<0.0001	0.072	0.062	<0.01	<0.01
20/09/2018	Landfill Leachate	EM1815253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15/11/2018	Weekly Leachate	EM1818439	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/12/2018	Landfill Leachate	EM1820185	0.241	0.200	0.0004	0.0003	0.637	0.573	0.706	0.072	5.96	3.52	0.076	0.007	0.322	0.335	<0.0001	<0.0001	0.145	0.167	<0.01	<0.01
20/03/2019	Landfill Leachate	EM1904168	0.422	0.409	<0.0010	<0.0005	1.41	1.30	0.035	0.014	9.07	4.18	0.011	0.006	0.460	0.353	<0.0001	<0.0001	0.265	0.260	<0.10	<0.05
26/06/2019	Landfill Leachate	EM1910175	0.133	0.119	0.0004	<0.0002	0.387	0.392	4.14	0.220	5.96	2.00	0.025	0.004	0.415	0.419	<0.0001	<0.0001	0.100	0.106	<0.02	<0.02
9/09/2019	Landfill Leachate	EM1915222	0.073	0.072	<0.0002	<0.0002	0.240	0.250	0.049	0.029	1.73	2.04	0.003	0.002	0.356	0.348	<0.0001	<0.0001	0.079	0.074	<0.02	<0.02
11/09/2019	Landfill Leachate	EM1915222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/12/2019	Landfill Leachate	EM1921873	0.152	0.150	0.0001	<0.0005	0.481	0.563	0.362	0.146	5.09	2.75	0.016	<0.005	0.522	0.466	<0.0001	<0.0001	0.139	0.155	<0.01	<0.05
17/12/2019	Landfill Leachate	EM1921873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/03/2020	Landfill Leachate	EM2005146	0.164	0.178	<0.0005	<0.0005	0.538	0.601	0.637	0.047	6.08	3.97	0.028	0.010	0.785	0.727	<0.0001	<0.0001	0.149	0.176	<0.05	<0.05
21/04/2020	Landfill Leachate	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21/04/2020	Leachate Pond	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/05/2020	Landfill Leachate	EM2007860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/05/2020	Landfill Leachate	EM2008320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16/06/2020	Landfill Leachate	EM2010246	0.055	0.055	0.0003	<0.0002	0.177	0.139	0.115	0.108	5.80	3.71	0.019	0.016	0.507	0.499	<0.0001	<0.0001	0.062	0.063	<0.02	<0.02
16/06/2020	Landfill Leachate	EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/07/2020	Landfill Leachate	EM2012818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26/08/2020	Dulverton Leachate	EM2014788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29/09/2020	Landfill Leachate	EM2017090	0.037	0.032	<0.0005	<0.0005	0.122	0.099	0.205	0.418	8.82	5.99	0.007	0.009	0.515	0.454	<0.0001	<0.0001	0.049	0.060	<0.05	<0.05
29/09/2020	Landfill Leachate	EM2017090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/10/2020	Landfill Leachate	EM2019050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7/12/2020	Landfill Leachate	EM2021896	0.062	0.052	0.0009	0.0002	0.184	0.122	0.704	0.276	4.06	1.96	0.021	0.005	0.708	0.632	<0.0001	<0.0001	0.074	0.073	<0.01	<0.01
7/12/2020	Landfill Leachate	EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/05/2021	Landfill Leachate	EM2108650	0.055	0.054	<0.0001	<0.0001	0.170	0.097	0.001	0.001	7.26	4.28	0.001	<0.001	0.246	0.229	<0.0001	<0.0001	0.082	0.069	<0.01	<0.01
22/06/2021	Landfill Leachate	EM2111910	0.057	0.049	0.0001	<0.0001	0.213	0.157	0.604	0.031	3.71	0.98	0.023	0.002	0.342	0.282	<0.0001	<0.0001	0.072	0.064	<0.01	<0.01
20/07/2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/08/2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/10/2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/11/2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/12/2021	Landfill Leachate	EM2124673	0.256	0.258	<0.0010	<0.0010	1.24	1.12	0.427	0.378	82.0	17.7	0.027	0.012	0.830	0.602	<0.0010	<0.0010	0.256	0.231	<0.10	<0.10

Table 6 - Historical Leachate

			BTEXN																	
Table 6: Historical Leachate	Zinc	Zinc (filtered)	Benzene	Benzene (filtered)	Toluene	Toluene (filtered)	Ethylbenzene	Ethylbenzene (filtered)	Xylene (o)	Xylene (o) (filtered)	Xylene (m & p)	Xylene (m & p) (filtered)	Xylene Total	Xylene Total (filtered)	BTEX (Sum of Total) - Lab Calc	BTEX (Sum of Total) - Lab Calc (filtered)	Naphthalene (BTEXN suite)	Naphthalene (BTEXN suite) (filtered)	Naphthalene	Naphthalene (filtered)
	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.005	0.005	1	1	2	2	2	2	2	2	2	2	2	2	1	1	5	5	1	1
ANZECC 2000 - Stock Watering	20	20																		
ANZG (2018) - FW - 95% (updated 26 July 2021)	0.008	0.008	950	950	180	180	80	80	350	350							16	16	16	16
ADWG 2011 Health (v3.6 updated 2021)			1	1	800	800	300	300					600	600						
ANZECC 2000 Irrigation - Long-term Trigger Values	2	2																		
ANZECC 2000 Irrigation - Short-term Trigger Values	5	5																		

Date	Field ID	Lab Report Number																		
10/09/2013	LEACHATE POND 2	EM1309644	0.864	-	<1	-	2	-	<2	-	<2	-	<2	-	<2	-	2	-	<5	-	<5	-
18/11/2013	Landfill leachate (quarterly)	EM1312183	0.977	-	<1	-	4	-	<2	-	<2	-	<2	-	<2	-	4	-	<5	-	<1	-
4/03/2014	Landfill leachate (quarterly)	EM1401975	1.31	-	<1	-	<2	-	<2	-	<2	-	<2	-	<2	-	<1	-	<5	-	<1	-
2/06/2014	Landfill leachate (quarterly)	EM1405379	1.18	-	2	-	28	-	9	-	10	-	22	-	32	-	71	-	<5	-	<10	-
17/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2/09/2014	Landfill leachate (quarterly)	EM1408979	0.456	-	<1	-	6	-	2	-	5	-	10	-	15	-	23	-	<5	-	<1	-
1/06/2015	Landfill leachate (quarterly)	EM1510467	0.839	-	<1	-	<2	-	<2	-	<2	-	<2	-	<2	-	<1	-	<5	-	<1	-
27/06/2016	Landfill leachate (quarterly)	EM1607483	-	2.34	-	<1	-	9	-	3	-	4	-	9	-	13	-	25	-	<5	-	<1.0
22/09/2016	Landfill leachate (quarterly)	EM1611287	0.237	0.237	<1	<1	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<1	<1	<5	<5	<1	<1.0
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/01/2017	Landfill leachate (quarterly)	EM1700066	-	0.161	-	<1	-	4	-	<2	-	<2	-	<2	-	<2	-	4	-	<5	-	<1.0
23/03/2017	DWM230317	EM1703524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8/05/2017	Landfill leachate (quarterly)	EM1705724	0.545	-	<1	-	<2	-	<2	-	<2	-	<2	-	<2	-	<1	-	<5	-	<1.0	-
14/06/2017	DWM140617	EM1707709	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28/08/2017	Quarterly leachate samples	EM1711607	0.573	-	<1	-	<2	-	<2	-	<2	-	2	-	2	-	2	-	<5	-	<1.3	-
6/09/2017	DWM060917	EM1712174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/09/2017	DWM110917	EM1712414	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2017	DWM200917	EM1712965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/10/2017	DWM121017	EM1714085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/06/2018	Landfill Leachate	EM1810261	0.266	0.152	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19/09/2018	Leachate	EM1815239	0.690	0.560	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2018	Landfill Leachate	EM1815253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15/11/2018	Weekly Leachate	EM1818439	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/12/2018	Landfill Leachate	EM1820185	0.927	0.262	<1	-	2	-	<2	-	<2	-	<2	-	<2	-	2	-	-	-	<5	-
20/03/2019	Landfill Leachate	EM1904168	0.366	0.132	1	-	4	-	<2	-	<2	-	<2	-	<2	-	5	-	-	-	<2	-
26/06/2019	Landfill Leachate	EM1910175	0.781	0.342	<1	-	3	-	<2	-	<2	-	2	-	2	-	5	-	-	-	<2	-
9/09/2019	Landfill Leachate	EM1915222	0.199	0.089	<1	-	3	-	<2	-	<2	-	3	-	3	-	6	-	-	-	<2	-
11/09/2019	Landfill Leachate	EM1915222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/12/2019	Landfill Leachate	EM1921873	0.373	0.331	5	-	9	-	<2	-	5	-	5	-	10	-	24	-	-	-	<1.0	-
17/12/2019	Landfill Leachate	EM1921873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/03/2020	Landfill Leachate	EM2005146	0.663	0.278	<1	-	10	-	4	-	5	-	10	-	15	-	29	-	-	-	<4	-
21/04/2020	Landfill Leachate	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21/04/2020	Leachate Pond	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/05/2020	Landfill Leachate	EM2007860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/05/2020	Landfill Leachate	EM2008320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16/06/2020	Landfill Leachate	EM2010246	0.285	0.312	<1	-	4	-	3	-	5	-	9	-	16	-	23	-	-	-	<2	-
16/06/2020	Landfill Leachate	EM2010246	-	-	-	-	-	-	-	-	6	-	10	-	-	-	-	-	-	-	-	-
22/07/2020	Landfill Leachate	EM2012818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26/08/2020	Dulverton Leachate	EM2014788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29/09/2020	Landfill Leachate	EM2017090	0.163	0.309	1	-	3	-	5	-	16	-	31	-	49	-	58	-	-	-	<2	-
29/09/2020	Landfill Leachate	EM2017090	-	-	-	-	-	-	6	-	-	-	33	-	-	-	-	-	-	-	-	-
27/10/2020	Landfill Leachate	EM2019050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7/12/2020	Landfill Leachate	EM2021896	0.417	0.309	<1	-	<2	-	<2	-	<2	-	<2	-	<2	-	<1	-	-	-	<2	-
7/12/2020	Landfill Leachate	EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/05/2021	Landfill Leachate	EM2108650	0.023	0.016	<1	-	<2	-	<2	-	<2	-	<2	-	<2	-	<1	-	-	-	<4	-
22/06/2021	Landfill Leachate	EM2111910	0.368	0.065	<1	-	6	-	<2	-	<2	-	3	-	3	-	9	-	-	-	<4	-
20/07/2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/08/2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/10/2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/11/2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/12/2021	Landfill Leachate	EM2124673	0.533	0.340	<1	-	2	-	4	-	5	-	6	-	11	-	17	-	-	-	<2	-

Table 6 - Historical Leachate

			TRH - NEPM 2013													TRH - NEPM 2013 - SG Cleanup					
			F1 (C6-C10 minus BTEX)	F1 (C6-C10 minus BTEX) (filtered)	C6-C10 Fraction	C6-C10 Fraction (filtered)	F2 (>C10-C16 minus Naphthalene)	F2 (>C10-C16 minus Naphthalene) (filtered)	>C10-C16 Fraction	>C10-C16 Fraction (filtered)	F3 (>C16-C34 Fraction)	F3 (>C16-C34 Fraction) (filtered)	F4 (>C34-C40 Fraction)	F4 (>C34-C40 Fraction) (filtered)	>C10-C40 (Sum of Total)	>C10-C40 (Sum of Total) (filtered)	>C10-C16 SG Cleanup	>C16-C34 SG Cleanup	>C34-C40 SG Cleanup	>C10-C40 (sum) SG Cleanup	C6-C9 Fraction	C6-C9 Fraction (filtered)
Table 6: Historical Leachate			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			20	20	20	20	100	100	100	100	100	100	100	100	100	100	100	100	100	100	20	20
ANZECC 2000 - Stock Watering																						
ANZG (2018) - FW - 95% (updated 26 July 2021)																						
ADWG 2011 Health (v3.6 updated 2021)																						
ANZECC 2000 Irrigation - Long-term Trigger Values																						
ANZECC 2000 Irrigation - Short-term Trigger Values																						
Date	**Field ID**	**Lab Report Number**																				
10/09/2013	LEACHATE POND 2	EM1309644	420	-	420	-	8,090	-	8,090	-	1,470	-	<100	-	9,560	-	-	-	-	-	450	-
18/11/2013	Landfill leachate (quarterly)	EM1312183	<20	-	<20	-	<100	-	<100	-	<100	-	<100	-	<100	-	-	-	-	-	<20	-
4/03/2014	Landfill leachate (quarterly)	EM1401975	<20	-	<20	-	350	-	350	-	1,200	-	<100	-	1,550	-	-	-	-	-	<20	-
2/06/2014	Landfill leachate (quarterly)	EM1405379	120	-	190	-	1,620	-	1,620	-	1,300	-	<100	-	2,920	-	-	-	-	-	200	-
17/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2/09/2014	Landfill leachate (quarterly)	EM1408979	50	-	70	-	2,390	-	2,390	-	2,700	-	<100	-	5,090	-	-	-	-	-	110	-
1/06/2015	Landfill leachate (quarterly)	EM1510467	<20	-	<20	-	530	-	530	-	850	-	<100	-	1,380	-	-	-	-	-	<20	-
27/06/2016	Landfill leachate (quarterly)	EM1607483	-	20	-	50	-	1,010	-	1,010	-	910	-	<100	-	1,920	-	-	-	-	-	50
22/09/2016	Landfill leachate (quarterly)	EM1611287	<20	<20	<20	<20	400	400	400	400	680	680	<100	<100	1,080	1,080	-	-	-	-	<20	<20
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/01/2017	Landfill leachate (quarterly)	EM1700066	-	<20	-	<20	-	550	-	550	-	680	-	<100	-	1,230	-	-	-	-	-	<20
23/03/2017	DWM230317	EM1703524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8/05/2017	Landfill leachate (quarterly)	EM1705724	<20	-	<20	-	570	-	570	-	810	-	<100	-	1,380	-	-	-	-	-	<20	-
14/06/2017	DWM140617	EM1707709	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28/08/2017	Quarterly leachate samples	EM1711607	<20	-	20	-	940	-	940	-	2,240	-	300	-	3,480	-	-	-	-	-	40	-
6/09/2017	DWM060917	EM1712174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/09/2017	DWM110917	EM1712414	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2017	DWM200917	EM1712965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/10/2017	DWM121017	EM1714085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/06/2018	Landfill Leachate	EM1810261	-	-	-	-	-	-	1,260	-	3,410	-	110	-	4,780	-	-	-	-	-	-	-
19/09/2018	Leachate	EM1815239	-	-	-	-	-	-	510	-	1,470	-	<100	-	1,980	-	-	-	-	-	-	-
20/09/2018	Landfill Leachate	EM1815253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15/11/2018	Weekly Leachate	EM1818439	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/12/2018	Landfill Leachate	EM1820185	<20	-	<20	-	2,570	-	2,570	-	6,590	-	140	-	9,300	-	-	-	-	-	30	-
20/03/2019	Landfill Leachate	EM1904168	40	-	40	-	3,370	-	3,370	-	10,000	-	270	-	13,600	-	-	-	-	-	30	-
26/06/2019	Landfill Leachate	EM1910175	40	-	40	-	1,330	-	1,330	-	3,650	-	<100	-	4,980	-	-	-	-	-	40	-
9/09/2019	Landfill Leachate	EM1915222	<20	-	<20	-	960	-	960	-	2,650	-	<100	-	3,610	-	-	-	-	-	<20	-
11/09/2019	Landfill Leachate	EM1915222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/12/2019	Landfill Leachate	EM1921873	110	-	130	-	2,290	-	2,290	-	5,130	-	170	-	7,590	-	-	-	-	-	170	-
17/12/2019	Landfill Leachate	EM1921873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/03/2020	Landfill Leachate	EM2005146	30	-	60	-	1,260	-	1,260	-	3,260	-	170	-	4,690	-	-	-	-	-	70	-
21/04/2020	Landfill Leachate	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21/04/2020	Leachate Pond	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/05/2020	Landfill Leachate	EM2007860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/05/2020	Landfill Leachate	EM2008320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16/06/2020	Landfill Leachate	EM2010246	40	-	60	-	680	-	680	-	1,820	-	<100	-	2,500	-	-	-	-	-	90	-
16/06/2020	Landfill Leachate	EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/07/2020	Landfill Leachate	EM2012818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26/08/2020	Dulverton Leachate	EM2014788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29/09/2020	Landfill Leachate	EM2017090	50	-	110	-	480	-	480	-	1,060	-	<100	-	1,540	-	-	-	-	-	140	-
29/09/2020	Landfill Leachate	EM2017090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/10/2020	Landfill Leachate	EM2019050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7/12/2020	Landfill Leachate	EM2021896	30	-	30	-	1,260	-	1,260	-	2,590	-	150	-	4,000	-	-	-	-	-	40	-
7/12/2020	Landfill Leachate	EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/05/2021	Landfill Leachate	EM2108650	<20	-	<20	-	420	-	420	-	1,180	-	<100	-	1,600	-	-	-	-	-	<20	-
22/06/2021	Landfill Leachate	EM2111910	20	-	30	-	730	-	730	-	1,530	-	<100	-	2,260	-	-	-	-	-	50	-
20/07/2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/08/2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/10/2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/11/2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/12/2021	Landfill Leachate	EM2124673	170	-	190	-	2,120	-	2,120	-	4,420	-	150	-	6,690	-	-	-	-	-	210	-

Table 6 - Historical Leachate

			TRH - NEPM 1999								TPH											
			C10-C14 Fraction	C10-C14 Fraction (filtered)	C15-C28 Fraction	C15-C28 Fraction (filtered)	C29-C36 Fraction	C29-C36 Fraction (filtered)	C10-C36 (Sum of Total)	C10-C36 (Sum of Total) (filtered)	Oil & Grease	Oil & Grease (filtered)	Acenaphthene	Acenaphthene (filtered)	Acenaphthylene	Acenaphthylene (filtered)	Anthracene	Anthracene (filtered)	Benz(a)anthracene	Benz(a)anthracene (filtered)	Benzo(a)pyrene	Benzo(a)pyrene (filtered)
Table 6: Historical Leachate			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			50	50	100	100	50	50	50	50	5,000	5,000	1	1	1	1	1	1	1	1	0.5	0.5
ANZECC 2000 - Stock Watering																						
ANZG (2018) - FW - 95% (updated 26 July 2021)																	0.4	0.4			0.2	0.2
ADWG 2011 Health (v3.6 updated 2021)																					0.01	0.01
ANZECC 2000 Irrigation - Long-term Trigger Values																						
ANZECC 2000 Irrigation - Short-term Trigger Values																						
Date	**Field ID**	**Lab Report Number**																				
10/09/2013	LEACHATE POND 2	EM1309644	9,200	-	1,870	-	100	-	11,200	-	<5,000	-	<5	-	<5	-	<5	-	<5	-	<2.5	-
18/11/2013	Landfill leachate (quarterly)	EM1312183	<50	-	<100	-	<50	-	<50	-	<5,000	-	<1	-	<1	-	<1	-	<1	-	<0.5	-
4/03/2014	Landfill leachate (quarterly)	EM1401975	220	-	1,080	-	180	-	1,480	-	9,000	-	<1	-	<1	-	<1	-	<1	-	<0.6	-
2/06/2014	Landfill leachate (quarterly)	EM1405379	1,280	-	1,630	-	<50	-	2,910	-	<5,000	-	<10	-	<10	-	<10	-	<10	-	<5	-
17/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2/09/2014	Landfill leachate (quarterly)	EM1408979	1,880	-	2,920	-	260	-	5,060	-	<5,000	-	<1	-	<1	-	<1	-	<1	-	<0.5	-
1/06/2015	Landfill leachate (quarterly)	EM1510467	380	-	950	-	<50	-	1,330	-	12,000	-	<1	-	<1	-	<1	-	<1	-	<0.5	-
27/06/2016	Landfill leachate (quarterly)	EM1607483	-	890	-	1,080	-	70	-	2,040	-	<5,000	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<0.5
22/09/2016	Landfill leachate (quarterly)	EM1611287	270	270	740	740	100	100	1,110	1,110	12,000	12,000	<1	<1.0	<1	<1.0	<1	<1.0	<1	<1.0	<0.5	<0.5
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/01/2017	Landfill leachate (quarterly)	EM1700066	-	420	-	810	-	60	-	1,290	-	19,000	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<0.5
23/03/2017	DWM230317	EM1703524	-	-	-	-	-	-	-	-	8,000	-	-	-	-	-	-	-	-	-	-	-
8/05/2017	Landfill leachate (quarterly)	EM1705724	390	-	1,000	-	<50	-	1,390	-	<5,000	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<0.5	-
14/06/2017	DWM140617	EM1707709	-	-	-	-	-	-	-	-	<5,000	-	-	-	-	-	-	-	-	-	-	-
28/08/2017	Quarterly leachate samples	EM1711607	900	-	2,180	-	490	-	3,570	-	<5,000	-	<1.3	-	<1.3	-	<1.3	-	<1.3	-	<1.3	-
6/09/2017	DWM060917	EM1712174	-	-	-	-	-	-	-	-	6,000	-	-	-	-	-	-	-	-	-	-	-
11/09/2017	DWM110917	EM1712414	-	-	-	-	-	-	-	-	<5,000	-	-	-	-	-	-	-	-	-	-	-
20/09/2017	DWM200917	EM1712965	-	-	-	-	-	-	-	-	<5,000	-	-	-	-	-	-	-	-	-	-	-
12/10/2017	DWM121017	EM1714085	-	-	-	-	-	-	-	-	<5,000	-	-	-	-	-	-	-	-	-	-	-
25/06/2018	Landfill Leachate	EM1810261	950	-	3,820	-	240	-	5,010	-	-	-	-	-	-	-	-	-	-	-	-	-
19/09/2018	Leachate	EM1815239	380	-	1,500	-	120	-	2,000	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2018	Landfill Leachate	EM1815253	-	-	-	-	-	-	-	-	6,000	-	-	-	-	-	-	-	-	-	-	-
15/11/2018	Weekly Leachate	EM1818439	-	-	-	-	-	-	-	-	11,000	-	-	-	-	-	-	-	-	-	-	-
12/12/2018	Landfill Leachate	EM1820185	1,950	-	7,190	-	310	-	9,450	-	-	-	-	-	-	-	-	-	-	-	-	-
20/03/2019	Landfill Leachate	EM1904168	2,590	-	10,600	-	610	-	13,800	-	-	-	<2	-	<2	-	<2	-	<2	-	<2	-
26/06/2019	Landfill Leachate	EM1910175	980	-	4,170	-	90	-	5,240	-	-	-	<2	-	<2	-	<2	-	<2	-	<2	-
9/09/2019	Landfill Leachate	EM1915222	750	-	2,880	-	180	-	3,810	-	-	-	<2	-	<2	-	<2	-	<2	-	<2	-
11/09/2019	Landfill Leachate	EM1915222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/12/2019	Landfill Leachate	EM1921873	1,670	-	5,710	-	380	-	7,760	-	6,000	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<0.5	-
17/12/2019	Landfill Leachate	EM1921873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/03/2020	Landfill Leachate	EM2005146	900	-	3,440	-	370	-	4,710	-	10,000	-	<4	-	<4	-	<4	-	<4	-	<4	-
21/04/2020	Landfill Leachate	EM2006671	-	-	-	-	-	-	-	-	14,000	-	-	-	-	-	-	-	-	-	-	-
21/04/2020	Leachate Pond	EM2006671	-	-	-	-	-	-	-	-	13,000	-	-	-	-	-	-	-	-	-	-	-
11/05/2020	Landfill Leachate	EM2007860	-	-	-	-	-	-	-	-	15,000	-	-	-	-	-	-	-	-	-	-	-
18/05/2020	Landfill Leachate	EM2008320	-	-	-	-	-	-	-	-	8,000	-	-	-	-	-	-	-	-	-	-	-
16/06/2020	Landfill Leachate	EM2010246	500	-	1,840	-	260	-	2,600	-	5,000	-	<2	-	<2	-	<2	-	<2	-	<2	-
16/06/2020	Landfill Leachate	EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/07/2020	Landfill Leachate	EM2012818	-	-	-	-	-	-	-	-	7,000	-	-	-	-	-	-	-	-	-	-	-
26/08/2020	Dulverton Leachate	EM2014788	-	-	-	-	-	-	-	-	9,000	-	-	-	-	-	-	-	-	-	-	-
29/09/2020	Landfill Leachate	EM2017090	380	-	1,100	-	110	-	1,590	-	5,000	-	<2	-	<2	-	<2	-	<2	-	<2	-
29/09/2020	Landfill Leachate	EM2017090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/10/2020	Landfill Leachate	EM2019050	-	-	-	-	-	-	-	-	15,000	-	-	-	-	-	-	-	-	-	-	-
7/12/2020	Landfill Leachate	EM2021896	850	-	2,860	-	300	-	4,010	-	<5,000	-	<2	-	<2	-	<2	-	<2	-	<2	-
7/12/2020	Landfill Leachate	EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/05/2021	Landfill Leachate	EM2108650	290	-	1,240	-	140	-	1,670	-	<5,000	-	<4	-	<4	-	<4	-	<4	-	<4	-
22/06/2021	Landfill Leachate	EM2111910	560	-	1,670	-	140	-	2,370	-	7,000	-	<4	-	<4	-	<4	-	<4	-	<4	-
20/07/2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	<5,000	-	-	-	-	-	-	-	-	-	-	-
18/08/2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	6,000	-	-	-	-	-	-	-	-	-	-	-
18/10/2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	<5,000	-	-	-	-	-	-	-	-	-	-	-
17/11/2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	6,000	-	-	-	-	-	-	-	-	-	-	-
6/12/2021	Landfill Leachate	EM2124673	1,730	-	4,800	-	340	-	6,870	-	5,000	-	<2	-	<2	-	<2	-	<2	-	<2	-

Table 6 - Historical Leachate

			PAHs - standard 16																		
Table 6: Historical Leachate			Benzo[b+j]fluoranthene µg/L	Benzo[b+j]fluoranthene (filtered) µg/L	Benzo(k)fluoranthene µg/L	Benzo(k)fluoranthene (filtered) µg/L	Benzo(g,h,i)perylene µg/L	Benzo(g,h,i)perylene (filtered) µg/L	Chrysene µg/L	Chrysene (filtered) µg/L	Dibenz(a,h)anthracene µg/L	Dibenz(a,h)anthracene (filtered) µg/L	Fluoranthene µg/L	Fluoranthene (filtered) µg/L	Fluorene µg/L	Fluorene (filtered) µg/L	Indeno(1,2,3-c,d)pyrene µg/L	Indeno(1,2,3-c,d)pyrene (filtered) µg/L	Phenanthrene µg/L	Phenanthrene (filtered) µg/L	Pyrene µg/L	Pyrene (filtered) µg/L
EQL			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ANZECC 2000 - Stock Watering																						
ANZG (2018) - FW - 95% (updated 26 July 2021)													1.4	1.4					2	2		
ADWG 2011 Health (v3.6 updated 2021)																						
ANZECC 2000 Irrigation - Long-term Trigger Values																						
ANZECC 2000 Irrigation - Short-term Trigger Values																						
Date	**Field ID**	**Lab Report Number**																				
10/09/2013	LEACHATE POND 2	EM1309644	-	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-
18/11/2013	Landfill leachate (quarterly)	EM1312183	-	-	<1	-	<1	-	<1	-	<1	-	<1	-	<1	-	<1	-	<1	-	<1	-
4/03/2014	Landfill leachate (quarterly)	EM1401975	-	-	<1	-	<1	-	<1	-	<1	-	<1	-	<1	-	<1	-	<1	-	<1	-
2/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	<10	-	<10	-	<10	-	<10	-	<10	-	<10	-	<10	-	<10	-	<10	-
17/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2/09/2014	Landfill leachate (quarterly)	EM1408979	-	-	<1	-	<1	-	<1	-	<1	-	<1	-	<1	-	<1	-	<1	-	<1	-
1/06/2015	Landfill leachate (quarterly)	EM1510467	<1	-	<1	-	<1	-	<1	-	<1	-	<1	-	<1	-	<1	-	<1	-	<1	-
27/06/2016	Landfill leachate (quarterly)	EM1607483	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0
22/09/2016	Landfill leachate (quarterly)	EM1611287	<1	<1.0	<1	<1.0	<1	<1.0	<1	<1.0	<1	<1.0	<1	<1.0	<1	<1.0	<1	<1.0	<1	<1.0	<1	<1.0
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/01/2017	Landfill leachate (quarterly)	EM1700066	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0
23/03/2017	DWM230317	EM1703524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8/05/2017	Landfill leachate (quarterly)	EM1705724	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-
14/06/2017	DWM140617	EM1707709	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28/08/2017	Quarterly leachate samples	EM1711607	<1.3	-	<1.3	-	<1.3	-	<1.3	-	<1.3	-	<1.3	-	<1.3	-	<1.3	-	<1.3	-	<1.3	-
6/09/2017	DWM060917	EM1712174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/09/2017	DWM110917	EM1712414	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2017	DWM200917	EM1712965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/10/2017	DWM121017	EM1714085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/06/2018	Landfill Leachate	EM1810261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19/09/2018	Leachate	EM1815239	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2018	Landfill Leachate	EM1815253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15/11/2018	Weekly Leachate	EM1818439	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/12/2018	Landfill Leachate	EM1820185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/03/2019	Landfill Leachate	EM1904168	-	-	-	-	<2	-	<2	-	<2	-	<2	-	<2	-	<2	-	<2	-	<2	-
26/06/2019	Landfill Leachate	EM1910175	-	-	-	-	<2	-	<2	-	<2	-	<2	-	<2	-	<2	-	<2	-	<2	-
9/09/2019	Landfill Leachate	EM1915222	-	-	-	-	<2	-	<2	-	<2	-	<2	-	<2	-	<2	-	<2	-	<2	-
11/09/2019	Landfill Leachate	EM1915222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/12/2019	Landfill Leachate	EM1921873	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-
17/12/2019	Landfill Leachate	EM1921873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/03/2020	Landfill Leachate	EM2005146	-	-	-	-	<4	-	<4	-	<4	-	<4	-	<4	-	<4	-	<4	-	<4	-
21/04/2020	Landfill Leachate	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21/04/2020	Leachate Pond	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/05/2020	Landfill Leachate	EM2007860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/05/2020	Landfill Leachate	EM2008320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16/06/2020	Landfill Leachate	EM2010246	-	-	-	-	<2	-	<2	-	<2	-	<2	-	<2	-	<2	-	<2	-	<2	-
16/06/2020	Landfill Leachate	EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/07/2020	Landfill Leachate	EM2012818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26/08/2020	Dulverton Leachate	EM2014788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29/09/2020	Landfill Leachate	EM2017090	-	-	-	-	<2	-	<2	-	<2	-	<2	-	<2	-	<2	-	<2	-	<2	-
29/09/2020	Landfill Leachate	EM2017090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/10/2020	Landfill Leachate	EM2019050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7/12/2020	Landfill Leachate	EM2021896	-	-	-	-	<2	-	<2	-	<2	-	<2	-	<2	-	<2	-	<2	-	<2	-
7/12/2020	Landfill Leachate	EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/05/2021	Landfill Leachate	EM2108650	-	-	-	-	<4	-	<4	-	<4	-	<4	-	<4	-	<4	-	<4	-	<4	-
22/06/2021	Landfill Leachate	EM2111910	-	-	-	-	<4	-	<4	-	<4	-	<4	-	<4	-	<4	-	<4	-	<4	-
20/07/2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/08/2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/10/2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/11/2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/12/2021	Landfill Leachate	EM2124673	-	-	-	-	<2	-	<2	-	<2	-	<2	-	<2	-	<2	-	<2	-	<2	-

Table 6 - Historical Leachate

									PAHs - extended					Phenols - Halogenated								
Table 6: Historical Leachate			Sum of standard 16 PAHs µg/L	PAHs (Sum of total) - Lab calc µg/L	PAHs (Sum of total) - Lab calc (filtered) µg/L	Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc µg/L	Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc (filtered) µg/L	PAHs (Sum of Total) - Calc µg/L	2-methylnaphthalene µg/L	3-methylcholanthrene µg/L	7,12-dimethylbenz(a)anthracene µg/L	Benzo(b+j+k)fluoranthene µg/L	Benzo(b)fluoranthene µg/L	2-Chlorophenol µg/L	2-Chlorophenol (filtered) µg/L	2,4-Dichlorophenol µg/L	2,4-Dichlorophenol (filtered) µg/L	2,4,5-Trichlorophenol µg/L	2,4,5-Trichlorophenol (filtered) µg/L	2,4,6-Trichlorophenol µg/L	2,4,6-Trichlorophenol (filtered) µg/L	2,6-Dichlorophenol µg/L
EQL			0.5	0.5	0.5	0.5	0.5	0.5	2	2	2	4	1	1	1	1	1	1	1	1	1	1	1
ANZECC 2000 - Stock Watering																							
ANZG (2018) - FW - 95% (updated 26 July 2021)														490	490	160	160			20	20	
ADWG 2011 Health (v3.6 updated 2021)			0.01	0.01	0.01			0.01						300	300	200	200			20	20	
ANZECC 2000 Irrigation - Long-term Trigger Values																						
ANZECC 2000 Irrigation - Short-term Trigger Values																						
Date	**Field ID**	**Lab Report Number**																				
10/09/2013	LEACHATE POND 2	EM1309644	-	-	-	<2.5	-	<2.5	-	-	-	-	<5	<5	-	<5	-	<5	-	<5	-	<5
18/11/2013	Landfill leachate (quarterly)	EM1312183	-	-	-	<0.5	-	<0.5	-	-	-	-	<1	<1	-	<1	-	<1	-	<1	-	<1
4/03/2014	Landfill leachate (quarterly)	EM1401975	-	-	-	<0.6	-	<0.6	-	-	-	-	<1	<1	-	<1	-	<1	-	<1	-	<1
2/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-	<5	-	<5	-	-	-	-	<10	<10	-	<10	-	<10	-	<10	-	<10
17/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2/09/2014	Landfill leachate (quarterly)	EM1408979	-	-	-	<0.6	-	<0.5	-	-	-	-	<1	<1	-	<1	-	<1	-	<1	-	<1
1/06/2015	Landfill leachate (quarterly)	EM1510467	-	-	-	<0.5	-	<0.5	-	-	-	-	-	<1	-	<1	-	<1	-	<1	-	<1
27/06/2016	Landfill leachate (quarterly)	EM1607483	-	-	<0.5	-	<0.5	-	-	-	-	-	-	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	<0.5	-	<0.5	-	-	-	-	-	-	<1	<1.0	<1	<1.0	<1	<1.0	<1	<1.0	<1
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/01/2017	Landfill leachate (quarterly)	EM1700066	-	-	<0.5	-	<0.5	-	-	-	-	-	-	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-
23/03/2017	DWM230317	EM1703524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8/05/2017	Landfill leachate (quarterly)	EM1705724	-	<0.5	-	<0.5	-	-	-	-	-	-	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0
14/06/2017	DWM140617	EM1707709	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28/08/2017	Quarterly leachate samples	EM1711607	-	<2.6	-	<2.6	-	-	-	-	-	-	-	<1.3	-	<1.3	-	<1.3	-	<1.3	-	<1.3
6/09/2017	DWM060917	EM1712174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/09/2017	DWM110917	EM1712414	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2017	DWM200917	EM1712965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/10/2017	DWM121017	EM1714085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/06/2018	Landfill Leachate	EM1810261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19/09/2018	Leachate	EM1815239	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2018	Landfill Leachate	EM1815253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15/11/2018	Weekly Leachate	EM1818439	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/12/2018	Landfill Leachate	EM1820185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/03/2019	Landfill Leachate	EM1904168	-	<2	-	<2	-	-	<2	<2	<2	<4	-	<2	-	<2	-	<2	-	<2	-	<2
26/06/2019	Landfill Leachate	EM1910175	-	<2	-	<2	-	-	<2	<2	<2	<4	-	-	-	-	-	-	-	-	-	-
9/09/2019	Landfill Leachate	EM1915222	-	<2	-	<2	-	-	<2	<2	<2	<4	-	<2	-	<2	-	<2	-	<2	-	<2
11/09/2019	Landfill Leachate	EM1915222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/12/2019	Landfill Leachate	EM1921873	<0.5	<2	-	<0.5	-	-	<2	<2	<2	<4	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0
17/12/2019	Landfill Leachate	EM1921873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/03/2020	Landfill Leachate	EM2005146	-	<4	-	<4	-	-	<4	<4	<4	<7	-	<4	-	<4	-	<4	-	<4	-	<4
21/04/2020	Landfill Leachate	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21/04/2020	Leachate Pond	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/05/2020	Landfill Leachate	EM2007860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/05/2020	Landfill Leachate	EM2008320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16/06/2020	Landfill Leachate	EM2010246	-	<2	-	<2	-	-	<2	<2	<2	<4	-	<2	-	<2	-	<2	-	<2	-	<2
16/06/2020	Landfill Leachate	EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/07/2020	Landfill Leachate	EM2012818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26/08/2020	Dulverton Leachate	EM2014788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29/09/2020	Landfill Leachate	EM2017090	-	<2	-	<2	-	-	<2	<2	<2	<4	-	<2	-	<2	-	<2	-	<2	-	<2
29/09/2020	Landfill Leachate	EM2017090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/10/2020	Landfill Leachate	EM2019050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7/12/2020	Landfill Leachate	EM2021896	-	<2	-	<2	-	-	<2	<2	<2	<4	-	<2	-	<2	-	<2	-	<2	-	<2
7/12/2020	Landfill Leachate	EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/05/2021	Landfill Leachate	EM2108650	-	<4	-	<4	-	-	<4	<4	<4	<7	-	<4	-	<4	-	<4	-	<4	-	<4
22/06/2021	Landfill Leachate	EM2111910	-	<5	-	<5	-	-	<4	<4	<4	<8	-	<4	-	<4	-	<4	-	<4	-	<4
20/07/2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/08/2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/10/2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/11/2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/12/2021	Landfill Leachate	EM2124673	-	<2	-	<2	-	-	<2	<2	<2	<4	-	<2	-	<2	-	<2	-	<2	-	<2

Table 6 - Historical Leachate

								Phenols - Non-Halogenated													
Table 6: Historical Leachate			2,6-Dichlorophenol (filtered)	4-Chloro-3-methylphenol	4-Chloro-3-methylphenol (filtered)	Pentachlorophenol	Pentachlorophenol (filtered)	Phenol	Phenol (filtered)	2-Nitrophenol	2-Nitrophenol (filtered)	2-Methylphenol (o-Cresol)	2-Methylphenol (o-Cresol) (filtered)	3,4-Methylphenol (m,p-cresol)	3,4-Methylphenol (m,p-cresol) (filtered)	2,4-Dimethylphenol	2,4-Dimethylphenol (filtered)	4,4'-DDE	4,4'-DDE (filtered)	a-BHC	a-BHC (filtered)	Aldrin
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1	1	1	2	2	1	1	1	1	1	1	2	2	1	1	0.5	0.5	0.5	0.5	0.5
ANZECC 2000 - Stock Watering																						
ANZG (2018) - FW - 95% (updated 26 July 2021)						10	10	320	320													
ADWG 2011 Health (v3.6 updated 2021)						10	10															
ANZECC 2000 Irrigation - Long-term Trigger Values																						
ANZECC 2000 Irrigation - Short-term Trigger Values																						
Date	**Field ID**	**Lab Report Number**																				
10/09/2013	LEACHATE POND 2	EM1309644	-	<5	-	<10	-	121	-	<5	-	<8	-	707	-	<5	-	<0.5	-	<0.5	-	<0.5
18/11/2013	Landfill leachate (quarterly)	EM1312183	-	8.2	-	<2	-	1.7	-	<1	-	<1	-	132	-	<1	-	<0.5	-	<0.5	-	<0.5
4/03/2014	Landfill leachate (quarterly)	EM1401975	-	<1	-	<2	-	<1	-	<1	-	<1	-	<2	-	<1	-	<0.5	-	<0.5	-	<0.5
2/06/2014	Landfill leachate (quarterly)	EM1405379	-	<10	-	<20	-	100	-	<10	-	<10	-	311	-	<10	-	<0.5	-	<0.5	-	<0.5
17/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2/09/2014	Landfill leachate (quarterly)	EM1408979	-	<1	-	<2	-	14.6	-	<1	-	15.7	-	11.4	-	1.5	-	<0.5	-	<0.5	-	<0.5
1/06/2015	Landfill leachate (quarterly)	EM1510467	-	<1	-	<2	-	<1	-	<1	-	<1	-	<2	-	<1	-	<0.5	-	<0.5	-	<0.5
27/06/2016	Landfill leachate (quarterly)	EM1607483	<1.0	-	<1.0	-	<2.0	-	93.7	-	<1.0	-	<1.0	-	222	-	<1.0	-	<0.5	-	<0.5	-
22/09/2016	Landfill leachate (quarterly)	EM1611287	<1.0	<1	<1.0	<2	<2.0	2.6	2.6	<1	<1.0	2.5	2.5	<2	<2.0	<1	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/01/2017	Landfill leachate (quarterly)	EM1700066	<1.0	-	<1.0	-	<2.0	-	<1.0	-	<1.0	-	<1.0	-	134	-	<1.0	-	<0.5	-	<0.5	-
23/03/2017	DWM230317	EM1703524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8/05/2017	Landfill leachate (quarterly)	EM1705724	-	<1.0	-	<2.0	-	<1.0	-	<1.0	-	<1.0	-	<2.0	-	<1.0	-	<0.5	-	<0.5	-	<0.5
14/06/2017	DWM140617	EM1707709	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28/08/2017	Quarterly leachate samples	EM1711607	-	<1.3	-	<2.6	-	5.0	-	<1.3	-	9.2	-	4.5	-	<1.3	-	<1.3	-	<1.3	-	<1.3
6/09/2017	DWM060917	EM1712174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/09/2017	DWM110917	EM1712414	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2017	DWM200917	EM1712965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/10/2017	DWM121017	EM1714085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/06/2018	Landfill Leachate	EM1810261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19/09/2018	Leachate	EM1815239	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2018	Landfill Leachate	EM1815253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15/11/2018	Weekly Leachate	EM1818439	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/12/2018	Landfill Leachate	EM1820185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/03/2019	Landfill Leachate	EM1904168	-	<2	-	<4	-	100	-	<2	-	13	-	449	-	<2	-	<0.8	-	<0.8	-	<0.8
26/06/2019	Landfill Leachate	EM1910175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.5	-	<0.5
9/09/2019	Landfill Leachate	EM1915222	-	<2	-	<4	-	<2	-	<2	-	<2	-	<4	-	<2	-	<0.9	-	<0.9	-	<0.9
11/09/2019	Landfill Leachate	EM1915222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/12/2019	Landfill Leachate	EM1921873	-	<1.0	-	<2.0	-	10	-	<1.0	-	13	-	36.4	-	1.8	-	<0.5	-	<0.5	-	<0.5
17/12/2019	Landfill Leachate	EM1921873	-	-	-	-	-	14.4	-	-	-	15.0	-	50	-	<2	-	-	-	-	-	-
25/03/2020	Landfill Leachate	EM2005146	-	<4	-	<4	-	<4	-	<4	-	5	-	12	-	<4	-	<0.5	-	<0.5	-	<0.5
21/04/2020	Landfill Leachate	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21/04/2020	Leachate Pond	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/05/2020	Landfill Leachate	EM2007860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/05/2020	Landfill Leachate	EM2008320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16/06/2020	Landfill Leachate	EM2010246	-	14	-	<4	-	<2	-	<2	-	2	-	<4	-	<2	-	<2	-	<2	-	<2
16/06/2020	Landfill Leachate	EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/07/2020	Landfill Leachate	EM2012818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26/08/2020	Dulverton Leachate	EM2014788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29/09/2020	Landfill Leachate	EM2017090	-	<2	-	<4	-	3	-	<2	-	4	-	4	-	<2	-	<0.5	-	<0.5	-	<0.5
29/09/2020	Landfill Leachate	EM2017090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/10/2020	Landfill Leachate	EM2019050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7/12/2020	Landfill Leachate	EM2021896	-	<2	-	<4	-	29	-	<2	-	5	-	121	-	<2	-	<0.5	-	<0.5	-	<0.5
7/12/2020	Landfill Leachate	EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/05/2021	Landfill Leachate	EM2108650	-	<4	-	<4	-	<4	-	<4	-	<4	-	9	-	<4	-	<0.5	-	<0.5	-	<0.5
22/06/2021	Landfill Leachate	EM2111910	-	<4	-	<4	-	<4	-	<4	-	5	-	8	-	<4	-	<0.5	-	<0.5	-	<0.5
20/07/2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/08/2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/10/2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/11/2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/12/2021	Landfill Leachate	EM2124673	-	<2	-	<4	-	5	-	<2	-	52	-	38	-	<2	-	<0.5	-	<0.5	-	<0.5

Table 6 - Historical Leachate

																					OC Pesticides	
			Aldrin (filtered)	Aldrin + Dieldrin	Aldrin + Dieldrin (filtered)	b-BHC	b-BHC (filtered)	Chlordane	Chlordane (filtered)	Chlordane (cis)	Chlordane (cis) (filtered)	Chlordane (trans)	Chlordane (trans) (filtered)	d-BHC	d-BHC (filtered)	4,4 DDD	4,4 DDD (filtered)	4,4 DDT	4,4 DDT (filtered)	DDT+DDE+DDD - Lab Calc	DDT+DDE+DDD - Lab Calc (filtered)	Dieldrin
Table 6: Historical Leachate			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			0.5	0.5	0.5	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	2	0.5	0.5	0.5
ANZECC 2000 - Stock Watering																						
ANZG (2018) - FW - 95% (updated 26 July 2021)								0.08	0.08									0.01	0.01			
ADWG 2011 Health (v3.6 updated 2021)				0.3	0.3			2	2									9	9			
ANZECC 2000 Irrigation - Long-term Trigger Values																						
ANZECC 2000 Irrigation - Short-term Trigger Values																						
Date	**Field ID**	**Lab Report Number**																				
10/09/2013	LEACHATE POND 2	EM1309644	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2	-	<0.5	-	<0.5
18/11/2013	Landfill leachate (quarterly)	EM1312183	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2	-	<0.5	-	<0.5
4/03/2014	Landfill leachate (quarterly)	EM1401975	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2	-	<0.5	-	<0.5
2/06/2014	Landfill leachate (quarterly)	EM1405379	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2	-	<0.5	-	<0.5
17/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2/09/2014	Landfill leachate (quarterly)	EM1408979	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	0.6	-	<2	-	0.6	-	<0.5
1/06/2015	Landfill leachate (quarterly)	EM1510467	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2	-	<0.5	-	<0.5
27/06/2016	Landfill leachate (quarterly)	EM1607483	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2.0	-	<0.5	-
22/09/2016	Landfill leachate (quarterly)	EM1611287	<0.5	<0.5	<0.5	<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	<2.0	<0.5	<0.5	<0.5
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/01/2017	Landfill leachate (quarterly)	EM1700066	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2.0	-	<0.5	-
23/03/2017	DWM230317	EM1703524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8/05/2017	Landfill leachate (quarterly)	EM1705724	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2.0	-	<0.5	-	<0.5
14/06/2017	DWM140617	EM1707709	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28/08/2017	Quarterly leachate samples	EM1711607	-	<1.3	-	<1.3	-	<1.3	-	<1.3	-	<1.3	-	<1.3	-	<1.3	-	<2.0	-	<1.3	-	<1.3
6/09/2017	DWM060917	EM1712174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/09/2017	DWM110917	EM1712414	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2017	DWM200917	EM1712965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/10/2017	DWM121017	EM1714085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/06/2018	Landfill Leachate	EM1810261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19/09/2018	Leachate	EM1815239	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2018	Landfill Leachate	EM1815253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15/11/2018	Weekly Leachate	EM1818439	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/12/2018	Landfill Leachate	EM1820185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/03/2019	Landfill Leachate	EM1904168	-	<0.8	-	<0.8	-	<0.8	-	<0.8	-	<0.8	-	<0.8	-	<0.8	-	<2.0	-	<0.8	-	<0.8
26/06/2019	Landfill Leachate	EM1910175	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2.0	-	<0.5	-	<0.5
9/09/2019	Landfill Leachate	EM1915222	-	<0.9	-	<0.9	-	<0.9	-	<0.9	-	<0.9	-	<0.9	-	<0.9	-	<2.0	-	<0.9	-	<0.9
11/09/2019	Landfill Leachate	EM1915222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/12/2019	Landfill Leachate	EM1921873	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2.0	-	<0.5	-	<0.5
17/12/2019	Landfill Leachate	EM1921873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/03/2020	Landfill Leachate	EM2005146	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2.0	-	<0.5	-	<0.5
21/04/2020	Landfill Leachate	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21/04/2020	Leachate Pond	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/05/2020	Landfill Leachate	EM2007860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/05/2020	Landfill Leachate	EM2008320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16/06/2020	Landfill Leachate	EM2010246	-	<0.9	-	<2	-	<0.9	-	<2.8	-	<2.8	-	<2	-	<2	-	<4	-	<0.9	-	<2
16/06/2020	Landfill Leachate	EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/07/2020	Landfill Leachate	EM2012818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26/08/2020	Dulverton Leachate	EM2014788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29/09/2020	Landfill Leachate	EM2017090	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2.0	-	<0.5	-	<0.5
29/09/2020	Landfill Leachate	EM2017090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/10/2020	Landfill Leachate	EM2019050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7/12/2020	Landfill Leachate	EM2021896	-	0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2.0	-	<0.5	-	0.5
7/12/2020	Landfill Leachate	EM2021896	-	<4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<2
12/05/2021	Landfill Leachate	EM2108650	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2.0	-	<0.5	-	<0.5
22/06/2021	Landfill Leachate	EM2111910	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2.0	-	<0.5	-	<0.5
20/07/2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/08/2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/10/2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/11/2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/12/2021	Landfill Leachate	EM2124673	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2.0	-	<0.5	-	<0.5

Table 6 - Historical Leachate

Table 6: Historical Leachate			Dieldrin (filtered) µg/L	Endosulfan I (alpha) µg/L	Endosulfan I (alpha) (filtered) µg/L	Endosulfan II (beta) µg/L	Endosulfan II (beta) (filtered) µg/L	Endosulfan Sulfate µg/L	Endosulfan Sulfate (filtered) µg/L	Endrin µg/L	Endrin (filtered) µg/L	Endrin aldehyde µg/L	Endrin aldehyde (filtered) µg/L	Endrin ketone µg/L	Endrin ketone (filtered) µg/L	g-BHC (Lindane) µg/L	g-BHC (Lindane) (filtered) µg/L	Heptachlor µg/L	Heptachlor (filtered) µg/L	Heptachlor epoxide µg/L	Heptachlor epoxide (filtered) µg/L	Hexachlorobenzene µg/L
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
ANZECC 2000 - Stock Watering																							
ANZG (2018) - FW - 95% (updated 26 July 2021)										0.02	0.02					0.2	0.2	0.09	0.09				0.1
ADWG 2011 Health (v3.6 updated 2021)																10	10	0.3	0.3				
ANZECC 2000 Irrigation - Long-term Trigger Values																							
ANZECC 2000 Irrigation - Short-term Trigger Values																							
Date	**Field ID**	**Lab Report Number**																					
10/09/2013	LEACHATE POND 2	EM1309644	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
18/11/2013	Landfill leachate (quarterly)	EM1312183	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
4/03/2014	Landfill leachate (quarterly)	EM1401975	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
2/06/2014	Landfill leachate (quarterly)	EM1405379	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
17/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2/09/2014	Landfill leachate (quarterly)	EM1408979	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
1/06/2015	Landfill leachate (quarterly)	EM1510467	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
27/06/2016	Landfill leachate (quarterly)	EM1607483	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	
22/09/2016	Landfill leachate (quarterly)	EM1611287	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5/01/2017	Landfill leachate (quarterly)	EM1700066	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	
23/03/2017	DWM230317	EM1703524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8/05/2017	Landfill leachate (quarterly)	EM1705724	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
14/06/2017	DWM140617	EM1707709	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
28/08/2017	Quarterly leachate samples	EM1711607	-	<1.3	-	<1.3	-	<1.3	-	<1.3	-	<1.3	-	<1.3	-	<1.3	-	<1.3	-	<1.3	-	<1.3	
6/09/2017	DWM060917	EM1712174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11/09/2017	DWM110917	EM1712414	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20/09/2017	DWM200917	EM1712965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12/10/2017	DWM121017	EM1714085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
25/06/2018	Landfill Leachate	EM1810261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19/09/2018	Leachate	EM1815239	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20/09/2018	Landfill Leachate	EM1815253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15/11/2018	Weekly Leachate	EM1818439	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12/12/2018	Landfill Leachate	EM1820185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20/03/2019	Landfill Leachate	EM1904168	-	<0.8	-	<0.8	-	<0.8	-	<0.8	-	<0.8	-	<0.8	-	<0.8	-	<0.8	-	<0.8	-	<0.8	
26/06/2019	Landfill Leachate	EM1910175	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
9/09/2019	Landfill Leachate	EM1915222	-	<0.9	-	<0.9	-	<0.9	-	<0.9	-	<0.9	-	<0.9	-	<0.9	-	<0.9	-	<0.9	-	<0.9	
11/09/2019	Landfill Leachate	EM1915222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
17/12/2019	Landfill Leachate	EM1921873	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
17/12/2019	Landfill Leachate	EM1921873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
25/03/2020	Landfill Leachate	EM2005146	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
21/04/2020	Landfill Leachate	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
21/04/2020	Leachate Pond	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11/05/2020	Landfill Leachate	EM2007860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
18/05/2020	Landfill Leachate	EM2008320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
16/06/2020	Landfill Leachate	EM2010246	-	<2	-	<2	-	<2	-	<2	-	<2.8	-	<2.8	-	<2	-	<2	-	<2	-	<2.8	
16/06/2020	Landfill Leachate	EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
22/07/2020	Landfill Leachate	EM2012818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
26/08/2020	Dulverton Leachate	EM2014788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
29/09/2020	Landfill Leachate	EM2017090	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
29/09/2020	Landfill Leachate	EM2017090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
27/10/2020	Landfill Leachate	EM2019050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
7/12/2020	Landfill Leachate	EM2021896	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
7/12/2020	Landfill Leachate	EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12/05/2021	Landfill Leachate	EM2108650	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
22/06/2021	Landfill Leachate	EM2111910	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
20/07/2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
18/08/2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
18/10/2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
17/11/2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6/12/2021	Landfill Leachate	EM2124673	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	

Table 6 - Historical Leachate

Table 6: Historical Leachate			Hexachlorobenzene (filtered) µg/L	Methoxychlor µg/L	Methoxychlor (filtered) µg/L	Azinphos methyl µg/L	Azinphos methyl (filtered) µg/L	Bromophos-ethyl µg/L	Bromophos-ethyl (filtered) µg/L	Carbophenothion µg/L	Carbophenothion (filtered) µg/L	Chlorfenvinphos µg/L	Chlorfenvinphos (filtered) µg/L	Chlorpyrifos µg/L	Chlorpyrifos (filtered) µg/L	Chlorpyrifos-methyl µg/L	Chlorpyrifos-methyl (filtered) µg/L	Demeton-S-methyl µg/L	Demeton-S-methyl (filtered) µg/L	Diazinon µg/L	Diazinon (filtered) µg/L	Dichlorvos µg/L
EQL			0.5	2	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	0.5
ANZECC 2000 - Stock Watering																							
ANZG (2018) - FW - 95% (updated 26 July 2021)			0.1			0.02	0.02							0.01	0.01						0.01	0.01	
ADWG 2011 Health (v3.6 updated 2021)				300	300	30	30	10	10	0.5	0.5	2	2	10	10						4	4	5
ANZECC 2000 Irrigation - Long-term Trigger Values																							
ANZECC 2000 Irrigation - Short-term Trigger Values																							
Date	**Field ID**	**Lab Report Number**																					
10/09/2013	LEACHATE POND 2	EM1309644	-	<2	-	<0.5	-	<0.5	-	<0.5	-	1.2	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
18/11/2013	Landfill leachate (quarterly)	EM1312183	-	<2	-	<0.5	-	<0.5	-	<0.5	-	1.1	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
4/03/2014	Landfill leachate (quarterly)	EM1401975	-	<2	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
2/06/2014	Landfill leachate (quarterly)	EM1405379	-	<2	-	<0.5	-	<0.5	-	<0.5	-	0.8	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
17/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2/09/2014	Landfill leachate (quarterly)	EM1408979	-	<2	-	<0.5	-	<0.5	-	<0.5	-	14.8	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
1/06/2015	Landfill leachate (quarterly)	EM1510467	-	<2	-	<0.5	-	<0.5	-	<0.5	-	3.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
27/06/2016	Landfill leachate (quarterly)	EM1607483	<0.5	-	<2.0	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	
22/09/2016	Landfill leachate (quarterly)	EM1611287	<0.5	<2	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5/01/2017	Landfill leachate (quarterly)	EM1700066	<0.5	-	<2.0	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	
23/03/2017	DWM230317	EM1703524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8/05/2017	Landfill leachate (quarterly)	EM1705724	-	<2.0	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
14/06/2017	DWM140617	EM1707709	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
28/08/2017	Quarterly leachate samples	EM1711607	-	<2.0	-	<1.3	-	<1.3	-	<1.3	-	<1.3	-	<1.3	-	<1.3	-	<1.3	-	<1.3	-	<1.3	
6/09/2017	DWM060917	EM1712174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11/09/2017	DWM110917	EM1712414	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20/09/2017	DWM200917	EM1712965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12/10/2017	DWM121017	EM1714085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
25/06/2018	Landfill Leachate	EM1810261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19/09/2018	Leachate	EM1815239	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20/09/2018	Landfill Leachate	EM1815253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15/11/2018	Weekly Leachate	EM1818439	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12/12/2018	Landfill Leachate	EM1820185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20/03/2019	Landfill Leachate	EM1904168	-	<2.0	-	<0.8	-	<0.8	-	<0.8	-	<0.8	-	<0.8	-	<0.8	-	<0.8	-	<0.8	-	<0.8	
26/06/2019	Landfill Leachate	EM1910175	-	<2.0	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
9/09/2019	Landfill Leachate	EM1915222	-	<2.0	-	<0.9	-	<0.9	-	<0.9	-	<0.9	-	<0.9	-	<0.9	-	<0.9	-	<0.9	-	<0.9	
11/09/2019	Landfill Leachate	EM1915222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
17/12/2019	Landfill Leachate	EM1921873	-	<2.0	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
17/12/2019	Landfill Leachate	EM1921873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
25/03/2020	Landfill Leachate	EM2005146	-	<2.0	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
21/04/2020	Landfill Leachate	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
21/04/2020	Leachate Pond	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11/05/2020	Landfill Leachate	EM2007860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
18/05/2020	Landfill Leachate	EM2008320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
16/06/2020	Landfill Leachate	EM2010246	-	<11.2	-	<2.8	-	<2.8	-	<2.8	-	<2	-	<2	-	<2	-	<2.8	-	<2	-	<2	
16/06/2020	Landfill Leachate	EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
22/07/2020	Landfill Leachate	EM2012818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
26/08/2020	Dulverton Leachate	EM2014788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
29/09/2020	Landfill Leachate	EM2017090	-	<2.0	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
29/09/2020	Landfill Leachate	EM2017090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
27/10/2020	Landfill Leachate	EM2019050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
7/12/2020	Landfill Leachate	EM2021896	-	<2.0	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
7/12/2020	Landfill Leachate	EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12/05/2021	Landfill Leachate	EM2108650	-	<2.0	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
22/06/2021	Landfill Leachate	EM2111910	-	<2.0	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	
20/07/2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
18/08/2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
18/10/2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
17/11/2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6/12/2021	Landfill Leachate	EM2124673	-	<2.0	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	

Table 6 - Historical Leachate

			OP Pesticides																		
Table 6: Historical Leachate			Dichlorvos (filtered) µg/L	Dimethoate µg/L	Dimethoate (filtered) µg/L	Ethion µg/L	Ethion (filtered) µg/L	Fenamiphos µg/L	Fenamiphos (filtered) µg/L	Fenthion µg/L	Fenthion (filtered) µg/L	Malathion µg/L	Malathion (filtered) µg/L	Methyl parathion µg/L	Methyl parathion (filtered) µg/L	Monocrotophos µg/L	Monocrotophos (filtered) µg/L	Parathion µg/L	Parathion (filtered) µg/L	Pirimphos-ethyl µg/L	Pirimphos-ethyl (filtered) µg/L	Prothiofos µg/L
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	2	2	2	2	2	0.5	0.5	0.5
ANZECC 2000 - Stock Watering																						
ANZG (2018) - FW - 95% (updated 26 July 2021)				0.15	0.15							0.05	0.05					0.004	0.004			
ADWG 2011 Health (v3.6 updated 2021)			5	7	7	4	4	0.5	0.5	7	7	70	70	0.7	0.7	2	2	20	20	0.5	0.5	
ANZECC 2000 Irrigation - Long-term Trigger Values																						
ANZECC 2000 Irrigation - Short-term Trigger Values																						
Date	**Field ID**	**Lab Report Number**																				
10/09/2013	LEACHATE POND 2	EM1309644	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2	-	<2	-	<2	-	<0.5	-	<0.5
18/11/2013	Landfill leachate (quarterly)	EM1312183	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2	-	<2	-	<2	-	<0.5	-	<0.5
4/03/2014	Landfill leachate (quarterly)	EM1401975	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2	-	<2	-	<2	-	<0.5	-	<0.5
2/06/2014	Landfill leachate (quarterly)	EM1405379	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2	-	<2	-	<2	-	<0.5	-	<0.5
17/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2/09/2014	Landfill leachate (quarterly)	EM1408979	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2	-	<2	-	<2	-	<0.5	-	<0.5
1/06/2015	Landfill leachate (quarterly)	EM1510467	-	<0.5	-	<0.5	-	5.1	-	<0.5	-	<0.5	-	<2	-	<2	-	<2	-	<0.5	-	<0.5
27/06/2016	Landfill leachate (quarterly)	EM1607483	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2.0	-	<2.0	-	<2.0	-	<0.5	-
22/09/2016	Landfill leachate (quarterly)	EM1611287	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<2.0	<2	<2.0	<2	<2.0	<0.5	<0.5	<0.5
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/01/2017	Landfill leachate (quarterly)	EM1700066	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2.0	-	<2.0	-	<2.0	-	<0.5	-
23/03/2017	DWM230317	EM1703524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8/05/2017	Landfill leachate (quarterly)	EM1705724	-	<0.5	-	<0.5	-	1.3	-	<0.5	-	<0.5	-	<2.0	-	<2.0	-	<2.0	-	<0.5	-	<0.5
14/06/2017	DWM140617	EM1707709	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28/08/2017	Quarterly leachate samples	EM1711607	-	<1.3	-	<1.3	-	<1.3	-	<1.3	-	<1.3	-	<2.0	-	<2.0	-	<2.0	-	<1.3	-	<1.3
6/09/2017	DWM060917	EM1712174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/09/2017	DWM110917	EM1712414	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2017	DWM200917	EM1712965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/10/2017	DWM121017	EM1714085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/06/2018	Landfill Leachate	EM1810261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19/09/2018	Leachate	EM1815239	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2018	Landfill Leachate	EM1815253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15/11/2018	Weekly Leachate	EM1818439	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/12/2018	Landfill Leachate	EM1820185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/03/2019	Landfill Leachate	EM1904168	-	<0.8	-	<0.8	-	<0.8	-	<0.8	-	<0.8	-	<2.0	-	<2.0	-	<2.0	-	<0.8	-	<0.8
26/06/2019	Landfill Leachate	EM1910175	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2.0	-	<2.0	-	<2.0	-	<0.5	-	<0.5
9/09/2019	Landfill Leachate	EM1915222	-	<0.9	-	<0.9	-	<0.9	-	<0.9	-	<0.9	-	<2.0	-	<2.0	-	<2.0	-	<0.9	-	<0.9
11/09/2019	Landfill Leachate	EM1915222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/12/2019	Landfill Leachate	EM1921873	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2.0	-	<2.0	-	<2.0	-	<0.5	-	<0.5
17/12/2019	Landfill Leachate	EM1921873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/03/2020	Landfill Leachate	EM2005146	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2.0	-	<2.0	-	<2.0	-	<0.5	-	<0.5
21/04/2020	Landfill Leachate	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21/04/2020	Leachate Pond	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/05/2020	Landfill Leachate	EM2007860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/05/2020	Landfill Leachate	EM2008320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16/06/2020	Landfill Leachate	EM2010246	-	<2	-	<2	-	<2.8	-	<2	-	<2	-	<11.2	-	<11.2	-	<11.2	-	<2	-	<2
16/06/2020	Landfill Leachate	EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/07/2020	Landfill Leachate	EM2012818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26/08/2020	Dulverton Leachate	EM2014788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29/09/2020	Landfill Leachate	EM2017090	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2.0	-	<2.0	-	<2.0	-	<0.5	-	<0.5
29/09/2020	Landfill Leachate	EM2017090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/10/2020	Landfill Leachate	EM2019050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7/12/2020	Landfill Leachate	EM2021896	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2.0	-	<2.0	-	<2.0	-	<0.5	-	<0.5
7/12/2020	Landfill Leachate	EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/05/2021	Landfill Leachate	EM2108650	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2.0	-	<2.0	-	<2.0	-	<0.5	-	<0.5
22/06/2021	Landfill Leachate	EM2111910	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2.0	-	<2.0	-	<2.0	-	<0.5	-	<0.5
20/07/2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/08/2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/10/2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/11/2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/12/2021	Landfill Leachate	EM2124673	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<2.0	-	<2.0	-	<2.0	-	<0.5	-	<0.5

Table 6 - Historical Leachate

				Pesticides																	
Table 6: Historical Leachate			Prothiofos (filtered)	4-Chlorophenoxy acetic acid	4-Chlorophenoxy acetic acid (filtered)	1,1,1,2-tetrachloroethane	1,1,1,2-tetrachloroethane (filtered)	1,1,1-trichloroethane	1,1,1-trichloroethane (filtered)	1,1,2,2-tetrachloroethane	1,1,2,2-tetrachloroethane (filtered)	1,1,2-trichloroethane	1,1,2-trichloroethane (filtered)	1,1-dichloroethene	1,1-dichloroethene (filtered)	1,1-dichloropropene	1,1-dichloropropene (filtered)	1,2,4-trichlorobenzene	1,2,4-trichlorobenzene (filtered)	1,2-dibromo-3-chloropropane	1,2-dibromo-3-chloropropane (filtered)	1,2-dichlorobenzene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			0.5	10	10	5	5	5	5	5	5	5	5	5	5	5	5	2	2	5	5	2
ANZECC 2000 - Stock Watering																						
ANZG (2018) - FW - 95% (updated 26 July 2021)								270	270	400	400	6,500	6,500	700	700			170	170			160
ADWG 2011 Health (v3.6 updated 2021)														30	30							1,500
ANZECC 2000 Irrigation - Long-term Trigger Values																						
ANZECC 2000 Irrigation - Short-term Trigger Values																						
Date	**Field ID**	**Lab Report Number**																				
10/09/2013	LEACHATE POND 2	EM1309644	-	<10	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5
18/11/2013	Landfill leachate (quarterly)	EM1312183	-	<10	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<2	-	<5	-	<2
4/03/2014	Landfill leachate (quarterly)	EM1401975	-	<10	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<2	-	<5	-	<2
2/06/2014	Landfill leachate (quarterly)	EM1405379	-	<10	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<2	-	<5	-	<2
17/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2/09/2014	Landfill leachate (quarterly)	EM1408979	-	<10	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<2	-	<5	-	<2
1/06/2015	Landfill leachate (quarterly)	EM1510467	-	<20	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<2	-	<5	-	<2
27/06/2016	Landfill leachate (quarterly)	EM1607483	<0.5	-	<10	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<2	-	<5	-
22/09/2016	Landfill leachate (quarterly)	EM1611287	<0.5	<10	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	<2	<5	<5	<2
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/01/2017	Landfill leachate (quarterly)	EM1700066	<0.5	-	<10	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<2	-	<5	-
23/03/2017	DWM230317	EM1703524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8/05/2017	Landfill leachate (quarterly)	EM1705724	-	<10	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<2	-	<5	-	<2
14/06/2017	DWM140617	EM1707709	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28/08/2017	Quarterly leachate samples	EM1711607	-	<10	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<2	-	<5	-	<2
6/09/2017	DWM060917	EM1712174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/09/2017	DWM110917	EM1712414	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2017	DWM200917	EM1712965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/10/2017	DWM121017	EM1714085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/06/2018	Landfill Leachate	EM1810261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19/09/2018	Leachate	EM1815239	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2018	Landfill Leachate	EM1815253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15/11/2018	Weekly Leachate	EM1818439	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/12/2018	Landfill Leachate	EM1820185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/03/2019	Landfill Leachate	EM1904168	-	<10	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<2	-	<5	-	<2
26/06/2019	Landfill Leachate	EM1910175	-	12	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<2	-	<5	-	<2
9/09/2019	Landfill Leachate	EM1915222	-	<10	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<2	-	<5	-	<2
11/09/2019	Landfill Leachate	EM1915222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/12/2019	Landfill Leachate	EM1921873	-	<20	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<2	-	<5	-	<2
17/12/2019	Landfill Leachate	EM1921873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/03/2020	Landfill Leachate	EM2005146	-	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	<4	-	-	-	<4
21/04/2020	Landfill Leachate	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21/04/2020	Leachate Pond	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/05/2020	Landfill Leachate	EM2007860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/05/2020	Landfill Leachate	EM2008320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16/06/2020	Landfill Leachate	EM2010246	-	<10	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<2	-	<5	-	<2
16/06/2020	Landfill Leachate	EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/07/2020	Landfill Leachate	EM2012818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26/08/2020	Dulverton Leachate	EM2014788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29/09/2020	Landfill Leachate	EM2017090	-	<10	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<2	-	<5	-	<2
29/09/2020	Landfill Leachate	EM2017090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/10/2020	Landfill Leachate	EM2019050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7/12/2020	Landfill Leachate	EM2021896	-	<10	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<2	-	<5	-	<2
7/12/2020	Landfill Leachate	EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/05/2021	Landfill Leachate	EM2108650	-	<10	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<4	-	<5	-	<4
22/06/2021	Landfill Leachate	EM2111910	-	<10	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<4	-	<5	-	<4
20/07/2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/08/2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/10/2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/11/2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/12/2021	Landfill Leachate	EM2124673	-	<10	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<2	-	<5	-	<2

Table 6 - Historical Leachate

			Chlorinated Hydrocarbons																		
			1,2-dichlorobenzene (filtered)	1,2-dichloroethane	1,2-dichloroethane (filtered)	1,2-dichloropropane	1,2-dichloropropane (filtered)	1,3-dichloropropane	1,3-dichloropropane (filtered)	1,4-dichlorobenzene	1,4-dichlorobenzene (filtered)	2,2-dichloropropane	2,2-dichloropropane (filtered)	2-chloronaphthalene	2-chlorotoluene	2-chlorotoluene (filtered)	4-chlorotoluene	4-chlorotoluene (filtered)	Bromobenzene	Bromobenzene (filtered)	Carbon tetrachloride	Carbon tetrachloride (filtered)
Table 6: Historical Leachate			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			2	5	5	5	5	5	5	2	2	5	5	2	5	5	5	5	5	5	5	5
ANZECC 2000 - Stock Watering																						
ANZG (2018) - FW - 95% (updated 26 July 2021)			160	1,900	1,900	1,100	1,100			60	60										240	240
ADWG 2011 Health (v3.6 updated 2021)			1,500	3	3					40	40										3	3
ANZECC 2000 Irrigation - Long-term Trigger Values																						
ANZECC 2000 Irrigation - Short-term Trigger Values																						
Date	**Field ID**	**Lab Report Number**																				
10/09/2013	LEACHATE POND 2	EM1309644	-	<5	-	<5	-	<5	-	<5	-	<5	-	-	<5	-	<5	-	<5	-	<5	-
18/11/2013	Landfill leachate (quarterly)	EM1312183	-	<5	-	<5	-	<5	-	<2	-	<5	-	-	<5	-	<5	-	<5	-	<5	-
4/03/2014	Landfill leachate (quarterly)	EM1401975	-	<5	-	<5	-	<5	-	<2	-	<5	-	-	<5	-	<5	-	<5	-	<5	-
2/06/2014	Landfill leachate (quarterly)	EM1405379	-	<5	-	<5	-	<5	-	<2	-	<5	-	-	<5	-	<5	-	<5	-	<5	-
17/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2/09/2014	Landfill leachate (quarterly)	EM1408979	-	<5	-	<5	-	<5	-	<2	-	<5	-	-	<5	-	<5	-	<5	-	<5	-
1/06/2015	Landfill leachate (quarterly)	EM1510467	-	<5	-	<5	-	<5	-	<2	-	<5	-	-	<5	-	<5	-	<5	-	<5	-
27/06/2016	Landfill leachate (quarterly)	EM1607483	<2	-	<5	-	<5	-	<5	-	<2	-	<5	-	-	<5	-	<5	-	<5	-	<5
22/09/2016	Landfill leachate (quarterly)	EM1611287	<2	<5	<5	<5	<5	<5	<5	<2	<2	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	<5
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/01/2017	Landfill leachate (quarterly)	EM1700066	<2	-	<5	-	<5	-	<5	-	<2	-	<5	-	-	<5	-	<5	-	<5	-	<5
23/03/2017	DWM230317	EM1703524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8/05/2017	Landfill leachate (quarterly)	EM1705724	-	<5	-	<5	-	<5	-	<2	-	<5	-	-	<5	-	<5	-	<5	-	<5	-
14/06/2017	DWM140617	EM1707709	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28/08/2017	Quarterly leachate samples	EM1711607	-	<5	-	<5	-	<5	-	<2	-	<5	-	-	<5	-	<5	-	<5	-	<5	-
6/09/2017	DWM060917	EM1712174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/09/2017	DWM110917	EM1712414	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2017	DWM200917	EM1712965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/10/2017	DWM121017	EM1714085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/06/2018	Landfill Leachate	EM1810261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19/09/2018	Leachate	EM1815239	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2018	Landfill Leachate	EM1815253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15/11/2018	Weekly Leachate	EM1818439	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/12/2018	Landfill Leachate	EM1820185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/03/2019	Landfill Leachate	EM1904168	-	<5	-	<5	-	<5	-	<2	-	<5	-	<2	<5	-	<5	-	<5	-	<5	-
26/06/2019	Landfill Leachate	EM1910175	-	<5	-	<5	-	<5	-	<2	-	<5	-	<2	<5	-	<5	-	<5	-	<5	-
9/09/2019	Landfill Leachate	EM1915222	-	<5	-	<5	-	<5	-	<2	-	<5	-	<2	<5	-	<5	-	<5	-	<5	-
11/09/2019	Landfill Leachate	EM1915222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/12/2019	Landfill Leachate	EM1921873	-	7	-	<5	-	<5	-	<2	-	<5	-	<2	<5	-	<5	-	<5	-	<5	-
17/12/2019	Landfill Leachate	EM1921873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/03/2020	Landfill Leachate	EM2005146	-	-	-	-	-	-	-	<4	-	-	-	<4	-	-	-	-	-	-	-	-
21/04/2020	Landfill Leachate	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21/04/2020	Leachate Pond	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/05/2020	Landfill Leachate	EM2007860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/05/2020	Landfill Leachate	EM2008320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16/06/2020	Landfill Leachate	EM2010246	-	<5	-	<5	-	<5	-	<2	-	<5	-	<2	<5	-	<5	-	<5	-	<5	-
16/06/2020	Landfill Leachate	EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/07/2020	Landfill Leachate	EM2012818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26/08/2020	Dulverton Leachate	EM2014788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29/09/2020	Landfill Leachate	EM2017090	-	<5	-	<5	-	<5	-	<2	-	<5	-	<2	<5	-	<5	-	<5	-	<5	-
29/09/2020	Landfill Leachate	EM2017090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/10/2020	Landfill Leachate	EM2019050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7/12/2020	Landfill Leachate	EM2021896	-	<5	-	<5	-	<5	-	<2	-	<5	-	<2	<5	-	<5	-	<5	-	<5	-
7/12/2020	Landfill Leachate	EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/05/2021	Landfill Leachate	EM2108650	-	<5	-	<5	-	<5	-	<4	-	<5	-	<4	<5	-	<5	-	<5	-	<5	-
22/06/2021	Landfill Leachate	EM2111910	-	<5	-	<5	-	<5	-	<4	-	<5	-	<4	<5	-	<5	-	<5	-	<5	-
20/07/2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/08/2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/10/2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/11/2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/12/2021	Landfill Leachate	EM2124673	-	<5	-	<5	-	<5	-	<2	-	<5	-	<2	<5	-	<5	-	<5	-	<5	-

Table 6 - Historical Leachate

															Explosives				Halogenated Hydrocarbons		
			Chlorobenzene	Chlorobenzene (filtered)	Chloroform	Chloroform (filtered)	Chloromethane	Chloromethane (filtered)	cis-1,2-dichloroethene	cis-1,2-dichloroethene (filtered)	Methylene chloride	Hexachlorobutadiene	Hexachlorobutadiene (filtered)	Vinyl chloride	Vinyl chloride (filtered)	1,3,5-Trinitrobenzene	2,4-Dinitrotoluene	2,6-dinitrotoluene	Nitrobenzene	Bromomethane	Bromomethane (filtered)	Dichlorodifluoromethane
Table 6: Historical Leachate			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/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	50	50	5	5	5	2	2	50	50	2	4	4	2	50	50	50
ANZECC 2000 - Stock Watering																						
ANZG (2018) - FW - 95% (updated 26 July 2021)			55	55	770	770					4,000			100	100		65		550			
ADWG 2011 Health (v3.6 updated 2021)			300	300							4	0.7	0.7	0.3	0.3					1	1	
ANZECC 2000 Irrigation - Long-term Trigger Values																						
ANZECC 2000 Irrigation - Short-term Trigger Values																						
Date	**Field ID**	**Lab Report Number**																				
10/09/2013	LEACHATE POND 2	EM1309644	<5	-	<5	-	<50	-	<5	-	-	<5	-	<50	-	-	-	-	-	<50	-	<50
18/11/2013	Landfill leachate (quarterly)	EM1312183	<5	-	<5	-	<50	-	<5	-	-	<2	-	<50	-	-	-	-	-	<50	-	<50
4/03/2014	Landfill leachate (quarterly)	EM1401975	<5	-	<5	-	<50	-	<5	-	-	<2	-	<50	-	-	-	-	-	<50	-	<50
2/06/2014	Landfill leachate (quarterly)	EM1405379	<5	-	<5	-	<50	-	<5	-	-	<2	-	<50	-	-	-	-	-	<50	-	<50
17/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2/09/2014	Landfill leachate (quarterly)	EM1408979	<5	-	<5	-	<50	-	<5	-	-	<2	-	<50	-	-	-	-	-	<50	-	<50
1/06/2015	Landfill leachate (quarterly)	EM1510467	<5	-	<5	-	<50	-	<5	-	-	<2	-	<50	-	-	-	-	-	<50	-	<50
27/06/2016	Landfill leachate (quarterly)	EM1607483	-	<5	-	<5	-	<50	-	<5	-	-	<2	-	<50	-	-	-	-	-	<50	-
22/09/2016	Landfill leachate (quarterly)	EM1611287	<5	<5	<5	<5	<50	<50	<5	<5	-	<2	<2	<50	<50	-	-	-	-	<50	<50	<50
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/01/2017	Landfill leachate (quarterly)	EM1700066	-	<5	-	<5	-	<50	-	<5	-	-	<2	-	<50	-	-	-	-	-	<50	-
23/03/2017	DWM230317	EM1703524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8/05/2017	Landfill leachate (quarterly)	EM1705724	<5	-	<5	-	<50	-	<5	-	-	<2	-	<50	-	-	-	-	-	<50	-	<50
14/06/2017	DWM140617	EM1707709	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28/08/2017	Quarterly leachate samples	EM1711607	<5	-	<5	-	<50	-	<5	-	-	<2	-	<50	-	-	-	-	-	<50	-	<50
6/09/2017	DWM060917	EM1712174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/09/2017	DWM110917	EM1712414	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2017	DWM200917	EM1712965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/10/2017	DWM121017	EM1714085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/06/2018	Landfill Leachate	EM1810261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19/09/2018	Leachate	EM1815239	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2018	Landfill Leachate	EM1815253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15/11/2018	Weekly Leachate	EM1818439	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/12/2018	Landfill Leachate	EM1820185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/03/2019	Landfill Leachate	EM1904168	<5	-	<5	-	<50	-	<5	-	<5	<2	-	<50	-	<2	<4	<4	<2	<50	-	<50
26/06/2019	Landfill Leachate	EM1910175	<5	-	<5	-	<50	-	<5	-	-	<2	-	<50	-	-	-	-	-	<50	-	<50
9/09/2019	Landfill Leachate	EM1915222	<5	-	<5	-	<50	-	<5	-	<5	<2	-	<50	-	<2	<4	<4	<2	<50	-	<50
11/09/2019	Landfill Leachate	EM1915222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/12/2019	Landfill Leachate	EM1921873	<5	-	<5	-	<50	-	<5	-	-	<2	-	<50	-	<2	<4	<4	<2	<50	-	<50
17/12/2019	Landfill Leachate	EM1921873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/03/2020	Landfill Leachate	EM2005146	-	-	-	-	-	-	-	-	<5	<4	-	-	-	<4	<4	<4	<4	-	-	-
21/04/2020	Landfill Leachate	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21/04/2020	Leachate Pond	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/05/2020	Landfill Leachate	EM2007860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/05/2020	Landfill Leachate	EM2008320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16/06/2020	Landfill Leachate	EM2010246	<5	-	<5	-	<50	-	<5	-	<5	<2	-	<50	-	<2	<4	<4	<2	<50	-	<50
16/06/2020	Landfill Leachate	EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/07/2020	Landfill Leachate	EM2012818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26/08/2020	Dulverton Leachate	EM2014788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29/09/2020	Landfill Leachate	EM2017090	<5	-	<5	-	<50	-	<5	-	<5	<2	-	<50	-	<2	<4	<4	<2	<50	-	<50
29/09/2020	Landfill Leachate	EM2017090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/10/2020	Landfill Leachate	EM2019050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7/12/2020	Landfill Leachate	EM2021896	<5	-	<5	-	<50	-	<5	-	<5	<2	-	<50	-	<2	<4	<4	<2	<50	-	<50
7/12/2020	Landfill Leachate	EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/05/2021	Landfill Leachate	EM2108650	<5	-	<5	-	<50	-	<5	-	-	<4	-	<50	-	<4	<4	<4	<4	<50	-	<50
22/06/2021	Landfill Leachate	EM2111910	<5	-	<5	-	<50	-	<5	-	-	<4	-	<50	-	<4	<4	<4	<4	<50	-	<50
20/07/2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/08/2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/10/2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/11/2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/12/2021	Landfill Leachate	EM2124673	<5	-	<5	-	<50	-	<5	-	-	<2	-	<50	-	<2	<4	<4	<2	<50	-	<50

Table 6 - Historical Leachate

			Herbicides																		
Table 6: Historical Leachate			Dichlorodifluoromethane (filtered)	2,6-D	2,6-D (filtered)	2,4,5-T	2,4,5-T (filtered)	2,4,5-TP (Silvex)	2,4,5-TP (Silvex) (filtered)	2,4-D (Hedonal)	2,4-D (Hedonal) (filtered)	2,4-DB	2,4-DB (filtered)	2,4-DP (dichlorprop)	2,4-DP (dichlorprop) (filtered)	2,4,6-Trichlorophenoxy-acetic acid	2,4,6-Trichlorophenoxy-acetic acid (filtered)	4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB)	Clopyralid	Clopyralid (filtered)	Dicamba	Dicamba (filtered)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			50	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
ANZECC 2000 - Stock Watering																						
ANZG (2018) - FW - 95% (updated 26 July 2021)						36	36			280	280											
ADWG 2011 Health (v3.6 updated 2021)						100	100	10	10	30	30			100	100				2,000	2,000	100	100
ANZECC 2000 Irrigation - Long-term Trigger Values																						
ANZECC 2000 Irrigation - Short-term Trigger Values																						
Date	**Field ID**	**Lab Report Number**																				
10/09/2013	LEACHATE POND 2	EM1309644	-	-	-	<10	-	<10	-	<10	-	<10	-	<10	-	-	-	-	<10	-	<10	-
18/11/2013	Landfill leachate (quarterly)	EM1312183	-	-	-	<10	-	<10	-	<10	-	<10	-	<10	-	-	-	-	<10	-	<10	-
4/03/2014	Landfill leachate (quarterly)	EM1401975	-	-	-	<10	-	<10	-	<10	-	<10	-	<10	-	<10	-	-	<10	-	<10	-
2/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-	<10	-	<10	-	<10	-	<10	-	<10	-	<10	-	-	<10	-	<10	-
17/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2/09/2014	Landfill leachate (quarterly)	EM1408979	-	-	-	<10	-	<10	-	<10	-	<10	-	<10	-	<10	-	-	<10	-	<10	-
1/06/2015	Landfill leachate (quarterly)	EM1510467	-	-	-	<20	-	<20	-	<20	-	<20	-	<20	-	<20	-	-	<20	-	<20	-
27/06/2016	Landfill leachate (quarterly)	EM1607483	<50	-	<10	-	<10	-	<10	-	<10	-	<10	-	<10	-	<10	-	-	<10	-	<10
22/09/2016	Landfill leachate (quarterly)	EM1611287	<50	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<10	<10
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/01/2017	Landfill leachate (quarterly)	EM1700066	<50	-	<10	-	<10	-	<10	-	<10	-	<10	-	<10	-	<10	-	-	<10	-	<10
23/03/2017	DWM230317	EM1703524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8/05/2017	Landfill leachate (quarterly)	EM1705724	-	<10	-	<10	-	<10	-	<10	-	<10	-	<10	-	<10	-	-	<10	-	<10	-
14/06/2017	DWM140617	EM1707709	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28/08/2017	Quarterly leachate samples	EM1711607	-	<10	-	<10	-	<10	-	<10	-	<10	-	<10	-	<10	-	-	<10	-	<10	-
6/09/2017	DWM060917	EM1712174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/09/2017	DWM110917	EM1712414	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2017	DWM200917	EM1712965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/10/2017	DWM121017	EM1714085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/06/2018	Landfill Leachate	EM1810261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19/09/2018	Leachate	EM1815239	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2018	Landfill Leachate	EM1815253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15/11/2018	Weekly Leachate	EM1818439	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/12/2018	Landfill Leachate	EM1820185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/03/2019	Landfill Leachate	EM1904168	-	<10	-	<10	-	<10	-	<10	-	-	-	<10	-	<10	-	<10	<10	-	<10	-
26/06/2019	Landfill Leachate	EM1910175	-	<10	-	<10	-	<10	-	<10	-	-	-	<10	-	<10	-	<10	<10	-	<10	-
9/09/2019	Landfill Leachate	EM1915222	-	<10	-	<10	-	<10	-	<10	-	-	-	<10	-	<10	-	<10	<10	-	<10	-
11/09/2019	Landfill Leachate	EM1915222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/12/2019	Landfill Leachate	EM1921873	-	<20	-	<20	-	<20	-	<20	-	-	-	<20	-	<20	-	<20	<19	-	<20	-
17/12/2019	Landfill Leachate	EM1921873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/03/2020	Landfill Leachate	EM2005146	-	<10	-	<10	-	<10	-	<10	-	-	-	<10	-	<10	-	<10	<10	-	<10	-
21/04/2020	Landfill Leachate	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21/04/2020	Leachate Pond	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/05/2020	Landfill Leachate	EM2007860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/05/2020	Landfill Leachate	EM2008320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16/06/2020	Landfill Leachate	EM2010246	-	<10	-	<10	-	<10	-	<10	-	-	-	<10	-	<10	-	<10	<10	-	<10	-
16/06/2020	Landfill Leachate	EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/07/2020	Landfill Leachate	EM2012818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26/08/2020	Dulverton Leachate	EM2014788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29/09/2020	Landfill Leachate	EM2017090	-	<10	-	<10	-	<10	-	<10	-	-	-	<10	-	<10	-	<10	<10	-	<10	-
29/09/2020	Landfill Leachate	EM2017090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/10/2020	Landfill Leachate	EM2019050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7/12/2020	Landfill Leachate	EM2021896	-	<10	-	<10	-	<10	-	<10	-	-	-	<10	-	<10	-	<10	<10	-	<10	-
7/12/2020	Landfill Leachate	EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/05/2021	Landfill Leachate	EM2108650	-	<10	-	<10	-	<10	-	<10	-	-	-	<10	-	<10	-	<10	<10	-	<10	-
22/06/2021	Landfill Leachate	EM2111910	-	<10	-	<10	-	<10	-	<10	-	-	-	<10	-	<10	-	<10	<10	-	<10	-
20/07/2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/08/2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/10/2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/11/2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/12/2021	Landfill Leachate	EM2124673	-	<10	-	<10	-	<10	-	<10	-	-	-	<10	-	<10	-	<10	<10	-	<10	-

Table 6 - Historical Leachate

															Nitroaromatics and Keytones					Solv	
			Fluroxypyr	Fluroxypyr (filtered)	MCPA	MCPA (filtered)	MCPB	MCPB (filtered)	Mecoprop	Mecoprop (filtered)	Picloram	Picloram (filtered)	Pronamide	Triclopyr	Triclopyr (filtered)	2-Picoline	4-aminobiphenyl	Acetophenone	N-Nitrosodiphenyl & Diphenylamine	Pentachloronitrobenzene	2-hexanone (MBK)	Carbon disulfide
Table 6: Historical Leachate			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			10	10	10	10	10	10	10	10	10	10	2	10	10	2	2	2	4	2	50	5
ANZECC 2000 - Stock Watering																						
ANZG (2018) - FW - 95% (updated 26 July 2021)																						
ADWG 2011 Health (v3.6 updated 2021)					40	40					300	300	70	20	20					30		
ANZECC 2000 Irrigation - Long-term Trigger Values																						
ANZECC 2000 Irrigation - Short-term Trigger Values																						
Date	**Field ID**	**Lab Report Number**																				
10/09/2013	LEACHATE POND 2	EM1309644	<10	-	26	-	<10	-	<10	-	<10	-	-	<10	-	-	-	-	-	-	-	-
18/11/2013	Landfill leachate (quarterly)	EM1312183	<10	-	<10	-	<10	-	<10	-	<10	-	-	<10	-	-	-	-	-	-	-	-
4/03/2014	Landfill leachate (quarterly)	EM1401975	<10	-	<10	-	<10	-	<10	-	<10	-	-	<10	-	-	-	-	-	-	-	-
2/06/2014	Landfill leachate (quarterly)	EM1405379	<10	-	<10	-	<10	-	<10	-	<10	-	-	<10	-	-	-	-	-	-	-	-
17/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2/09/2014	Landfill leachate (quarterly)	EM1408979	<10	-	<10	-	<10	-	<10	-	<10	-	-	<10	-	-	-	-	-	-	-	-
1/06/2015	Landfill leachate (quarterly)	EM1510467	<20	-	<20	-	<20	-	<20	-	<20	-	-	<20	-	-	-	-	-	-	-	-
27/06/2016	Landfill leachate (quarterly)	EM1607483	-	<10	-	<10	-	<10	-	<10	-	<10	-	-	<10	-	-	-	-	-	-	-
22/09/2016	Landfill leachate (quarterly)	EM1611287	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	-	<10	<10	-	-	-	-	-	-	-
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/01/2017	Landfill leachate (quarterly)	EM1700066	-	<10	-	<10	-	<10	-	<10	-	<10	-	-	<10	-	-	-	-	-	-	-
23/03/2017	DWM230317	EM1703524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8/05/2017	Landfill leachate (quarterly)	EM1705724	<10	-	<10	-	<10	-	<10	-	<10	-	-	<10	-	-	-	-	-	-	-	-
14/06/2017	DWM140617	EM1707709	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28/08/2017	Quarterly leachate samples	EM1711607	<10	-	<10	-	<10	-	<10	-	<10	-	-	<10	-	-	-	-	-	-	-	-
6/09/2017	DWM060917	EM1712174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/09/2017	DWM110917	EM1712414	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2017	DWM200917	EM1712965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/10/2017	DWM121017	EM1714085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/06/2018	Landfill Leachate	EM1810261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19/09/2018	Leachate	EM1815239	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2018	Landfill Leachate	EM1815253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15/11/2018	Weekly Leachate	EM1818439	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/12/2018	Landfill Leachate	EM1820185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/03/2019	Landfill Leachate	EM1904168	<10	-	<10	-	<10	-	<10	-	<10	-	<2	<10	-	2	<2	3	<4	<2	<50	6
26/06/2019	Landfill Leachate	EM1910175	<10	-	<10	-	<10	-	<10	-	<10	-	-	<10	-	-	-	-	-	-	<50	-
9/09/2019	Landfill Leachate	EM1915222	<10	-	<10	-	<10	-	<10	-	<10	-	<2	<10	-	<2	<2	<2	<4	<2	<50	<5
11/09/2019	Landfill Leachate	EM1915222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/12/2019	Landfill Leachate	EM1921873	<20	-	<20	-	<20	-	<20	-	<20	-	<2	<20	-	7	<2	5	<4	<2	-	-
17/12/2019	Landfill Leachate	EM1921873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/03/2020	Landfill Leachate	EM2005146	<10	-	<10	-	<10	-	<10	-	<10	-	<4	<10	-	<4	<4	<4	<4	<4	-	-
21/04/2020	Landfill Leachate	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21/04/2020	Leachate Pond	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/05/2020	Landfill Leachate	EM2007860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/05/2020	Landfill Leachate	EM2008320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16/06/2020	Landfill Leachate	EM2010246	<10	-	<10	-	<10	-	<10	-	<10	-	<2	<10	-	<2	<2	<2	<4	<2	<50	<5
16/06/2020	Landfill Leachate	EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/07/2020	Landfill Leachate	EM2012818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26/08/2020	Dulverton Leachate	EM2014788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29/09/2020	Landfill Leachate	EM2017090	<10	-	<10	-	<10	-	<10	-	<10	-	<2	<10	-	<2	<2	<2	<4	<2	<50	<5
29/09/2020	Landfill Leachate	EM2017090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/10/2020	Landfill Leachate	EM2019050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7/12/2020	Landfill Leachate	EM2021896	<10	-	<10	-	<10	-	<10	-	<10	-	<2	<10	-	<2	<2	<2	<4	<2	<50	-
7/12/2020	Landfill Leachate	EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/05/2021	Landfill Leachate	EM2108650	<10	-	<10	-	<10	-	<10	-	<10	-	<4	<10	-	<4	<4	<4	<4	<4	-	-
22/06/2021	Landfill Leachate	EM2111910	<10	-	<10	-	<10	-	<10	-	<10	-	<4	<10	-	<4	<4	<4	<4	<4	<50	-
20/07/2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/08/2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/10/2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/11/2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/12/2021	Landfill Leachate	EM2124673	<10	-	<10	-	<10	-	<10	-	<10	-	<2	<10	-	9	<2	6	<4	<2	<50	-

Table 6 - Historical Leachate

			ents		PCBs		Phthalates						Surfactants		MAH							
			Isophorone	Vinyl acetate	PCBs (Total)	PCBs (Total) (filtered)	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Diethylphthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate	Anionic Surfactants as MBAS	Anionic Surfactants as MBAS (filtered)	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Isopropylbenzene	Styrene	n-butylbenzene	n-propylbenzene	sec-butylbenzene	tert-butylbenzene
Table 6: Historical Leachate			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			2	50	1	1	10	2	2	2	2	2	50	50	5	5	5	5	5	5	5	5
ANZECC 2000 - Stock Watering																						
ANZG (2018) - FW - 95% (updated 26 July 2021)									1,000	3,700	26						30					
ADWG 2011 Health (v3.6 updated 2021)							10											30				
ANZECC 2000 Irrigation - Long-term Trigger Values																						
ANZECC 2000 Irrigation - Short-term Trigger Values																						
Date	**Field ID**	**Lab Report Number**																				
10/09/2013	LEACHATE POND 2	EM1309644	-	-	<1	-	-	-	-	-	-	-	300	-	-	-	-	-	-	-	-	-
18/11/2013	Landfill leachate (quarterly)	EM1312183	-	-	<1	-	-	-	-	-	-	-	200	-	-	-	-	-	-	-	-	-
4/03/2014	Landfill leachate (quarterly)	EM1401975	-	-	<1	-	-	-	-	-	-	-	400	-	-	-	-	-	-	-	-	-
2/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	<1	-	-	-	-	-	-	-	200	-	-	-	-	-	-	-	-	-
17/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2/09/2014	Landfill leachate (quarterly)	EM1408979	-	-	<1	-	-	-	-	-	-	-	300	-	-	-	-	-	-	-	-	-
1/06/2015	Landfill leachate (quarterly)	EM1510467	-	-	<1	-	-	-	-	-	-	-	100	-	-	-	-	-	-	-	-	-
27/06/2016	Landfill leachate (quarterly)	EM1607483	-	-	-	<1	-	-	-	-	-	-	-	500	-	-	-	-	-	-	-	-
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/01/2017	Landfill leachate (quarterly)	EM1700066	-	-	-	<1	-	-	-	-	-	-	-	600	-	-	-	-	-	-	-	-
23/03/2017	DWM230317	EM1703524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8/05/2017	Landfill leachate (quarterly)	EM1705724	-	-	<1	-	-	-	-	-	-	-	700	-	-	-	-	-	-	-	-	-
14/06/2017	DWM140617	EM1707709	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28/08/2017	Quarterly leachate samples	EM1711607	-	-	<3	-	-	-	-	-	-	-	800	-	-	-	-	-	-	-	-	-
6/09/2017	DWM060917	EM1712174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/09/2017	DWM110917	EM1712414	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2017	DWM200917	EM1712965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/10/2017	DWM121017	EM1714085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/06/2018	Landfill Leachate	EM1810261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19/09/2018	Leachate	EM1815239	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2018	Landfill Leachate	EM1815253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15/11/2018	Weekly Leachate	EM1818439	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/12/2018	Landfill Leachate	EM1820185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/03/2019	Landfill Leachate	EM1904168	<2	<50	<1	-	<10	<2	<2	<2	<2	<2	1,200	-	<5	<5	<5	<5	<5	<5	<5	<5
26/06/2019	Landfill Leachate	EM1910175	-	<50	<1	-	-	-	-	-	-	-	400	-	-	-	-	-	-	-	-	-
9/09/2019	Landfill Leachate	EM1915222	<2	<50	<2	-	<10	<2	<2	<2	<2	<2	1,000	-	<5	<5	<5	<5	<5	<5	<5	<5
11/09/2019	Landfill Leachate	EM1915222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/12/2019	Landfill Leachate	EM1921873	<2	-	<1	-	<10	<2	<2	<2	<2	<2	2,700	-	-	-	-	-	-	-	-	-
17/12/2019	Landfill Leachate	EM1921873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/03/2020	Landfill Leachate	EM2005146	<4	-	<1	-	<10	<4	<4	<4	<4	<4	1,900	-	-	-	-	-	-	-	-	-
21/04/2020	Landfill Leachate	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21/04/2020	Leachate Pond	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/05/2020	Landfill Leachate	EM2007860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/05/2020	Landfill Leachate	EM2008320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16/06/2020	Landfill Leachate	EM2010246	<2	<50	<1	-	<10	<2	<2	<2	<2	<2	800	-	<5	<5	<5	<5	<5	<5	<5	<5
16/06/2020	Landfill Leachate	EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/07/2020	Landfill Leachate	EM2012818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26/08/2020	Dulverton Leachate	EM2014788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29/09/2020	Landfill Leachate	EM2017090	<2	<50	<1	-	<10	<2	<2	<2	<2	<2	500	-	10	<5	<5	<5	<5	<5	<5	<5
29/09/2020	Landfill Leachate	EM2017090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/10/2020	Landfill Leachate	EM2019050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7/12/2020	Landfill Leachate	EM2021896	<2	<50	<1	-	<10	<2	<2	<2	<2	<2	1,500	-	-	-	-	-	-	-	-	-
7/12/2020	Landfill Leachate	EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/05/2021	Landfill Leachate	EM2108650	<4	-	<1	-	<10	<4	<4	<4	<4	<4	1,000	-	-	-	-	-	-	-	-	-
22/06/2021	Landfill Leachate	EM2111910	<4	<50	<1	-	<10	<4	<4	<4	<4	<4	700	-	-	-	-	-	-	-	-	-
20/07/2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/08/2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/10/2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/11/2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/12/2021	Landfill Leachate	EM2124673	<2	<50	<1	-	<10	<2	<2	<2	<2	<2	2,700	-	-	-	-	-	-	-	-	-

Table 6 - Historical Leachate

																						SVOCs
			p-isopropyltoluene	1-naphthylamine	2-(acetylamino) fluorene	2-nitroaniline	3,3-Dichlorobenzidine	3-nitroaniline	4-(dimethylamino) azobenzene	4-bromophenyl phenyl ether	4-chloroaniline	4-chlorophenyl phenyl ether	4-nitroaniline	4-Nitroquinoline-N-oxide	5-nitro-o-toluidine	Aniline	Azobenzene	Bis(2-chloroethoxy) methane	Bis(2-chloroethyl)ether	Carbazole	Chlorobenzilate	Dibenzofuran
Table 6: Historical Leachate			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			5	2	2	4	2	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2
ANZECC 2000 - Stock Watering																						
ANZG (2018) - FW - 95% (updated 26 July 2021)																250						
ADWG 2011 Health (v3.6 updated 2021)																						
ANZECC 2000 Irrigation - Long-term Trigger Values																						
ANZECC 2000 Irrigation - Short-term Trigger Values																						
Date	**Field ID**	**Lab Report Number**																				
10/09/2013	LEACHATE POND 2	EM1309644	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/11/2013	Landfill leachate (quarterly)	EM1312183	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4/03/2014	Landfill leachate (quarterly)	EM1401975	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2/09/2014	Landfill leachate (quarterly)	EM1408979	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1/06/2015	Landfill leachate (quarterly)	EM1510467	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/06/2016	Landfill leachate (quarterly)	EM1607483	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/01/2017	Landfill leachate (quarterly)	EM1700066	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23/03/2017	DWM230317	EM1703524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8/05/2017	Landfill leachate (quarterly)	EM1705724	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14/06/2017	DWM140617	EM1707709	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28/08/2017	Quarterly leachate samples	EM1711607	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/09/2017	DWM060917	EM1712174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/09/2017	DWM110917	EM1712414	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2017	DWM200917	EM1712965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/10/2017	DWM121017	EM1714085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/06/2018	Landfill Leachate	EM1810261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19/09/2018	Leachate	EM1815239	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2018	Landfill Leachate	EM1815253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15/11/2018	Weekly Leachate	EM1818439	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/12/2018	Landfill Leachate	EM1820185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/03/2019	Landfill Leachate	EM1904168	<5	<2	<2	<4	<2	<4	<2	<2	<2	<2	<2	<2	<2	24	<2	<2	<2	<2	<2	<2
26/06/2019	Landfill Leachate	EM1910175	-	-	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9/09/2019	Landfill Leachate	EM1915222	<5	<2	<2	<4	<2	<4	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
11/09/2019	Landfill Leachate	EM1915222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/12/2019	Landfill Leachate	EM1921873	-	<2	<2	<4	<2	<4	<2	<2	<2	<2	<2	<2	<2	27	<2	<2	<2	<2	<2	<2
17/12/2019	Landfill Leachate	EM1921873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/03/2020	Landfill Leachate	EM2005146	-	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
21/04/2020	Landfill Leachate	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21/04/2020	Leachate Pond	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/05/2020	Landfill Leachate	EM2007860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/05/2020	Landfill Leachate	EM2008320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16/06/2020	Landfill Leachate	EM2010246	<5	<2	<2	<4	<2	<4	<2	<2	<2	<2	<2	<2	<2	4	<2	<2	<2	<2	<2	<2
16/06/2020	Landfill Leachate	EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/07/2020	Landfill Leachate	EM2012818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26/08/2020	Dulverton Leachate	EM2014788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29/09/2020	Landfill Leachate	EM2017090	<5	<2	<2	<4	<2	<4	<2	<2	<2	<2	<2	<2	<2	3	<2	<2	<2	<2	<2	<2
29/09/2020	Landfill Leachate	EM2017090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/10/2020	Landfill Leachate	EM2019050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7/12/2020	Landfill Leachate	EM2021896	-	<2	<2	<4	<2	<4	<2	<2	<2	<2	<2	<2	<2	3	<2	<2	<2	<2	<2	<2
7/12/2020	Landfill Leachate	EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/05/2021	Landfill Leachate	EM2108650	-	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
22/06/2021	Landfill Leachate	EM2111910	-	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	6	<4	<4	<4	<4	<4	<4
20/07/2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/08/2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/10/2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/11/2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/12/2021	Landfill Leachate	EM2124673	-	<2	<2	<4	<2	<4	<2	<2	<2	<2	<2	<2	<2	59	<2	<2	<2	<2	<2	<2

Table 6 - Historical Leachate

Table 6: Historical Leachate			Hexachlorocyclopentadiene µg/L	Hexachlorocyclopentadiene (filtered) µg/L	Hexachloroethane µg/L	Hexachloroethane (filtered) µg/L	Hexachloropropene µg/L	Hexachloropropene (filtered) µg/L	Methapyrilene µg/L	N-nitrosodiethylamine µg/L	N-nitrosodi-n-butylamine µg/L	N-nitrosodi-n-propylamine µg/L	N-Nitrosomethylethylamine µg/L	N-nitrosomorpholine µg/L	N-nitrosopiperidine µg/L	N-nitrosopyrrolidine µg/L	Pentachlorobenzene µg/L	Pentachlorobenzene (filtered) µg/L	Phenacetin µg/L	1,1-dichloroethane µg/L	1,1-dichloroethane (filtered) µg/L	1,2,3-trichlorobenzene µg/L
EQL			10	10	2	2	2	2	2	2	2	2	2	2	2	4	2	2	2	5	5	5
ANZECC 2000 - Stock Watering																						
ANZG (2018) - FW - 95% (updated 26 July 2021)					360	360											2	2				10
ADWG 2011 Health (v3.6 updated 2021)																						
ANZECC 2000 Irrigation - Long-term Trigger Values																						
ANZECC 2000 Irrigation - Short-term Trigger Values																						
Date	**Field ID**	**Lab Report Number**																				
10/09/2013	LEACHATE POND 2	EM1309644	<100	-	<20	-	<20	-	-	-	-	-	-	-	-	-	<20	-	-	<5	-	<5
18/11/2013	Landfill leachate (quarterly)	EM1312183	<10	-	<2	-	<2	-	-	-	-	-	-	-	-	-	<2	-	-	<5	-	<5
4/03/2014	Landfill leachate (quarterly)	EM1401975	<10	-	<2	-	<2	-	-	-	-	-	-	-	-	-	<2	-	-	<5	-	<5
2/06/2014	Landfill leachate (quarterly)	EM1405379	<10	-	<2	-	<2	-	-	-	-	-	-	-	-	-	<2	-	-	<5	-	<5
17/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2/09/2014	Landfill leachate (quarterly)	EM1408979	<10	-	<2	-	<2	-	-	-	-	-	-	-	-	-	<2	-	-	<5	-	<5
1/06/2015	Landfill leachate (quarterly)	EM1510467	<10	-	<2	-	<2	-	-	-	-	-	-	-	-	-	<2	-	-	<5	-	<5
27/06/2016	Landfill leachate (quarterly)	EM1607483	-	<10	-	<2	-	<2	-	-	-	-	-	-	-	-	-	<2	-	-	<5	-	
22/09/2016	Landfill leachate (quarterly)	EM1611287	<10	<10	<2	<2	<2	<2	-	-	-	-	-	-	-	-	<2	<2	-	<5	<5	<5
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/01/2017	Landfill leachate (quarterly)	EM1700066	-	<10	-	<2	-	<2	-	-	-	-	-	-	-	-	-	<2	-	-	<5	-	
23/03/2017	DWM230317	EM1703524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8/05/2017	Landfill leachate (quarterly)	EM1705724	<10	-	<2	-	<2	-	-	-	-	-	-	-	-	-	<2	-	-	<5	-	<5
14/06/2017	DWM140617	EM1707709	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28/08/2017	Quarterly leachate samples	EM1711607	<10	-	<2	-	<2	-	-	-	-	-	-	-	-	-	<2	-	-	<5	-	<5
6/09/2017	DWM060917	EM1712174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/09/2017	DWM110917	EM1712414	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2017	DWM200917	EM1712965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/10/2017	DWM121017	EM1714085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/06/2018	Landfill Leachate	EM1810261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19/09/2018	Leachate	EM1815239	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2018	Landfill Leachate	EM1815253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15/11/2018	Weekly Leachate	EM1818439	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/12/2018	Landfill Leachate	EM1820185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/03/2019	Landfill Leachate	EM1904168	<10	-	<2	-	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2	-	<2	<5	-	<5
26/06/2019	Landfill Leachate	EM1910175	<10	-	<2	-	<2	-	-	-	-	-	-	-	-	-	<2	-	-	<5	-	<5
9/09/2019	Landfill Leachate	EM1915222	<10	-	<2	-	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2	-	<2	<5	-	<5
11/09/2019	Landfill Leachate	EM1915222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/12/2019	Landfill Leachate	EM1921873	<10	-	<2	-	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2	-	<2	<5	-	<5
17/12/2019	Landfill Leachate	EM1921873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/03/2020	Landfill Leachate	EM2005146	<10	-	<4	-	<4	-	<4	<4	<4	<4	<4	<4	<4	<4	<4	-	<4	-	-	-
21/04/2020	Landfill Leachate	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21/04/2020	Leachate Pond	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/05/2020	Landfill Leachate	EM2007860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/05/2020	Landfill Leachate	EM2008320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16/06/2020	Landfill Leachate	EM2010246	<10	-	<2	-	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2	-	<2	<5	-	<5
16/06/2020	Landfill Leachate	EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/07/2020	Landfill Leachate	EM2012818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26/08/2020	Dulverton Leachate	EM2014788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29/09/2020	Landfill Leachate	EM2017090	<10	-	<2	-	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2	-	<2	<5	-	<5
29/09/2020	Landfill Leachate	EM2017090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/10/2020	Landfill Leachate	EM2019050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7/12/2020	Landfill Leachate	EM2021896	<10	-	<2	-	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2	-	<2	<5	-	<5
7/12/2020	Landfill Leachate	EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/05/2021	Landfill Leachate	EM2108650	<10	-	<4	-	<4	-	<4	<4	<4	<4	<4	<4	<4	<4	<4	-	<4	<5	-	<5
22/06/2021	Landfill Leachate	EM2111910	<10	-	<4	-	<4	-	<4	<4	<4	<4	<4	<4	<4	<4	<4	-	<4	<5	-	<5
20/07/2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/08/2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/10/2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/11/2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/12/2021	Landfill Leachate	EM2124673	<10	-	<2	-	<2	-	<2	<2	<2	<2	<2	<2	<2	<4	<2	-	<2	<5	-	<5

Table 6 - Historical Leachate

																						VOCs
Table 6: Historical Leachate			1,2,3-trichlorobenzene (filtered)	1,2,3-trichloropropane	1,2,3-trichloropropane (filtered)	1,2-dibromoethane	1,3-dichlorobenzene	1,3-dichlorobenzene (filtered)	2-butanone (MEK)	4-methyl-2-pentanone (MIBK)	Acetone	Acetone (filtered)	Bromodichloromethane	Bromodichloromethane (filtered)	Bromoform	Bromoform (filtered)	Chlorodibromomethane	Chlorodibromomethane (filtered)	Chloroethane	Chloroethane (filtered)	cis-1,3-dichloropropene	cis-1,3-dichloropropene (filtered)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/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	2	2	50	50	50	50	5	5	5	5	5	5	50	50	5	5
ANZECC 2000 - Stock Watering																						
ANZG (2018) - FW - 95% (updated 26 July 2021)			10				260	260														
ADWG 2011 Health (v3.6 updated 2021)						1																
ANZECC 2000 Irrigation - Long-term Trigger Values																						
ANZECC 2000 Irrigation - Short-term Trigger Values																						
Date	**Field ID**	**Lab Report Number**																				
10/09/2013	LEACHATE POND 2	EM1309644	-	<5	-	-	<5	-	-	-	1,270	-	<5	-	<5	-	<5	-	<50	-	<5	-
18/11/2013	Landfill leachate (quarterly)	EM1312183	-	<5	-	-	<2	-	-	-	<50	-	<5	-	<5	-	<5	-	<50	-	<5	-
4/03/2014	Landfill leachate (quarterly)	EM1401975	-	<5	-	-	<2	-	-	-	<50	-	<5	-	<5	-	<5	-	<50	-	<5	-
2/06/2014	Landfill leachate (quarterly)	EM1405379	-	<5	-	-	<2	-	-	-	560	-	<5	-	<5	-	<5	-	<50	-	<5	-
17/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2/09/2014	Landfill leachate (quarterly)	EM1408979	-	<5	-	-	<2	-	-	-	290	-	<5	-	<5	-	<5	-	<50	-	<5	-
1/06/2015	Landfill leachate (quarterly)	EM1510467	-	<5	-	-	<2	-	-	-	<100	-	<5	-	<5	-	<5	-	<50	-	<5	-
27/06/2016	Landfill leachate (quarterly)	EM1607483	<5	-	<5	-	-	<2	-	-	-	440	-	<5	-	<5	-	<5	-	<50	-	<5
22/09/2016	Landfill leachate (quarterly)	EM1611287	<5	<5	<5	-	<2	<2	-	-	240	240	<5	<5	<5	<5	<5	<5	<50	<50	<5	<5
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/01/2017	Landfill leachate (quarterly)	EM1700066	<5	-	<5	-	-	<2	-	-	-	<50	-	<5	-	<5	-	<5	-	<50	-	<5
23/03/2017	DWM230317	EM1703524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8/05/2017	Landfill leachate (quarterly)	EM1705724	-	<5	-	-	<2	-	-	-	<50	-	<5	-	<5	-	<5	-	<50	-	<5	-
14/06/2017	DWM140617	EM1707709	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28/08/2017	Quarterly leachate samples	EM1711607	-	<5	-	-	<2	-	-	-	80	-	<5	-	<5	-	<5	-	<50	-	<5	-
6/09/2017	DWM060917	EM1712174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/09/2017	DWM110917	EM1712414	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2017	DWM200917	EM1712965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/10/2017	DWM121017	EM1714085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/06/2018	Landfill Leachate	EM1810261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19/09/2018	Leachate	EM1815239	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2018	Landfill Leachate	EM1815253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15/11/2018	Weekly Leachate	EM1818439	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/12/2018	Landfill Leachate	EM1820185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/03/2019	Landfill Leachate	EM1904168	-	<5	-	<5	<2	-	90	<50	170	-	<5	-	<5	-	<5	-	<50	-	<5	-
26/06/2019	Landfill Leachate	EM1910175	-	<5	-	<5	<2	-	<50	<50	120	-	<5	-	<5	-	<5	-	<50	-	<5	-
9/09/2019	Landfill Leachate	EM1915222	-	<5	-	<5	<2	-	<50	<50	<50	-	<5	-	<5	-	<5	-	<50	-	<5	-
11/09/2019	Landfill Leachate	EM1915222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/12/2019	Landfill Leachate	EM1921873	-	<5	-	<5	<2	-	-	<50	-	-	<5	-	<5	-	<5	-	<50	-	<5	-
17/12/2019	Landfill Leachate	EM1921873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/03/2020	Landfill Leachate	EM2005146	-	-	-	-	<4	-	-	-	130	-	-	-	-	-	-	-	-	-	-	-
21/04/2020	Landfill Leachate	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21/04/2020	Leachate Pond	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/05/2020	Landfill Leachate	EM2007860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/05/2020	Landfill Leachate	EM2008320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16/06/2020	Landfill Leachate	EM2010246	-	<5	-	<5	<2	-	<50	<50	90	-	<5	-	<5	-	<5	-	<50	-	<5	-
16/06/2020	Landfill Leachate	EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/07/2020	Landfill Leachate	EM2012818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26/08/2020	Dulverton Leachate	EM2014788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29/09/2020	Landfill Leachate	EM2017090	-	<5	-	<5	<2	-	<50	<50	50	-	<5	-	<5	-	<5	-	<50	-	<5	-
29/09/2020	Landfill Leachate	EM2017090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/10/2020	Landfill Leachate	EM2019050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7/12/2020	Landfill Leachate	EM2021896	-	<5	-	<5	<2	-	220	<50	140	-	<5	-	<5	-	<5	-	<50	-	<5	-
7/12/2020	Landfill Leachate	EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/05/2021	Landfill Leachate	EM2108650	-	<5	-	<5	<4	-	-	-	<50	-	<5	-	<5	-	<5	-	<50	-	<5	-
22/06/2021	Landfill Leachate	EM2111910	-	<5	-	<5	<4	-	<50	<50	<50	-	<5	-	<5	-	<5	-	<50	-	<5	-
20/07/2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/08/2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/10/2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/11/2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/12/2021	Landfill Leachate	EM2124673	-	<5	-	<5	<2	-	350	<50	510	-	<5	-	<5	-	<5	-	<50	-	<5	-

Table 6 - Historical Leachate

Table 6: Historical Leachate			cis-1,4-Dichloro-2-butene µg/L	cis-1,4-Dichloro-2-butene (filtered) µg/L	Dibromomethane µg/L	Dibromomethane (filtered) µg/L	Formaldehyde µg/L	Formaldehyde (filtered) µg/L	Iodomethane µg/L	Iodomethane (filtered) µg/L	Pentachloroethane µg/L	Pentachloroethane (filtered) µg/L	Trichloroethene µg/L	Trichloroethene (filtered) µg/L	Tetrachloroethene µg/L	Tetrachloroethene (filtered) µg/L	trans-1,3-dichloropropene µg/L	trans-1,3-dichloropropene (filtered) µg/L	trans-1,2-dichloroethene µg/L	trans-1,2-dichloroethene (filtered) µg/L	trans-1,4-Dichloro-2-butene µg/L	trans-1,4-Dichloro-2-butene (filtered) µg/L
EQL			5	5	5	5	100	100	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
ANZECC 2000 - Stock Watering																							
ANZG (2018) - FW - 95% (updated 26 July 2021)											80	80	330	330	70	70							
ADWG 2011 Health (v3.6 updated 2021)							500	500							50	50							
ANZECC 2000 Irrigation - Long-term Trigger Values																							
ANZECC 2000 Irrigation - Short-term Trigger Values																							
Date	**Field ID**	**Lab Report Number**																					
10/09/2013	LEACHATE POND 2	EM1309644	<5	-	<5	-	2,000	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	-
18/11/2013	Landfill leachate (quarterly)	EM1312183	<5	-	<5	-	700	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	-
4/03/2014	Landfill leachate (quarterly)	EM1401975	<5	-	<5	-	600	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	-
2/06/2014	Landfill leachate (quarterly)	EM1405379	<5	-	<5	-	-	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	-
17/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-	-	4,700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2/09/2014	Landfill leachate (quarterly)	EM1408979	<5	-	<5	-	900	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	-
1/06/2015	Landfill leachate (quarterly)	EM1510467	<5	-	<5	-	2,600	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	-
27/06/2016	Landfill leachate (quarterly)	EM1607483	-	<5	-	<5	-	1,300	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-
22/09/2016	Landfill leachate (quarterly)	EM1611287	<5	<5	<5	<5	600	600	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/01/2017	Landfill leachate (quarterly)	EM1700066	-	<5	-	<5	-	900	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-
23/03/2017	DWM230317	EM1703524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8/05/2017	Landfill leachate (quarterly)	EM1705724	<5	-	<5	-	1,100	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	-
14/06/2017	DWM140617	EM1707709	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28/08/2017	Quarterly leachate samples	EM1711607	<5	-	<5	-	800	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	-
6/09/2017	DWM060917	EM1712174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/09/2017	DWM110917	EM1712414	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2017	DWM200917	EM1712965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/10/2017	DWM121017	EM1714085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/06/2018	Landfill Leachate	EM1810261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19/09/2018	Leachate	EM1815239	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/09/2018	Landfill Leachate	EM1815253	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15/11/2018	Weekly Leachate	EM1818439	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/12/2018	Landfill Leachate	EM1820185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20/03/2019	Landfill Leachate	EM1904168	<5	-	<5	-	<500	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	-
26/06/2019	Landfill Leachate	EM1910175	<5	-	<5	-	700	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	-
9/09/2019	Landfill Leachate	EM1915222	<5	-	<5	-	1,800	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	-
11/09/2019	Landfill Leachate	EM1915222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/12/2019	Landfill Leachate	EM1921873	<5	-	<5	-	200	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	-
17/12/2019	Landfill Leachate	EM1921873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25/03/2020	Landfill Leachate	EM2005146	-	-	-	-	2,100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21/04/2020	Landfill Leachate	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21/04/2020	Leachate Pond	EM2006671	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/05/2020	Landfill Leachate	EM2007860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/05/2020	Landfill Leachate	EM2008320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16/06/2020	Landfill Leachate	EM2010246	<5	-	<5	-	800	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	-
16/06/2020	Landfill Leachate	EM2010246	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22/07/2020	Landfill Leachate	EM2012818	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26/08/2020	Dulverton Leachate	EM2014788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29/09/2020	Landfill Leachate	EM2017090	<5	-	<5	-	1,200	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	-
29/09/2020	Landfill Leachate	EM2017090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/10/2020	Landfill Leachate	EM2019050	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7/12/2020	Landfill Leachate	EM2021896	<5	-	<5	-	300	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	-
7/12/2020	Landfill Leachate	EM2021896	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12/05/2021	Landfill Leachate	EM2108650	<5	-	<5	-	1,000	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	-
22/06/2021	Landfill Leachate	EM2111910	<5	-	<5	-	600	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	-
20/07/2021	Landfill Leachate	EM2114040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/08/2021	Landfill Leachate	EM2116503	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/10/2021	Landfill Leachate	EM2120767	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17/11/2021	Pomona (landfill leachate)	EM2123125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6/12/2021	Landfill Leachate	EM2124673	<5	-	<5	-	6,600	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	<5	-	-

Table 6 - Historical Leachate

			Algae
	Trichlorofluoromethane	Trichlorofluoromethane (filtered)	ALGAL COUNT
Table 6: Historical Leachate	µg/L	µg/L	-
EQL	50	50	
ANZECC 2000 - Stock Watering			
ANZG (2018) - FW - 95% (updated 26 July 2021)			
ADWG 2011 Health (v3.6 updated 2021)			
ANZECC 2000 Irrigation - Long-term Trigger Values			
ANZECC 2000 Irrigation - Short-term Trigger Values			

Date	Field ID	Lab Report Number			
10/09/2013	LEACHATE POND 2	EM1309644	<50	-	-
18/11/2013	Landfill leachate (quarterly)	EM1312183	<50	-	-
4/03/2014	Landfill leachate (quarterly)	EM1401975	<50	-	-
2/06/2014	Landfill leachate (quarterly)	EM1405379	<50	-	-
17/06/2014	Landfill leachate (quarterly)	EM1405379	-	-	-
2/09/2014	Landfill leachate (quarterly)	EM1408979	<50	-	-
1/06/2015	Landfill leachate (quarterly)	EM1510467	<50	-	-
27/06/2016	Landfill leachate (quarterly)	EM1607483	-	<50	-
22/09/2016	Landfill leachate (quarterly)	EM1611287	<50	<50	-
22/09/2016	Landfill leachate (quarterly)	EM1611287	-	-	-
5/01/2017	Landfill leachate (quarterly)	EM1700066	-	<50	-
23/03/2017	DWM230317	EM1703524	-	-	-
8/05/2017	Landfill leachate (quarterly)	EM1705724	<50	-	-
14/06/2017	DWM140617	EM1707709	-	-	-
28/08/2017	Quarterly leachate samples	EM1711607	<50	-	-
6/09/2017	DWM060917	EM1712174	-	-	-
11/09/2017	DWM110917	EM1712414	-	-	-
20/09/2017	DWM200917	EM1712965	-	-	-
12/10/2017	DWM121017	EM1714085	-	-	-
25/06/2018	Landfill Leachate	EM1810261	-	-	-
19/09/2018	Leachate	EM1815239	-	-	-
20/09/2018	Landfill Leachate	EM1815253	-	-	-
15/11/2018	Weekly Leachate	EM1818439	-	-	-
12/12/2018	Landfill Leachate	EM1820185	-	-	-
20/03/2019	Landfill Leachate	EM1904168	<50	-	-
26/06/2019	Landfill Leachate	EM1910175	<50	-	-
9/09/2019	Landfill Leachate	EM1915222	<50	-	-
11/09/2019	Landfill Leachate	EM1915222	-	-	-
17/12/2019	Landfill Leachate	EM1921873	<50	-	-
17/12/2019	Landfill Leachate	EM1921873	-	-	-
25/03/2020	Landfill Leachate	EM2005146	-	-	-
21/04/2020	Landfill Leachate	EM2006671	-	-	-
21/04/2020	Leachate Pond	EM2006671	-	-	-
11/05/2020	Landfill Leachate	EM2007860	-	-	-
18/05/2020	Landfill Leachate	EM2008320	-	-	-
16/06/2020	Landfill Leachate	EM2010246	<50	-	-
16/06/2020	Landfill Leachate	EM2010246	-	-	-
22/07/2020	Landfill Leachate	EM2012818	-	-	-
26/08/2020	Dulverton Leachate	EM2014788	-	-	-
29/09/2020	Landfill Leachate	EM2017090	<50	-	-
29/09/2020	Landfill Leachate	EM2017090	-	-	-
27/10/2020	Landfill Leachate	EM2019050	-	-	-
7/12/2020	Landfill Leachate	EM2021896	<50	-	1
7/12/2020	Landfill Leachate	EM2021896	-	-	-
12/05/2021	Landfill Leachate	EM2108650	<50	-	-
22/06/2021	Landfill Leachate	EM2111910	<50	-	-
20/07/2021	Landfill Leachate	EM2114040	-	-	-
18/08/2021	Landfill Leachate	EM2116503	-	-	-
18/10/2021	Landfill Leachate	EM2120767	-	-	-
17/11/2021	Pomona (landfill leachate)	EM2123125	-	-	-
6/12/2021	Landfill Leachate	EM2124673	<50	-	-

				Inorganics			Acidity & Alkalinity							
Table 7: QC Summary				pH (Lab)	Electrical conductivity (lab)	Total Suspended Solids	Alkalinity (Carbonate as CaCO3)	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide as CaCO3)	Alkalinity (total as CaCO3)	Calcium (filtered)	Magnesium (filtered)	Potassium (filtered)	Sodium (filtered)
EQL				pH units	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
				0.01	1	5	1	1	1	1	1	1	1	1
Date	**Field ID**	**Lab Report Number**	**Matrix Type**											
22/03/2021	S2	EM2104983	Water	7.92	446	<5	<1	187	<1	187	67	5	<1	14
	QC1	EM2104983	Water	7.93	442	<5	<1	185	<1	185	67	5	<1	14
RPD				**0**	**1**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**
22/03/2021	S2	EM2104983	Water	7.92	446	<5	<1	187	<1	187	67	5	<1	14
	QQC1	ES2110839	Water	8.17	488	6	<1	193	<1	193	77	7	<1	14
RPD				**3**	**9**	**18**	**0**	**3**	**0**	**3**	**14**	**33**	**0**	**0**
22/06/2021	S1	EM2111910	Water	8.44	502	<5	14	189	<1	203	76	6	1	16
	QC	EM2111910	Water	8.43	485	12	13	183	<1	196	75	5	1	14
RPD				**0**	**3**	**82**	**7**	**3**	**0**	**4**	**1**	**18**	**0**	**13**
29/09/2021	S2	EM2119454	Water	7.79	494	-	<1	184	<1	184	81	6	1	14
	QC1	EM2119454	Water	7.96	457	<5	<1	171	<1	171	79	5	1	13
RPD				**2**	**8**	**-**	**0**	**7**	**0**	**7**	**2**	**18**	**0**	**7**
29/09/2021	S2	EM2119454	Water	7.79	494	-	<1	184	<1	184	81	6	1	14
	QQC1	ES2135818	Water	7.66	492	<5	<1	180	<1	180	81	7	1	12
RPD				**2**	**0**	**-**	**0**	**2**	**0**	**2**	**0**	**15**	**0**	**15**
6/12/2021	S1	EM2124670	Water	7.56	526	<5	<1	209	<1	209	63	6	1	15
	QC1	EM2124670	Water	7.79	523	<5	<1	204	<1	204	65	6	1	15
RPD				**3**	**1**	**0**	**0**	**2**	**0**	**2**	**3**	**0**	**0**	**0**

***RPDs have only been considered where a concentration is greater than 1 times the EQL.**

				Major Ions					Nutrients					
Table 7: QC Summary				Chloride	Sulfate (filtered)	Cations Total	Anions Total	Ionic Balance	Ammonia as N	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total Oxidised) (as N)	Nitrogen (Total)	Kjeldahl Nitrogen Total
				mg/L	mg/L	meq/L	meq/L	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL				1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.1	0.1
Date	**Field ID**	**Lab Report Number**	**Matrix Type**											
22/03/2021	S2	EM2104983	Water	23	30	4.36	5.01	6.89	0.02	0.65	<0.01	0.65	0.6	<0.1
	QC1	EM2104983	Water	24	30	4.36	5.00	6.77	0.01	0.64	<0.01	0.64	0.6	<0.1
RPD				**4**	**0**	**0**	**0**	**2**	**67**	**2**	**0**	**2**	**0**	**0**
22/03/2021	S2	EM2104983	Water	23	30	4.36	5.01	6.89	0.02	0.65	<0.01	0.65	0.6	<0.1
	QQC1	ES2110839	Water	26	29	5.03	5.19	1.62	<0.01	0.73	<0.01	0.73	0.7	<0.1
RPD				**12**	**3**	**14**	**4**	**124**	**67**	**12**	**0**	**12**	**15**	**0**
22/06/2021	S1	EM2111910	Water	28	33	5.01	5.53	4.98	<0.01	1.00	<0.01	1.00	1.2	0.2
	QC	EM2111910	Water	26	31	4.79	5.29	5.02	0.08	0.99	<0.01	0.99	1.2	0.2
RPD				**7**	**6**	**4**	**4**	**1**	**156**	**1**	**0**	**1**	**0**	**0**
29/09/2021	S2	EM2119454	Water	12	34	5.17	4.72	4.52	<0.01	1.17	0.01	1.18	1.7	0.5
	QC1	EM2119454	Water	21	34	4.94	4.72	-	<0.01	1.21	<0.01	1.21	1.7	0.5
RPD				**55**	**0**	**5**	**0**	**-**	**0**	**3**	**0**	**3**	**0**	**0**
29/09/2021	S2	EM2119454	Water	12	34	5.17	4.72	4.52	<0.01	1.17	0.01	1.18	1.7	0.5
	QQC1	ES2135818	Water	24	34	5.16	4.98	1.82	0.02	1.17	<0.01	1.17	1.4	0.2
RPD				**67**	**0**	**0**	**5**	**85**	**67**	**0**	**0**	**1**	**19**	**86**
6/12/2021	S1	EM2124670	Water	31	32	4.32	5.72	14.0	0.10	0.68	<0.01	0.68	0.9	0.2
	QC1	EM2124670	Water	33	32	4.42	5.67	12.5	0.07	0.68	<0.01	0.68	0.9	0.2
RPD				**6**	**0**	**2**	**1**	**11**	**35**	**0**	**0**	**0**	**0**	**0**

***RPDs have only been considered where a concentration is greater than 1 times the EQL.**

						Organic Indicators										Me
Table 7: QC Summary				Phosphorus filterable reactive (P)	Phosphorus (Total)	BOD	Cadmium	Cadmium (filtered)	Chromium (III+VI)	Chromium (III+VI) (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)		
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L		
EQL				0.01	0.01	2	0.0001	0.0001	0.001	0.001	0.001	0.001	0.05	0.05		
Date	**Field ID**	**Lab Report Number**	**Matrix Type**													
22/03/2021	S2	EM2104983	Water	<0.01	<0.01	<2	<0.0001	<0.0001	<0.001	<0.001	<0.001	0.006	0.05	<0.05		
	QC1	EM2104983	Water	<0.01	<0.01	<2	<0.0001	<0.0001	<0.001	<0.001	<0.001	<0.001	0.06	<0.05		
RPD				**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**143**	**18**	**0**		
22/03/2021	S2	EM2104983	Water	<0.01	<0.01	<2	<0.0001	<0.0001	<0.001	<0.001	<0.001	0.006	0.05	<0.05		
	QQC1	ES2110839	Water	<0.01	<0.01	<2	<0.0001	<0.0001	<0.001	0.001	<0.001	<0.001	<0.05	<0.05		
RPD				**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**143**	**0**	**0**		
22/06/2021	S1	EM2111910	Water	0.02	0.01	<2	-	-	-	-	-	-	-	-		
	QC	EM2111910	Water	0.03	<0.01	<2	-	-	-	-	-	-	-	-		
RPD				**40**	**0**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**		
29/09/2021	S2	EM2119454	Water	<0.01	<0.01	<10	<0.0001	<0.0001	<0.001	<0.001	<0.001	<0.001	0.08	<0.05		
	QC1	EM2119454	Water	0.02	<0.01	<10	<0.0001	<0.0001	<0.001	<0.001	<0.001	<0.001	0.07	<0.05		
RPD				**67**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**0**		
29/09/2021	S2	EM2119454	Water	<0.01	<0.01	<10	<0.0001	<0.0001	<0.001	<0.001	<0.001	<0.001	0.08	<0.05		
	QQC1	ES2135818	Water	<0.01	0.02	2	<0.0001	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.05	<0.05		
RPD				**0**	**67**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**46**	**0**		
6/12/2021	S1	EM2124670	Water	<0.01	0.02	<2	-	-	-	-	-	-	-	-		
	QC1	EM2124670	Water	<0.01	0.03	<2	-	-	-	-	-	-	-	-		
RPD				**0**	**40**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**		

***RPDs have only been considered where a concentration is greater than 1 times the EQL.**

				tals							
Table 7: QC Summary				Lead	Lead (filtered)	Manganese	Manganese (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL				0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.005
Date	**Field ID**	**Lab Report Number**	**Matrix Type**								
22/03/2021	S2	EM2104983	Water	<0.001	<0.001	0.004	0.003	<0.001	<0.001	<0.005	<0.005
	QC1	EM2104983	Water	<0.001	<0.001	0.004	0.002	<0.001	<0.001	<0.005	<0.005
RPD				**0**	**0**	**0**	**40**	**0**	**0**	**0**	**0**
22/03/2021	S2	EM2104983	Water	<0.001	<0.001	0.004	0.003	<0.001	<0.001	<0.005	<0.005
	QQC1	ES2110839	Water	<0.001	<0.001	0.003	<0.001	<0.001	<0.001	<0.005	<0.005
RPD				**0**	**0**	**29**	**100**	**0**	**0**	**0**	**0**
22/06/2021	S1	EM2111910	Water	-	-	-	-	-	-	-	-
	QC	EM2111910	Water	-	-	-	-	-	-	-	-
RPD				**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
29/09/2021	S2	EM2119454	Water	<0.001	<0.001	0.009	0.004	<0.001	<0.001	<0.005	<0.005
	QC1	EM2119454	Water	<0.001	<0.001	0.010	0.004	<0.001	<0.001	<0.005	<0.005
RPD				**0**	**0**	**11**	**0**	**0**	**0**	**0**	**0**
29/09/2021	S2	EM2119454	Water	<0.001	<0.001	0.009	0.004	<0.001	<0.001	<0.005	<0.005
	QQC1	ES2135818	Water	<0.001	<0.001	0.005	<0.001	<0.001	<0.001	<0.005	<0.005
RPD				**0**	**0**	**57**	**120**	**0**	**0**	**0**	**0**
6/12/2021	S1	EM2124670	Water	-	-	-	-	-	-	-	-
	QC1	EM2124670	Water	-	-	-	-	-	-	-	-
RPD				**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

***RPDs have only been considered where a concentration is greater than 1 times the EQL.**

Appendix D

Field notes

Table 1: Results from final field measurements 2021 - Groundwater

Well ID	Date	Temp	pH	EC	DO	ORP	SWL
		°C	pH units	µS/cm	ppm	mV	mbgl
B2	Sept 21	13.7	7.06	1016	1.21	-78.6	6.05
	March 21	13.9	6.74	1990	0.82	-77.6	8.45
B4	Sept 21	14	6.95	802	1.22	-77.1	5.845
	March 21	14.3	6.96	898	1.08	-37	6.95
B6	Sept 21	11.5	6.94	336.2	1.59	-69.4	1.886
	March 21	13.7	6.59	356.3	2.23	-48.4	2.26
B7	Sept 21	13	7.17	389.6	2.08	87.9	2.275
	March 21	14	6.95	408.5	2.84	60	3.38
B9	Sept 21	No information	No information	No information	No information	No information	No information
	March 21	14.1	7.37	337.2	3.48	75.3	>30
B11	Sept 21	126	3.89	787	1.79	299.1	3.585
	March 21	14.1	4.62	607	6.01	110.7	5.63
B12	Sept 21	15	5.3	151.2	3.15	230.5	3.98
	March 21	15.5	5.03	140.6	3.54	234	5.12
B14	Sept 21	10.1	7.07	691	1.45	-27.7	0.695
	March 21	15.3	7.1	836	2.64	3.1	1.6

Purging and Sampling Record

Bore ID: Surface waters

Job Information	Sampling Information	Bore Information
Client: DRWMA	Purge Method:	SWL(mbTOC): m
Project: Surface water	Sample Method:	Logic Check:
Proj. No.:	WQ Meter Type:	Screen: From: to: m
Sampler:	Flow Cell: Y / N Pump Depth: m	Stick Up: m
Date:	WLevel Meter Type: Dip / Fox / Int.Fce / Gge	NAPL Check:
Round	Field Filtered? Y / N (filter vessel, disposable filter/syringe)	Bore Diam.: mm
		Ref.datum:
		Well Cap Secure?
		Bore Depth: m

	Time (.....)	Volume (L) Site	Temp (°C)	pH (pH units)	Elec.Cond (.....)	Dis.Oxygen (.....)	Ox-Red Pt. (± mV)	SWL (m TOC)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
	Stable when (3 consecutive readings):	-	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable			
22/3	1420	S6	15.6	9.05	424.6	6.85	93.3			Flowing, fairly clear, no debris odour
22/3	1600	S2	15.4	7.76	403.2	8.95	93.2			Flowing, clear, no debri/odour
23/3	9:30 am	S4	15.4	7.04	398.2	7.94	38.3			Flowing, clear, no odour
23/3	11:30 am	SP3	17.5	7.15	77.0	0.92	126.7			Algae present, black/brown coloured, no odour.
23/3										
23/3	3:00pm	S1	16.4	6.92	416.7	9.28	70.8			Clear, flowing, no odour/debris

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: B2

Job Information	Sampling Information	Bore Information
Client: Dulverton	Purge Method: Mini Monsoon	SWL(mbTOC): 8.45 m
Project:	Sample Method:	Screen: From: to: m
Proj. No.: 3219202	WQ Meter Type:	NAPL Check:
Sampler: T.C	Flow Cell: Y / N Pump Depth: m	Ref.datum:
Date: 24/3/21	WLevel Meter Type: Dip / Fox / Int.Fce / Gge	Bore Depth: 22.34 m
Round	Field Filtered? Y / N (filter vessel, disposable filter/syringe)	

Time (.....)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (.....)	Dis.Oxygen (.....)	Ox-Red Pt. (± mV)	SWL (m TOC)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		-	*+/- 0.05 pH*	*+/- 3%*	*+/- 10%*	*+/- 10 mV*	*stable*		
19:00am	~~20~~	14.0	6.82	1916	2.01	-36.5			Orange, cloudy, foul odour, high sediment
	~~40~~	14.4	6.80	1969	1.25	-68.5			
	60	13.9	6.76	1977	0.65	-72.5			
	80	14.0	6.74	1983	0.53	-77.3			
	100	13.9	6.74	1990	0.82	-77.6			No change
	~~120~~								

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N

Decontamination as per GHD procedure? Y / N

Was sampling equipment pre-cleaned? Y / N

COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: B4

Job Information
Client: Dulverton
Project:
Proj. No.: 3219202
Sampler:
Date: 24/3/21
Round

Sampling Information
Purge Method: Mini Monsoon
Sample Method:
WQ Meter Type:
Flow Cell: Y / N Pump Depth:.....m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
SWL(mbTOC): 6.95 m Logic Check:
Screen: From:.....to..... m Stick Up: ..... m
NAPL Check: Bore Diam.: ..... mm
Ref.datum: Well Cap Secure?.....
Bore Depth: 20.0 m

Time (.....)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (.....)	Dis.Oxygen (.....)	Ox-Red Pt. (± mV)	SWL (m TOC)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		-	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable		
1:00pm	5	14.4	6.96	735	2.15	-6.3			Foul odour, orange/cloudy.
	15	14.3	6.94	1976	3.35	-37.1			
	30	14.2	6.93	803	1.07	-38.9			
	45	14.2	6.95	895	1.10	-37.5			
	60	14.3	6.97	901	1.03	-36.9			
	75	14.3	6.96	898	1.08	-37.0			

Field QA Checks:
Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: B6

Job Information	Sampling Information	Bore Information
Client: Dulverton	Purge Method: Waterra	SWL(mbTOC): 2.26 m
Project:	Sample Method:	Logic Check:
Proj. No.: 321202	WQ Meter Type:	Screen: From: to: m
Sampler: L-C	Flow Cell: Y / N	Pump Depth: m
Date: 25/3/21	WLevel Meter Type: Dip / Fox / Int.Fce / Gge	NAPL Check:
Round		Ref.datum:
		Bore Depth: 6.88 m
		Stick Up: m
		Bore Diam.: mm
		Well Cap Secure?

Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Time (.....)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (.....)	Dis.Oxygen (.....)	Ox-Red Pt. (± mV)	SWL (m TOC)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		-	*+/- 0.05 pH*	*+/- 3%*	*+/- 10%*	*+/- 10 mV*	*stable*		
9:30	3	13.3	5.87	350.5	2.13	56.0			Mostly clear, slight odour.
	6	13.4	6.16	345.8	2.06	-1.4			Strong / foul odour
	9	13.4	6.33	349.7	1.66	-22.6			
	12	13.4	6.39	353.0	1.66	-30.1			
	15	13.4	6.43	351.3	1.47	-37.3			
	18	13.4	6.48	350.8	1.42	-41.4			
	21	13.4	6.51	354.5	1.65	-44.6			
	24	13.6	6.54	350.9	1.92	-46.8			
	27	13.6	6.54	351.1	1.29	-49.4			
	30	13.7	6.59	356.3	2.23	-48.4			No change.

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: B7

Job Information

Client: Dulverton
Project:
Proj. No.: 32192202
Sampler: Z.C
Date: 23/3/21
Round

Sampling Information

Purge Method: Mini Monsoon
Sample Method:
WQ Meter Type:
Flow Cell: Y / N Pump Depth:.....m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL(mbTOC): 3.38m m Logic Check:
Screen: From:.....to..... m Stick Up: ..... m
NAPL Check: Bore Diam.: ..... mm
Ref.datum: Well Cap Secure?.....
Bore Depth: 21.28 m

Time (.....)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (.....)	Dis.Oxygen (.....)	Ox-Red Pt. (± mV)	SWL (m TOC)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		-	*+/- 0.05 pH*	*+/- 3%*	*+/- 10%*	*+/- 10 mV*	*stable*		
10:40am	20	13.6	7.02	406.1	1.46	60.8			Clear, no odour.
	40	13.9	6.95	409.1	2.04	55.8			
	60	13.4	6.91	404.1	1.18	58.0			
	80	13.9	6.91	408.4	2.54	59.7			
	100	14.0	6.92	408.4	2.88	62.0			
	120	14.0	6.95	408.5	2.84	60.9			No change.

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: B9

Job Information		Sampling Information		Bore Information	
Client:	Dulverton	Purge Method:		SWL(mbTOC):	Deeper than 30m tape
Project:		Sample Method:	Hydrasleeve	Screen: From: ..... to: ..... m	Logic Check:
Proj. No.:	32/9202	WQ Meter Type:		NAPL Check:	Stick Up: ..... m
Sampler:	Z.C	Flow Cell: Y / N	Pump Depth: .....m	Ref.datum:	Bore Diam.: ..... mm
Date:	24/3/21	WLevel Meter Type:	Dip / Fox / Int.Fce / Gge	Bore Depth: 69.2 m	Well Cap Secure?
Round		Field Filtered? Y / N (filter vessel, disposable filter/syringe)			

Time (.....)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (.....)	Dis.Oxygen (.....)	Ox-Red Pt. (± mV)	SWL (m TOC)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		-	*+/- 0.05 pH*	*+/- 3%*	*+/- 10%*	*+/- 10 mV*	*stable*		
12:00	1	14.1	7.37	337.2	3.48	75.3			Clear, slightly orange, some sediment present.

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: B11

Job Information	Sampling Information	Bore Information
Client: Dulverton	Purge Method: Waterra	SWL(mbTOC): 5.63 m
Project:	Sample Method:	Screen: From: to: m
Proj. No.: 3219202	WQ Meter Type:	NAPL Check:
Sampler: T.C	Flow Cell: Y / N	Ref.datum:
Date: 23/3/21	Pump Depth: m	Bore Depth: 8.69 m
Round	WLevel Meter Type: Dip / Fox / Int.Fce / Gge	Logic Check:
	Field Filtered? Y / N (filter vessel, disposable filter/syringe)	Stick Up: m
		Bore Diam.: mm
		Well Cap Secure?

Time (.....)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (.....)	Dis.Oxygen (.....)	Ox-Red Pt. (± mV)	SWL (m TOC)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		-	*+/- 0.05 pH*	*+/- 3%*	*+/- 10%*	*+/- 10 mV*	*stable*		
2:30	3	13.5	5.67	602	0.95	92.9			Orange, cloudy, no odour
	6	13.7	4.72	669	2.09	1289			
	9	13.6	4.75	596	2.26	110.1			
	12	13.8	4.63	605	6.84	111.1			No change.
	15	14.1	4.62	607	6.01	110.7			
	Going Dry			Sampled!					

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: B12

Job Information	Sampling Information	Bore Information
Client: Dulverton	Purge Method: Waterra	SWL(mbTOC): 5.12 m
Project:	Sample Method:	Logic Check:
Proj. No.: 32 19202.	WQ Meter Type:	Screen: From: to: m
Sampler: ZC	Flow Cell: Y / N Pump Depth: m	Stick Up: m
Date: 23/3/21	WLevel Meter Type: Dip / Fox / Int.Fce / Gge	NAPL Check: Bore Diam.: mm
Round	Field Filtered? Y / N (filter vessel, disposable filter/syringe)	Ref.datum: Well Cap Secure?
		Bore Depth: 10.62 m

Time (.....)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (.....)	Dis.Oxygen (.....)	Ox-Red Pt. (± mV)	SWL (m TOC)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		-	*+/- 0.05 pH*	*+/- 3%*	*+/- 10%*	*+/- 10 mV*	*stable*		
9:00am	3	15.3	6.83	153.7	2.39	171.7			Clear, then cloudy orange, no odour
	6	15.6	5.48	141.1	2.21	210			No change.
	9	15.6	5.60	146.5	2.35	235.4			
	12	15.5	5.03	140.6	3.54	234.1			Purged dry at 12L
Sampled	at	12:00 pm.							

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N

Decontamination as per GHD procedure? Y / N

Was sampling equipment pre-cleaned? Y / N

COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: B14

Job Information	Sampling Information	Bore Information
Client: DRWMA	Purge Method: Waterra	SWL(mbTOC): 1.60 m
Project: Landfill monitoring	Sample Method: "	Logic Check:
Proj. No.: 32192.02	WQ Meter Type: "	Screen: From: to: m
Sampler: SK/ZC	Flow Cell: Y / N	Pump Depth: m
Date: 22/3/21	WLevel Meter Type: Dip / Fox / Int.Fce / Gge	Stick Up: m
Round	Field Filtered? Y / N (filter vessel, disposable filter/syringe)	NAPL Check:
		Ref.datum:
		Bore Depth: 4.8 m
		Bore Diam.: mm
		Well Cap Secure?

Time (.....)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (.....)	Dis.Oxygen (.....)	Ox-Red Pt. (± mV)	SWL (m TOC)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		-	*+/- 0.05 pH*	*+/- 3%*	*+/- 10%*	*+/- 10 mV*	*stable*		
1430	3	15.0	7.80	788	2.22	30.4			orange, high sediment
1432	6	15.5	7.53	824	1.81	9.3			
1434	9	14.8	7.44	824	2.22	2.5			
1435	12	14.8	7.28	822	2.22	-0.5			
1442	15	15.0	7.20	826	2.60	-0.3			
1443	18	15.3	7.10	836	2.64	3.1			

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N

Decontamination as per GHD procedure? Y / N

Was sampling equipment pre-cleaned? Y / N

COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

~~Bore ID:~~ surface waters

Job Information
Client: DRWMA
Project: Surface Water
Proj. No.: 32192202
Sampler: SK / MH
Date: 22/6/21
Round

Sampling Information
Purge Method:
Sample Method:
WQ Meter Type: YSI PP
Flow Cell: Y / N Pump Depth: m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
SWL(mbTOC): m Logic Check:
Screen: From: to m Stick Up: m
NAPL Check: Bore Diam.: mm
Ref.datum: Well Cap Secure?
Bore Depth: m

Time (.....)	Volume ~~(l)~~ (ml)	Temp (°C)	pH (pH units)	Elec.Cond (mS/cm)	Dis.Oxygen (.....)	Ox-Red Pt. (± mV)	SWL (m TOC)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings)		-	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable		
1132	S7	8.0	7.57	1560	3.94	124.4			Flowing, fairly murky.
1210	S4	11.5	7.47	1848	6.58	124.0			Flowing, fairly clear.
1233	SP3	9.2	~~7.57~~ 7.54	S42	1.93	123.1			Murky, no/minimal algae
1333	Compost	11.0	~~5586~~	5586	0.24	−174.6			
~~1400~~	~~S5~~		6.83						
1400	S3	9.6	7.29	741	3.06	46.4			Flowing slightly.
1415	S2	11.0	~~8.32~~ 8.30	341.0	8.50	57.7			Very low flow. Branches blocking access.
1433	S1	10.3	8.01	342.2	~~8.84~~ 9.84	80.9			Slow flow, clear

Field QA Checks:
Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Diol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

Purge Volumes
Casing Int. Dia (mm) 50 100 150
Vol (L/m of casing) 2.0 7.9 17.7
*Double for gravel pack

Purging and Sampling Record

Bore ID: B2

Job Information
- Client: DRWMA
- Project: Dulverton Landfill
- Proj. No.: 3219202
- Sampler: Sam K
- Date: 29/9/21
- Round:

Sampling Information
- Purge Method: Pump-Twister
- Sample Method: "
- WQ Meter Type: YSI Pro
- Flow Cell: Y / N Pump Depth: m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL(mbTOC): 6.05 m
- Screen: From: to: m
- NAPL Check:
- Ref.datum:
- Bore Depth: 21.89 m
- Logic Check:
- Stick Up: m
- Bore Diam.: mm
- Well Cap Secure? Y

Time (.....)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (µS/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m TOC)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		-	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable		
1130	20	14.0	7.15	982	1.07	-84.2			Cloudy, brown, ↑ sediment
1133	40	13.8	7.13	1034	1.14	-77.5			
1136	60	13.8	7.11	1069	1.20	-74.7			Becoming slightly clearer.
1139	70	13.9	7.07	1051	1.32	-75.8			
1144	80	13.8	7.08	1051	1.16	-78.5			
1146	90	13.8	7.06	1027	1.07	-78.3			
1147	97	13.7	7.06	1016	1.21	-78.6			

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

95

Purging and Sampling Record

Bore ID: B4

Job Information
Client: DRNMA
Project: Dulverton Landfill
Proj. No.: 3219202
Sampler: SamK
Date: 29/9/21
Round

Sampling Information
Purge Method: Super twister pump
Sample Method: "
WQ Meter Type: YSI Pro
Flow Cell: Y / N Pump Depth: m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
SWL(mbTOC): 5.845 (TOC) m Logic Check:
Screen: From: to: m Stick Up: m
NAPL Check: Bore Diam.: mm
Ref.datum: Well Cap Secure? Y
Bore Depth: 19.89 m

Time (.....)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (.....)	Dis.Oxygen (.....)	Ox-Red Pt. (± mV)	SWL (m TOC)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		-	*+/- 0.05 pH*	*+/- 3%*	*+/- 10%*	*+/- 10 mV*	*stable*		
1251	20	14.2	7.16	702	0.88	-79.6			Slightly cloudy
1255	40	14.1	7.04	795	1.20	-73.2			Fairly clear
1257	50	14.1	6.98	793	1.62	-73.7			
1300	60	14.0	6.95	788	0.94	-73.9			
1303	70	14.0	6.96	788	1.08	-75.6			
1306	85	14.0	6.95	802	1.22	-77.1			

Field QA Checks:
Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

Purge Volumes
Casing Int. Dia (mm) 50 100 150
Vol (L/m of casing) 2.0 7.9 17.7
*Double for gravel pack

Purging and Sampling Record

Bore ID: B6

Job Information

Client: DRWMA
Project: Dulverton Landfill
Proj. No.: 3219202
Sampler: SVL/MTL
Date: 28/9/21
Round

Sampling Information

Purge Method: Waterra
Sample Method: "
WQ Meter Type: YSI Pro
Flow Cell: Y / N Pump Depth: m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL(mbTOC): 1.886 m Logic Check:
Screen: From: to: m Stick Up: m
NAPL Check: Bore Diam.: mm
Ref.datum: Well Cap Secure? Y
Bore Depth: 6.88 m

Time (.....)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (µS/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m TOC)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		-	*+/- 0.05 pH*	*+/- 3%*	*+/- 10%*	*+/- 10 mV*	*stable*		
1022	5	11.4	7.31	321.9	2.01	-79.3			Slightly cloudy, orange brown
1026	10	11.3	7.06	320.7	1.78	-78.1			Slightly clearer.
1029	15	11.3	6.99	328.1	1.73	-73.3			
1031	20	11.4	6.97	331.4	1.56	-71.6			
1033	25	11.4	6.96	333.6	1.49	-71.2			
1036	30	11.5	6.94	336.2	1.59	-69.4			

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters / Preservatives	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

5×2=10×3=30

Purging and Sampling Record

Bore ID: B7

Job Information

Client: DRWMA
Project:
Proj. No.: 3219202
Sampler: SK / MH
Date: 28/9/21
Round

Sampling Information

Purge Method: Pump
Sample Method:
WQ Meter Type: YSI Pro
Flow Cell: Y / N Pump Depth: ..... m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL(mbTOC): 2.275 m Logic Check:
Screen: From: ..... to ..... m Stick Up: ..... m
NAPL Check: Bore Diam.: ..... mm
Ref.datum: Well Cap Secure? Y
Bore Depth: 21.22 m

Time (.....)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (.....)	Dis.Oxygen (.....)	Ox-Red Pt. (± mV)	SWL (m TOC)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		-	*+/- 0.05 pH*	*+/- 3%*	*+/- 10%*	*+/- 10 mV*	*stable*		
1240	20	13.1	7.36	386.8	1.87	73.7			Slightly cloudy, grey/brown.
1243	40	13.0	7.23	391.2	1.76	75.9			
1245	60	13.0	7.24	390.2	1.72	79.1			Becoming clearer.
1247	70	13.1	7.20	391.4	2.28	81.7			
1249	80	13.0	7.23	390.0	2.63	86.5			
1251	90	13.0	7.23	389.7	2.25	88.2			
1254	100	13.0	7.17	389.6	2.08	87.9			

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: B11

Job Information
Client: DRWMA
Project: Dulverton Landfill
Proj. No.: 32/9202
Sampler: Sam K
Date: 29/9/21
Round

Sampling Information
Purge Method: Waterra
Sample Method:
WQ Meter Type: YSI Pro
Flow Cell: Y / N Pump Depth: m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
SWL(mbTOC): 3.585 m Logic Check:
Screen: From: to: m Stick Up: m
NAPL Check: Bore Diam.: 4 mm
Ref.datum: Well Cap Secure?
Bore Depth: 8.69 m

Time (.....)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (.....)	Dis.Oxygen (.....)	Ox-Red Pt. (± mV)	SWL (m TOC)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):	-	*+/- 0.05 pH*	*+/- 3%*	*+/- 10%*	*+/- 10 mV*	*stable*			
1435	5	12.4	3.72	830	0.92	332.9			Cloudy, orange
1437	10	12.3	3.68	824	0.91	330.3			
1441	15	12.3	3.52	926	1.18	345.8			
1444	20	12.4	3.91	759	1.20	298.2			
1449	24	12.6	3.89	787	1.79	299.1			Purging DRY @ 25L.

Field QA Checks:
Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters / Preservatives	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

Purge Volumes
Casing Int. Dia (mm) 50 100 150
Vol (L/m of casing) 2.0 7.9 17.7
*Double for gravel pack

Purging and Sampling Record

Bore ID: B12

Job Information
Client: DRWMA
Project: Dulverton Landfill
Proj. No.: 3219202
Sampler: SKing
Date: 29/9/21
Round

Sampling Information
Purge Method: Waterra
Sample Method:
WQ Meter Type: YSI Pro
Flow Cell: Y / N Pump Depth: m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
SWL(mbTOC): 3.98 m Logic Check:
Screen: From: to m Stick Up: m
NAPL Check: Bore Diam.: mm
Ref.datum: Well Cap Secure? Y
Bore Depth: 10.63 m

Time (.....)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (µS/cm)	Dis.Oxygen (mg/L)	Ox-Red Pt. (± mV)	SWL (m TOC)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		-	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable		
0942	4	15.2	5.71	158.8	2.31	215.5			Orange, cloudy med. sediment
0950	8	14.9	5.37	149.7	2.00	213.7			
0955	12	15.0	5.30	151.2	3.15	230.5			Increasing sediment.
									Purged DRY @ 15L
							4.22		SAMPLED @ 14:15

Field QA Checks:
Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters / Preservatives	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: B14

Job Information		Sampling Information		Bore Information	
Client: DRWMA		Purge Method: Waterra		SWL(mbTOC): 0.695 m	Logic Check:
Project: Dulverton Landfill		Sample Method: "		Screen: From: to: m	Stick Up: m
Proj. No.: 3219202		WQ Meter Type: YSI Pro		NAPL Check:	Bore Diam.: mm
Sampler: Samk / Morgan H		Flow Cell: Y / N	Pump Depth: m	Ref.datum:	Well Cap Secure? Y
Date: 28/9		WLevel Meter Type:	Dip / Fox / Int.Fce / Gge	Bore Depth: 4.77 m	
Round		Field Filtered? Y / N (filter vessel, disposable filter/syringe)			

Time (.....)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (.....)	Dis.Oxygen (.....)	Ox-Red Pt. (± mV)	SWL (m TOC)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		-	*+/- 0.05 pH*	*+/- 3%*	*+/- 10%*	*+/- 10 mV*	*stable*		
1130	5	10.1	7.21	683	1.21	23.3			orange, thick sediment
1132	10	10.1	7.09	688	1.02	-12.5			
1134	15	10.2	7.06	692	1.01	-22.2			
1136	20	10.1	7.09	691	1.31	-26.5			
1139	25	10.1	7.07	691	1.45	-27.7			

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: Surface waters

Job Information

Client: ORWMA
Project: Dulverton Landfill
Proj. No.: 3219202
Sampler: SK / MH
Date: Sept 2021
Round

Sampling Information

Purge Method:
Sample Method:
WQ Meter Type: YSI Pro
Flow Cell: Y / N Pump Depth:.....m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL(mbTOC): ..... m Logic Check: .....
Screen: From:.....to..... m Stick Up: ..... m
NAPL Check:..... Bore Diam.: ..... mm
Ref.datum: ..... Well Cap Secure?.....
Bore Depth: ..... m

	Time (.....)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (.....)	Dis.Oxygen (.....)	Ox-Red Pt. (± mV)	SWL (m TOC)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
	Stable when (3 consecutive readings):		-	+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable		
27/9	1340	S9	14.0	8.08	376.3	10.11	83.2			Fast flowing
28/9	1014	S4	11.9	7.90	362.5	10.16	83.0			Clear, no odour
[illegible]		[illegible]								
28/9	1121	S6	12.1	8.17	369.2	10.72	87.0			Clear, no odour
28/9	1210	SP3	11.9	7.80	511	4.30	74.0			Cloudy brown & colour.
28/9	1400	S1	12.0	8.21	349.7	10.90	70.6			Clear, fast flowing
29/9	1030	S7	10.7	7.77	1018	1.37	88.6			Flowing, turbid
29/9	1520	S3	12.1	7.39	725	3.63	73.2			Flowing, turbid
29/9	1545	S2	13.8	8.01	337.6	8.72	86.0			Flowing, fairly clear. QC1/QQC1

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: ~~Bore ID:~~ Surface water

Job Information

Client: DRWMA
Project: Quilverton SW
Proj. No.: 3219202
Sampler: Sam King / Bridie P
Date: 6/12/20
Round

Sampling Information

Purge Method:
Sample Method:
WQ Meter Type: YSI Pro
Flow Cell: Y / N Pump Depth: m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL(mbTOC): m Logic Check:
Screen: From: to m Stick Up: m
NAPL Check: Bore Diam.: mm
Ref.datum: Well Cap Secure?
Bore Depth: m

Time (.....)	Volume (L)	Temp (°C)	pH (pH units)	Elec.Cond (µS/cm)	Dis.Oxygen (.....)	Ox-Red Pt. (± mV)	SWL (m TOC)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):	-		+/- 0.05 pH	+/- 3%	+/- 10%	+/- 10 mV	stable		
1300	S4	14.7	7.74	348.6	9.17	46.0			Flowing, fairly clear. Fish.
1320	S6	14.9	7.69	365.4	NR	65.1			Low flow, fairly clear.
13:30	SB3	18.1	7.43	432.9	1.71	47.1			
1400	S9	15.3	7.78	365.2	9.97	56.8			
1450	Compost	20.5	7.16	8209	0.64	-167.0			Sampled from pond - pump offline.
1530	S3	14.5	7.80	557	4.34	71.3			Very low flow, murky brown.
1540	S2	15.2	7.97	363.2	8.12	41.0			Flowing, fairly clear
16:00	S1	15.3	8.10	358.2	7.77	45.6			" " "

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters / Preservatives	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Appendix E

Laboratory Documentation

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2104983**	Page	: 1 of 8
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: SAMANTHA KING	Contact	: Shirley LeCornu
Address	: 21-23 PATERSON ST LAUNCESTON TAS, AUSTRALIA 7250	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9630
Project	: 3219202	Date Samples Received	: 24-Mar-2021 10:15
Order number	: 3219202	Date Analysis Commenced	: 24-Mar-2021
C-O-C number	: ----	Issue Date	: 31-Mar-2021 16:56
Sampler	: SK, ZC		
Site	: Dulverton Landfill Water Monitoring		
Quote number	: EN/005		
No. of samples received	: 6		
No. of samples analysed	: 6		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Arenie Vijayaratnam	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Samantha Smith	Laboratory Coordinator	WRG Subcontracting, Springvale, VIC
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- ED009x: LOR raised for Bromide and Iodide due to sample matrix.
- ED037-P: EM2105005 #1 Poor duplicate precision for Alkalinity due to sample heterogeneity. Confirmed by re-preparation and re-analysis.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- It is recognised that total copper is less than dissolved copper for samples #1, #2 and #5. However, the difference is within experimental variation of the methods.
- Total Coliforms and E.coli by MF (Chromogenic Media) (MM698) is conducted by ALS Scoresby NATA accreditation no. 992, site no. 989.
- Faecal Coliforms by MF (Chromogenic Media) (MM696) is conducted by ALS Scoresby NATA accreditation no. 992, site no. 989.
- Ionic Balance out of acceptable limits for sample #1 to #3 due to analytes not quantified in this report.
- Ionic Balance out of acceptable limits for sample #4 due to analytes not quantified in this report.
- EP030: The DO depletion for EM2108983 #4, 5 & 6 is less than 2mg/L, this indicates that the sample has been over diluted and the BOD is less than 8 (#5, 6) and 10 (#4) mg/L. The BOD result reported was estimated from the lowest dilution.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- ED045G: The presence of thiocyanate can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- HPC @ 22C and 36C (MM524) is conducted by ALS Scoresby NATA accreditation no. 992, site no. 989.
- E.coli & Total Coliforms by MPN (MM514) is conducted by ALS Scoresby NATA accreditation no. 992, site no. 989.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	B14	----	----	----	----
				Sampling date / time	22-Mar-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2104983-004	--------	--------	--------	--------
					Result	----	----	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		**712**	----	----	----	----
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		**430**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L		**430**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		**44**	----	----	----	----
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		**114**	----	----	----	----
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		**118**	----	----	----	----
Magnesium	7439-95-4	1	mg/L		**9**	----	----	----	----
Sodium	7440-23-5	1	mg/L		**63**	----	----	----	----
Potassium	7440-09-7	1	mg/L		**9**	----	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L		**0.105**	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		**0.002**	----	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	----	----	----	----
Iron	7439-89-6	0.05	mg/L		**0.51**	----	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.24**	----	----	----	----
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	----	----	----	----
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	----	----	----	----

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	B14	----	----	----	----
				Sampling date / time	22-Mar-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2104983-004	--------	--------	--------	--------
					Result	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**11.3**	----	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		**11.3**	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**3.89**	----	----	----	----
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	----	----	----	----
EN055: Ionic Balance									
ø Total Anions	----	0.01	meq/L		**12.7**	----	----	----	----
ø Total Cations	----	0.01	meq/L		**9.60**	----	----	----	----
ø Ionic Balance	----	0.01	%		**14.0**	----	----	----	----
EP002: Dissolved Organic Carbon (DOC)									
Dissolved Organic Carbon	----	1	mg/L		**2**	----	----	----	----
EP030: Biochemical Oxygen Demand (BOD)									
Biochemical Oxygen Demand	----	2	mg/L		<10	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L		<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	B14	----	----	----	----
				Sampling date / time	22-Mar-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2104983-004	--------	--------	--------	--------
					Result	----	----	----	----
EP080: BTEXN - Continued									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ **Total Xylenes**	----	2	µg/L		<2	----	----	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
ED009: Anions									
Bromide	24959-67-9	0.010	mg/L		<0.500	----	----	----	----
Iodide	20461-54-5	0.010	mg/L		<0.500	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**85.6**	----	----	----	----
Toluene-D8	2037-26-5	2	%		**82.1**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**97.5**	----	----	----	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	S6	S2	QC1	MC Bore	Site Office
				Sampling date / time	22-Mar-2021 00:00	22-Mar-2021 00:00	22-Mar-2021 00:00	22-Mar-2021 00:00	22-Mar-2021 00:00
					EM2104983-001	EM2104983-002	EM2104983-003	EM2104983-005	EM2104983-006
					Result	Result	Result	Result	Result
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		**7.89**	**7.92**	**7.93**	**6.59**	**6.77**
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		**484**	**446**	**442**	**201**	**86**
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	5	mg/L		<5	<5	<5	<5	<5
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		**196**	**187**	**185**	**64**	**12**
Total Alkalinity as CaCO3	----	1	mg/L		**196**	**187**	**185**	**64**	**12**
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		**32**	**30**	**30**	**4**	**14**
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		**23**	**23**	**24**	**24**	**7**
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		**70**	**67**	**67**	**9**	**6**
Magnesium	7439-95-4	1	mg/L		**6**	**5**	**5**	**5**	**2**
Sodium	7440-23-5	1	mg/L		**14**	**14**	**14**	**14**	**4**
Potassium	7440-09-7	1	mg/L		<1	<1	<1	**2**	<1
EG020F: Dissolved Metals by ICP-MS									
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		**0.004**	**0.006**	<0.001	**0.010**	**0.174**
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L		**0.004**	**0.003**	**0.002**	**0.002**	<0.001
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	<0.001	**0.002**	<0.001
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	<0.005	**0.023**	**0.019**
Iron	7439-89-6	0.05	mg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EG020T: Total Metals by ICP-MS									
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	<0.001	**0.009**	**0.482**
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	**0.002**	<0.001
Manganese	7439-96-5	0.001	mg/L		**0.005**	**0.004**	**0.004**	**0.004**	**0.002**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	S6	S2	QC1	MC Bore	Site Office
				Sampling date / time	22-Mar-2021 00:00	22-Mar-2021 00:00	22-Mar-2021 00:00	22-Mar-2021 00:00	22-Mar-2021 00:00
					EM2104983-001	EM2104983-002	EM2104983-003	EM2104983-005	EM2104983-006
					Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued									
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	<0.001	**0.004**	<0.001
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	<0.005	**0.025**	**0.021**
Iron	7439-89-6	0.05	mg/L		**0.06**	**0.05**	**0.06**	<0.05	<0.05
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.01**	**0.02**	**0.01**	<0.01	<0.01
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.73**	**0.65**	**0.64**	**0.04**	**0.19**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.73**	**0.65**	**0.64**	**0.04**	**0.19**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.1	<0.1	<0.1	<0.1	<0.1
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ **Total Nitrogen as N**	----	0.1	mg/L		**0.7**	**0.6**	**0.6**	<0.1	**0.2**
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.01	<0.01	<0.01	**0.11**	<0.01
EK071FG: Dissolved Reactive Phosphorus as P by DA									
Dissolved Reactive Phosphorus as P	----	0.01	mg/L		<0.01	<0.01	<0.01	**0.15**	<0.01
EN055: Ionic Balance									
ø **Total Anions**	----	0.01	meq/L		**5.23**	**5.01**	**5.00**	**2.04**	**0.73**
ø **Total Cations**	----	0.01	meq/L		**4.60**	**4.36**	**4.36**	**1.52**	**0.64**
ø **Ionic Balance**	----	0.01	%		**6.46**	**6.89**	**6.77**	**----**	**----**
EP030: Biochemical Oxygen Demand (BOD)									
Biochemical Oxygen Demand	----	2	mg/L		<2	<2	<2	<8	<8
MM524: Heterotrophic (Total) Plate Count @ 22C and 36C									
Heterotrophic Plate Count (22°C)	----	1	orgs/mL		**----**	**----**	**----**	**1100**	**710**
Heterotrophic Plate Count (36°C)	----	1	orgs/mL		**----**	**----**	**----**	**590**	**1200**
MM696: E. coli & Faecal Coliforms by MF (Chromogenic)									
Faecal Coliforms	----	1	CFU/100mL		**----**	**----**	**----**	**29**	**2**
MM698: Total Coliforms and E. coli by MF (Chromogenic)									
Escherichia coli	----	1	CFU/100mL		**----**	**----**	**----**	**0**	**0**
Total Coliforms by MF	----	1	CFU/100mL		**----**	**----**	**----**	**520**	**64**

Surrogate Control Limits

Sub-Matrix: **GROUNDWATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129

Inter-Laboratory Testing

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry) 14913 (Biology).

(WATER) ED009: Anions

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2105106**	Page	: 1 of 4
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: SAMANTHA KING	Contact	: Shirley LeCornu
Address	: 21-23 PATERSON ST LAUNCESTON TAS, AUSTRALIA 7250	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9630
Project	: 3219202	Date Samples Received	: 25-Mar-2021 10:05
Order number	: 3219202	Date Analysis Commenced	: 25-Mar-2021
C-O-C number	: ----	Issue Date	: 01-Apr-2021 09:30
Sampler	: ZC		
Site	: Dulverton Landfill Water Monitoring		
Quote number	: EN/005		
No. of samples received	: 3		
No. of samples analysed	: 3		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Arenie Vijayaratnam	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EG020-T : EM2105106 #1-3 results for total metal have been confirmed by re-digestion and re-analysis.
- It is recognised that total metals are less than dissolved metals for samples #1 and #3. However, the difference is within experimental variation of the methods.
- EG020-F : EM2105106 #1-3 results for dissolved metal have been confirmed by re-preparation and re-analysis.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- ED045G: The presence of thiocyanate can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- EG020A-T: EM2105106 #2, Cadmium, Chromium, Copper, Iron, Lead, Manganese, Nickel and Zinc result/s confirmed via sample re-preparation and re-analysis.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	S4	SP3	S1	----	----
				Sampling date / time	23-Mar-2021 00:00	23-Mar-2021 00:00	23-Mar-2021 00:00	----	----
					EM2105106-001	EM2105106-002	EM2105106-003	--------	--------
					Result	Result	Result	----	----
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		**7.91**	**7.51**	**7.89**	**----**	**----**
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		**444**	**816**	**437**	**----**	**----**
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	5	mg/L		<5	**19600**	<5	**----**	**----**
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	**----**	**----**
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	<1	<1	**----**	**----**
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		**187**	**260**	**188**	**----**	**----**
Total Alkalinity as CaCO3	----	1	mg/L		**187**	**260**	**188**	**----**	**----**
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		**30**	**77**	**32**	**----**	**----**
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		**26**	**76**	**28**	**----**	**----**
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		**78**	**45**	**79**	**----**	**----**
Magnesium	7439-95-4	1	mg/L		**6**	**18**	**6**	**----**	**----**
Sodium	7440-23-5	1	mg/L		**14**	**79**	**14**	**----**	**----**
Potassium	7440-09-7	1	mg/L		**1**	**63**	**1**	**----**	**----**
EG020F: Dissolved Metals by ICP-MS									
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	**----**	**----**
Chromium	7440-47-3	0.001	mg/L		<0.001	**0.003**	<0.001	**----**	**----**
Copper	7440-50-8	0.001	mg/L		**0.005**	**0.023**	**0.104**	**----**	**----**
Lead	7439-92-1	0.001	mg/L		<0.001	**0.001**	**0.004**	**----**	**----**
Manganese	7439-96-5	0.001	mg/L		**0.006**	**0.138**	**0.019**	**----**	**----**
Nickel	7440-02-0	0.001	mg/L		<0.001	**0.011**	**0.018**	**----**	**----**
Zinc	7440-66-6	0.005	mg/L		<0.005	**0.042**	**0.213**	**----**	**----**
Iron	7439-89-6	0.05	mg/L		<0.05	**0.99**	<0.05	**----**	**----**
EG020T: Total Metals by ICP-MS									
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	**0.0006**	<0.0001	**----**	**----**
Chromium	7440-47-3	0.001	mg/L		<0.001	**0.047**	<0.001	**----**	**----**
Copper	7440-50-8	0.001	mg/L		<0.001	**0.130**	<0.001	**----**	**----**
Lead	7439-92-1	0.001	mg/L		<0.001	**0.072**	<0.001	**----**	**----**
Manganese	7439-96-5	0.001	mg/L		**0.006**	**0.556**	**0.015**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	S4	SP3	S1	----	----
				Sampling date / time	23-Mar-2021 00:00	23-Mar-2021 00:00	23-Mar-2021 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2105106-001	EM2105106-002	EM2105106-003	--------	--------
					Result	Result	Result	----	----
EG020T: Total Metals by ICP-MS - Continued									
Nickel	7440-02-0	0.001	mg/L		<0.001	**0.070**	<0.001	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	**0.615**	<0.005	----	----
Iron	7439-89-6	0.05	mg/L		**0.07**	**23.2**	**0.06**	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.03**	**0.69**	**0.08**	----	----
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	**0.22**	<0.01	----	----
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.66**	**4.66**	**0.56**	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.66**	**4.88**	**0.56**	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**0.2**	**11.9**	**0.1**	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		**0.9**	**16.8**	**0.7**	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.04**	**2.74**	**0.03**	----	----
EK071FG: Dissolved Reactive Phosphorus as P by DA									
Dissolved Reactive Phosphorus as P	----	0.01	mg/L		<0.01	**0.37**	<0.01	----	----
EN055: Ionic Balance									
ø Total Anions	----	0.01	meq/L		**5.09**	**8.94**	**5.21**	----	----
ø Total Cations	----	0.01	meq/L		**5.02**	**8.77**	**5.07**	----	----
ø Ionic Balance	----	0.01	%		**0.73**	**0.94**	**1.38**	----	----
EP030: Biochemical Oxygen Demand (BOD)									
Biochemical Oxygen Demand	----	2	mg/L		<2	**48**	<2	----	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2105110**	Page	: 1 of 6
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: SAMANTHA KING	Contact	: Shirley LeCornu
Address	: 21-23 PATERSON ST LAUNCESTON TAS, AUSTRALIA 7250	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9630
Project	: 3219202	Date Samples Received	: 25-Mar-2021 10:05
Order number	: 3219202	Date Analysis Commenced	: 25-Mar-2021
C-O-C number	: ----	Issue Date	: 01-Apr-2021 16:06
Sampler	: ZC		
Site	: Dulverton Landfill Water Monitoring		
Quote number	: EN/005		
No. of samples received	: 5		
No. of samples analysed	: 5		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Arenie Vijayaratnam	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- ED009x: LOR raised for Bromdie and Iodide due to sample matrix.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- It is recognised that total Nitrite +Nitrate as N is less than dissolved nitrite as N for samples #4. However, the difference is within experimental variation of the methods.
- EA015H: EM2105110 #1: TDS by method EA-015 may bias high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- EP030: The DO depletion for samples EM2105110 #1, 2, 3 & 5 is less than 2mg/L, this indicates that the sample have been over diluted and the BOD is less than 10 mg/L. The BOD results reported are estimated from the lowest dilution.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- Ionic balances were calculated using: major anions - chloride, alkalinity, sulfate ; and major cations - calcium, magnesium, potassium, sodium and iorn for #4..
- ED045G: The presence of thiocyanate can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	B12	B7	B6	B11	B8
				Sampling date / time	23-Mar-2021 00:00	23-Mar-2021 00:00	23-Mar-2021 00:00	23-Mar-2021 00:00	23-Mar-2021 00:00
					EM2105110-001	EM2105110-002	EM2105110-003	EM2105110-004	EM2105110-005
					Result	Result	Result	Result	Result
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		**160**	**303**	**250**	**430**	**526**
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		**9**	**249**	**181**	<1	**304**
Total Alkalinity as CaCO3	----	1	mg/L		**9**	**249**	**181**	<1	**304**
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		**2**	**5**	**11**	**2**	**3**
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		**41**	**16**	**27**	**263**	**43**
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		**3**	**95**	**56**	**2**	**122**
Magnesium	7439-95-4	1	mg/L		**2**	**4**	**15**	**10**	**4**
Sodium	7440-23-5	1	mg/L		**25**	**11**	**19**	**67**	**21**
Potassium	7440-09-7	1	mg/L		<1	<1	**2**	**1**	**3**
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	**0.0006**
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		**0.002**	<0.001	<0.001	**0.006**	<0.001
Nickel	7440-02-0	0.001	mg/L		**0.004**	<0.001	<0.001	**0.017**	**0.009**
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	**0.003**	<0.001
Zinc	7440-66-6	0.005	mg/L		**0.009**	<0.005	<0.005	**0.060**	**0.012**
Manganese	7439-96-5	0.001	mg/L		**0.020**	**0.005**	**0.103**	**0.091**	**0.280**
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Iron	7439-89-6	0.05	mg/L		<0.05	<0.05	**3.36**	**61.1**	<0.05
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.03**	**0.03**	**0.09**	**1.05**	**0.02**
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	**0.01**	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**2.16**	<0.01	<0.01	<0.01	**0.97**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	B12	B7	B6	B11	B8
				Sampling date / time	23-Mar-2021 00:00	23-Mar-2021 00:00	23-Mar-2021 00:00	23-Mar-2021 00:00	23-Mar-2021 00:00
					EM2105110-001	EM2105110-002	EM2105110-003	EM2105110-004	EM2105110-005
					Result	Result	Result	Result	Result
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**2.16**	<0.01	<0.01	<0.01	**0.97**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**0.9**	<0.1	**0.1**	**1.3**	**0.4**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ **Total Nitrogen as N**	----	0.1	mg/L		**3.1**	<0.1	**0.1**	**1.3**	**1.4**
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.05**	**0.04**	**0.12**	**0.07**	**0.14**
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EN055: Ionic Balance									
ø **Total Anions**	----	0.01	meq/L		**1.38**	**5.53**	**4.61**	**7.46**	**7.35**
ø **Total Cations**	----	0.01	meq/L		**----**	**----**	**----**	**7.14**	**----**
ø **Total Cations**	----	0.01	meq/L		**1.40**	**5.55**	**4.91**	**----**	**7.41**
ø **Ionic Balance**	----	0.01	%		**----**	**----**	**----**	**2.20**	**----**
ø **Ionic Balance**	----	0.01	%		**0.85**	**0.16**	**3.15**	**----**	**0.39**
EP002: Dissolved Organic Carbon (DOC)									
Dissolved Organic Carbon	----	1	mg/L		<1	<1	<1	<1	<1
EP030: Biochemical Oxygen Demand (BOD)									
Biochemical Oxygen Demand	----	2	mg/L		<10	<10	<10	**8**	<10
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	<20	<20
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	<100	<100	<100	<100

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	B12	B7	B6	B11	B8
				Sampling date / time	23-Mar-2021 00:00	23-Mar-2021 00:00	23-Mar-2021 00:00	23-Mar-2021 00:00	23-Mar-2021 00:00
Compound	CAS Number	LOR	Unit		EM2105110-001	EM2105110-002	EM2105110-003	EM2105110-004	EM2105110-005
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	<100	<100	<100	<100
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ **Total Xylenes**	----	2	µg/L		<2	<2	<2	<2	<2
^ **Sum of BTEX**	----	1	µg/L		<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
ED009: Anions									
Bromide	24959-67-9	0.010	mg/L		<0.500	<0.500	<0.500	<0.500	<0.500
Iodide	20461-54-5	0.010	mg/L		<0.500	<0.500	<0.500	<0.500	<0.500
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**107**	**103**	**104**	**101**	**103**
Toluene-D8	2037-26-5	2	%		**105**	**103**	**102**	**104**	**105**
4-Bromofluorobenzene	460-00-4	2	%		**109**	**108**	**105**	**108**	**110**

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129

Inter-Laboratory Testing

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry) 14913 (Biology).

(WATER) ED009: Anions

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2105128**	Page	: 1 of 6
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: SAMANTHA KING	Contact	: Shirley LeCornu
Address	: 21-23 PATERSON ST LAUNCESTON TAS, AUSTRALIA 7250	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9630
Project	: 3219202	Date Samples Received	: 25-Mar-2021 10:05
Order number	: 3219202	Date Analysis Commenced	: 25-Mar-2021
C-O-C number	: ----	Issue Date	: 31-Mar-2021 16:33
Sampler	: ZC		
Site	: Dulverton Landfill Water Monitoring		
Quote number	: EN/005		
No. of samples received	: 1		
No. of samples analysed	: 1		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EK026SF: EM2105086 #2. Poor matrix spike recovery for Total Cyanide due to matrix effects. Confirmed by re-preparation and re-analysis.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- Ionic Balance out of acceptable limits due to analytes not quantified in this report.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium, sodium and ammonia.
- ED045G: The presence of thiocyanate can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Compost Leachate	----	----	----	----
				Sampling date / time	23-Mar-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2105128-001	--------	--------	--------	--------
					Result	----	----	----	----
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		**3540**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L		**3540**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		**26**	----	----	----	----
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		**1220**	----	----	----	----
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		**106**	----	----	----	----
Magnesium	7439-95-4	1	mg/L		**74**	----	----	----	----
Sodium	7440-23-5	1	mg/L		**766**	----	----	----	----
Potassium	7440-09-7	1	mg/L		**1100**	----	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		**0.07**	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L		**0.033**	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		**0.008**	----	----	----	----
Copper	7440-50-8	0.001	mg/L		**0.001**	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		**0.058**	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		**0.007**	----	----	----	----
Manganese	7439-96-5	0.001	mg/L		**0.411**	----	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	----	----	----	----
Iron	7439-89-6	0.05	mg/L		**0.87**	----	----	----	----
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		**1.40**	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L		**0.040**	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		**0.0002**	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		**0.012**	----	----	----	----
Copper	7440-50-8	0.001	mg/L		**0.012**	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		**0.075**	----	----	----	----
Lead	7439-92-1	0.001	mg/L		**0.005**	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		**0.173**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Compost Leachate	----	----	----	----
				Sampling date / time	23-Mar-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2105128-001	--------	--------	--------	--------
					Result	----	----	----	----
EG020T: Total Metals by ICP-MS - Continued									
Manganese	7439-96-5	0.001	mg/L		**1.46**	----	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	----	----	----	----
Iron	7439-89-6	0.05	mg/L		**7.36**	----	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	0.004	mg/L		<0.004	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**120**	----	----	----	----
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	----	----	----	----
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**297**	----	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		**297**	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**122**	----	----	----	----
EN055: Ionic Balance									
ø Total Anions	----	0.01	meq/L		**106**	----	----	----	----
ø Total Cations	----	0.01	meq/L		**81.4**	----	----	----	----
ø Ionic Balance	----	0.01	%		**13.0**	----	----	----	----
EP030: Biochemical Oxygen Demand (BOD)									
Biochemical Oxygen Demand	----	2	mg/L		**761**	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		**100**	----	----	----	----
C10 - C14 Fraction	----	50	µg/L		**960**	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		**2810**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Compost Leachate	----	----	----	----
				Sampling date / time	23-Mar-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2105128-001	--------	--------	--------	--------
					Result	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons - Continued									
C29 - C36 Fraction	----	50	µg/L		**1700**	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		**5470**	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		**90**	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		**70**	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		**1300**	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		**4030**	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		**160**	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		**5490**	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		**1300**	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		**23**	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ **Total Xylenes**	----	2	µg/L		<2	----	----	----	----
^ **Sum of BTEX**	----	1	µg/L		**23**	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**98.2**	----	----	----	----
Toluene-D8	2037-26-5	2	%		**90.0**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**98.5**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2105221**	Page	: 1 of 6
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: SAMANTHA KING	Contact	: Shirley LeCornu
Address	: 21-23 PATERSON ST LAUNCESTON TAS, AUSTRALIA 7250	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9630
Project	: 3219202	Date Samples Received	: 26-Mar-2021 10:25
Order number	: 3219202	Date Analysis Commenced	: 26-Mar-2021
C-O-C number	: ----	Issue Date	: 06-Apr-2021 17:15
Sampler	: ZC		
Site	:		
Quote number	: EN/005		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

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- Analytical Results
- Surrogate Control Limits

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Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Arenie Vijayaratnam	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EK085: EM2105221-004 required dilution prior to analysis due to matrix interferences.
- ED037-P: EM2105221 #4. Samples were run under manual method for Alkalinity (ED037)
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EG035F: EM2105188 #2 Poor matrix spike recovery for dissolved mercury confirmed by re-extraction and re-analysis.
- ED093F: EM2105221 #1 & #4 has been confirmed for major cations by re-preparation and re-analysis.
- ED009x: LOR raised for Iodide due to sample matrix.
- EA015H: EM2105221 #1 & #3: TDS by method EA-015 may bias high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- Ionic Balance out of acceptable limits for sample #1 & #4 due to analytes not quantified in this report. Total major cations and total major anions have been confirmed by re-preparation and re-analysis.
- EP030: The DO depletion for samples EM2105221 #1, 2 & 3 is less than 2mg/L, this indicates that the samples have been over diluted and the BOD is less than 10 mg/L. The BOD results reported are estimated from the lowest dilution.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- Ionic balances were calculated using: major anions - chloride, alkalinity, sulfate ; and major cations - calcium, magnesium, potassium, sodium and ammonia for #4.
- ED045G: The presence of thiocyanate can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- EK085: EM2105257-001 Poor matrix spike recovery for sulphide due to sample matrix. Confirmed by re-extraction and re-analysis.
- EK086/EK087: EM2105221 #4, a dilution was required prior to analysis due to sample matrix. LOR has been raised accordingly.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	B2	B4	B9	Pomona Pump	----
			Sampling date / time	24-Mar-2021 00:00	24-Mar-2021 00:00	24-Mar-2021 00:00	24-Mar-2021 00:00	----
Compound	CAS Number	LOR	Unit	EM2105221-001	EM2105221-002	EM2105221-003	EM2105221-004	--------
				Result	Result	Result	Result	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**1120**	**1660**	**533**	**9030**	----
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	----	----	----	**54**	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**171**	**288**	**171**	**7280**	----
Total Alkalinity as CaCO3	----	1	mg/L	**171**	**288**	**171**	**7280**	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**48**	**5**	**21**	<1	----
ED043S: Total Oxidised Sulfur as S								
Total Oxidised Sulfur as S	----	10	mg/L	----	----	----	**20**	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**100**	**660**	**21**	**4150**	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**145**	**283**	**70**	**77**	----
Magnesium	7439-95-4	1	mg/L	**12**	**14**	**4**	**55**	----
Sodium	7440-23-5	1	mg/L	**242**	**151**	**12**	**2220**	----
Potassium	7440-09-7	1	mg/L	**46**	<1	<1	**855**	----
EG020F: Dissolved Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	**0.002**	<0.001	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L	**0.016**	**0.001**	<0.001	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Zinc	7440-66-6	0.005	mg/L	**0.008**	**0.008**	<0.005	----	----
Manganese	7439-96-5	0.001	mg/L	**2.89**	**0.571**	**0.001**	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	----	----
Iron	7439-89-6	0.05	mg/L	**23.4**	**29.9**	<0.05	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**4.31**	**0.32**	<0.01	**896**	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	B2	B4	B9	Pomona Pump	----
				Sampling date / time	24-Mar-2021 00:00	24-Mar-2021 00:00	24-Mar-2021 00:00	24-Mar-2021 00:00	----
Compound	CAS Number	LOR	Unit		EM2105221-001	EM2105221-002	EM2105221-003	EM2105221-004	--------
					Result	Result	Result	Result	----
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		**0.15**	<0.01	<0.01	----	----
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**2.38**	**0.02**	**0.49**	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**2.53**	**0.02**	**0.49**	**0.13**	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**8.6**	**0.4**	**0.5**	**1180**	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		**11.1**	**0.4**	**1.0**	**1180**	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**1.30**	**0.13**	**0.09**	**9.35**	----
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		**0.12**	<0.01	<0.01	----	----
EK085M: Sulfide as S2-									
Sulfide as S2-	18496-25-8	0.1	mg/L		----	----	----	**1.4**	----
EK086: Sulfite as SO3 2-									
Sulfite as SO3 2-	14265-45-3	2	mg/L		----	----	----	**12**	----
EK087: Thiosulfate as S2O3 2-									
Thiosulfate as S2O3 2-	----	2	mg/L		----	----	----	**10**	----
EN055: Ionic Balance									
ø Total Anions	----	0.01	meq/L		**7.24**	**24.5**	**4.45**	**262**	----
ø Total Cations	----	0.01	meq/L		----	----	----	**191**	----
ø Total Cations	----	0.01	meq/L		**19.9**	**21.8**	**4.34**	----	----
ø Ionic Balance	----	0.01	%		----	----	----	**15.8**	----
ø Ionic Balance	----	0.01	%		**46.7**	**5.69**	**1.16**	----	----
EP002: Dissolved Organic Carbon (DOC)									
Dissolved Organic Carbon	----	1	mg/L		**9**	<1	<1	----	----
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		----	----	----	**24**	----
EP030: Biochemical Oxygen Demand (BOD)									
Biochemical Oxygen Demand	----	2	mg/L		<10	<10	<10	**308**	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	B2	B4	B9	Pomona Pump	----
				Sampling date / time	24-Mar-2021 00:00	24-Mar-2021 00:00	24-Mar-2021 00:00	24-Mar-2021 00:00	----
Compound	CAS Number	LOR	Unit		EM2105221-001	EM2105221-002	EM2105221-003	EM2105221-004	--------
					Result	Result	Result	Result	----
EP080/071: Total Petroleum Hydrocarbons - Continued									
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	----	----
C15 - C28 Fraction	----	100	µg/L		**580**	<100	**120**	----	----
C29 - C36 Fraction	----	50	µg/L		**390**	<50	<50	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		**970**	<50	**120**	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	<20	<20	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	<100	<100	----	----
>C16 - C34 Fraction	----	100	µg/L		**900**	<100	**140**	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		**900**	<100	**140**	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	<100	<100	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	----	----
^ **Total Xylenes**	----	2	µg/L		<2	<2	<2	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	----	----
ED009: Anions									
Bromide	24959-67-9	0.010	mg/L		**0.105**	**0.490**	**0.056**	----	----
Iodide	20461-54-5	0.010	mg/L		<0.500	<0.500	<0.500	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**102**	**85.5**	**89.9**	----	----
Toluene-D8	2037-26-5	2	%		**104**	**83.6**	**92.0**	----	----
4-Bromofluorobenzene	460-00-4	2	%		**104**	**91.1**	**94.0**	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129

Inter-Laboratory Testing

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry) 14913 (Biology).

(WATER) ED009: Anions

(WATER) EP020: Oil and Grease (O&G)

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2111910**	Page	: 1 of 21
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: SAMANTHA KING	Contact	: Shirley LeCornu
Address	: 21-23 PATERSON ST LAUNCESTON TAS, AUSTRALIA 7250	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9630
Project	: 3219202	Date Samples Received	: 24-Jun-2021 11:15
Order number	: 3219202	Date Analysis Commenced	: 24-Jun-2021
C-O-C number	: ----	Issue Date	: 02-Jul-2021 17:04
Sampler	: SAMANTHA KING		
Site	:		
Quote number	: EN/005		
No. of samples received	: 11		
No. of samples analysed	: 11		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Samantha Smith	Laboratory Coordinator	WRG Subcontracting, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EK086: EM2111910-011 required dilution prior to analysis due to matrix interferences.
- EK087: EM2111910-011 required dilution prior to analysis due to matrix interferences.
- EK026SF: EM2111910 #10,11. Particular samples required dilution prior to analysis for Cyanide due to matrix interferences. LOR values have been adjusted accordingly.
- EK085: EM2111910-011 required dilution prior to analysis due to matrix interferences.
- ED037-P: EM2111910# 11. Particular samples were run via manual method for Alkalinity(ED037) due to sample matrix.
- EP075: Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- It is recognised that total copper and zinc is less than dissolved copper and zinc for sample #2. However, the difference is within experimental variation of the methods.
- ED041G: sample EM2111910-010 has been diluted prior to analysis due to sample matrix. LORs have been raised accordingly.
- It is recognised that TKN and zinc is less than ammonia for sample #11. However, the difference is within experimental variation of the methods.
- It has been noted that Ammonia is greater than TKN, however this difference is within the limits of experimental variation for sample #11.
- Total Coliforms and E.coli by MF (Chromogenic Media) (MM698) is conducted by ALS Scoresby NATA accreditation no. 992, site no. 989.
- E.coli and Faecal Coliforms by MF (Chromogenic Media) (MM696) is conducted by ALS Scoresby NATA accreditation no. 992, site no. 989.
- Ionic Balance out of acceptable limits due to analytes not quantified in this report.
- EP075: Particular sample EM2111910_011 required dilution prior to analysis due to matrix interferences. LOR values have been adjusted accordingly.
- MBAS (EP050) is calculated as LAS, molecular weight 348 g/mol.
- EP030: The DO depletion for sample EM2111910-006 is less than 2mg/L, this indicates that the sample has been over diluted and the BOD is less than 10 mg/L. The BOD result reported was estimated from the lowest dilution.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium, sodium and ammonia sample #11.
- ED045G: The presence of thiocyanate can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.

- EK055G: EM21119-009, Poor matrix spike recovery for ammonia as N due to matrix effects.
- EP075: Where reported, 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- HPC @ 22C and 36C (MM524) is conducted by ALS Scoresby NATA accreditation no. 992, site no. 989.
- E.coli & Total Coliforms by MPN (MM514) is conducted by ALS Scoresby NATA accreditation no. 992, site no. 989.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MC Bore	Site Office	S1	S2	S3
			Sampling date / time	22-Jun-2021 00:00	22-Jun-2021 00:00	22-Jun-2021 00:00	22-Jun-2021 00:00	22-Jun-2021 00:00
Compound	CAS Number	LOR	Unit	EM2111910-001	EM2111910-002	EM2111910-003	EM2111910-004	EM2111910-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**7.55**	**7.05**	**8.44**	**8.42**	**8.27**
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**883**	**662**	**502**	**487**	**1150**
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	**26**	<5	<5	**8**	**45**
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	**14**	**13**	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**27**	**12**	**189**	**186**	**287**
Total Alkalinity as CaCO3	----	1	mg/L	**27**	**12**	**203**	**199**	**287**
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**10**	**14**	**33**	**31**	**85**
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**6**	**8**	**28**	**27**	**116**
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**10**	**9**	**76**	**76**	**70**
Magnesium	7439-95-4	1	mg/L	<1	**2**	**6**	**6**	**17**
Sodium	7440-23-5	1	mg/L	**5**	**5**	**16**	**14**	**79**
Potassium	7440-09-7	1	mg/L	**5**	<1	**1**	**1**	**59**
EG020F: Dissolved Metals by ICP-MS								
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	**0.006**	**0.032**	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----
Manganese	7439-96-5	0.001	mg/L	**0.001**	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	----	----	----
Zinc	7440-66-6	0.005	mg/L	**0.057**	**0.018**	----	----	----
Iron	7439-89-6	0.05	mg/L	**0.07**	<0.05	----	----	----
EG020T: Total Metals by ICP-MS								
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	**0.008**	**0.029**	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----
Manganese	7439-96-5	0.001	mg/L	**0.003**	<0.001	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MC Bore	Site Office	S1	S2	S3
				Sampling date / time	22-Jun-2021 00:00	22-Jun-2021 00:00	22-Jun-2021 00:00	22-Jun-2021 00:00	22-Jun-2021 00:00
Compound	CAS Number	LOR	Unit		EM2111910-001	EM2111910-002	EM2111910-003	EM2111910-004	EM2111910-005
					Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued									
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	----	----	----
Zinc	7440-66-6	0.005	mg/L		**0.071**	**0.016**	----	----	----
Iron	7439-89-6	0.05	mg/L		**0.52**	<0.05	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	**5.94**
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		**0.04**	**0.02**	<0.01	<0.01	**0.20**
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.41**	**0.24**	**1.00**	**0.95**	**2.90**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.45**	**0.26**	**1.00**	**0.95**	**3.10**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**0.1**	**0.2**	**0.2**	**0.2**	**10.6**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		**0.6**	**0.5**	**1.2**	**1.2**	**13.7**
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.04**	**0.01**	**0.01**	**0.01**	**0.94**
EK071FG: Dissolved Reactive Phosphorus as P by DA									
Dissolved Reactive Phosphorus as P	----	0.01	mg/L		**0.03**	**0.02**	**0.02**	<0.01	**0.61**
EN055: Ionic Balance									
ø Total Anions	----	0.01	meq/L		**0.92**	**0.76**	**5.53**	**5.38**	**10.8**
ø Total Cations	----	0.01	meq/L		**0.84**	**0.83**	**5.01**	**4.92**	**9.84**
ø Ionic Balance	----	0.01	%		**4.12**	**4.68**	**4.98**	**4.49**	**4.55**
EP030: Biochemical Oxygen Demand (BOD)									
Biochemical Oxygen Demand	----	2	mg/L		<2	<2	<2	<2	**2**
MM524: Heterotrophic (Total) Plate Count @ 22C and 36C									
Heterotrophic Plate Count (22°C)	----	1	orgs/mL		**160**	**16**	----	----	----
Heterotrophic Plate Count (36°C)	----	1	orgs/mL		**12**	**0**	----	----	----
MM696: E. coli & Faecal Coliforms by MF (Chromogenic)									
Escherichia coli	----	1	CFU/100mL		**3**	**0**	----	----	----
Faecal Coliforms	----	1	CFU/100mL		**4**	**2**	----	----	----
MM698: Total Coliforms and E. coli by MF (Chromogenic)									
Total Coliforms by MF	----	1	CFU/100mL		**540**	**82**	----	----	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	SP3	S4	S7	QC	Compost Leachate
				Sampling date / time	22-Jun-2021 00:00	22-Jun-2021 00:00	22-Jun-2021 00:00	22-Jun-2021 00:00	22-Jun-2021 00:00
					EM2111910-006	EM2111910-007	EM2111910-008	EM2111910-009	EM2111910-010
					Result	Result	Result	Result	Result
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		**8.30**	**8.27**	**8.35**	**8.43**	**----**
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		**823**	**405**	**2320**	**485**	**----**
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	5	mg/L		**33**	**6**	**315**	**12**	**----**
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		**2**	<1	**8**	**13**	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		**240**	**150**	**558**	**183**	**2280**
Total Alkalinity as CaCO3	----	1	mg/L		**242**	**150**	**566**	**196**	**2280**
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		**60**	**23**	**212**	**31**	<5
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		**63**	**27**	**273**	**26**	**1020**
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		**40**	**56**	**88**	**75**	**127**
Magnesium	7439-95-4	1	mg/L		**16**	**5**	**47**	**5**	**84**
Sodium	7440-23-5	1	mg/L		**69**	**15**	**181**	**14**	**640**
Potassium	7440-09-7	1	mg/L		**56**	**1**	**197**	**1**	**895**
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		**----**	**----**	**----**	**----**	**0.10**
Arsenic	7440-38-2	0.001	mg/L		**----**	**----**	**----**	**----**	**0.022**
Cadmium	7440-43-9	0.0001	mg/L		**----**	**----**	**----**	**----**	<0.0001
Chromium	7440-47-3	0.001	mg/L		**----**	**----**	**----**	**----**	**0.006**
Copper	7440-50-8	0.001	mg/L		**----**	**----**	**----**	**----**	**0.001**
Lead	7439-92-1	0.001	mg/L		**----**	**----**	**----**	**----**	<0.001
Manganese	7439-96-5	0.001	mg/L		**----**	**----**	**----**	**----**	**1.43**
Nickel	7440-02-0	0.001	mg/L		**----**	**----**	**----**	**----**	**0.038**
Selenium	7782-49-2	0.01	mg/L		**----**	**----**	**----**	**----**	<0.01
Zinc	7440-66-6	0.005	mg/L		**----**	**----**	**----**	**----**	**0.010**
Iron	7439-89-6	0.05	mg/L		**----**	**----**	**----**	**----**	**2.53**
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		**----**	**----**	**----**	**----**	**4.20**
Arsenic	7440-38-2	0.001	mg/L		**----**	**----**	**----**	**----**	**0.036**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	SP3	S4	S7	QC	Compost Leachate
				Sampling date / time	22-Jun-2021 00:00	22-Jun-2021 00:00	22-Jun-2021 00:00	22-Jun-2021 00:00	22-Jun-2021 00:00
					EM2111910-006	EM2111910-007	EM2111910-008	EM2111910-009	EM2111910-010
					Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued									
Cadmium	7440-43-9	0.0001	mg/L		----	----	----	----	**0.0002**
Chromium	7440-47-3	0.001	mg/L		----	----	----	----	**0.020**
Copper	7440-50-8	0.001	mg/L		----	----	----	----	**0.034**
Lead	7439-92-1	0.001	mg/L		----	----	----	----	**0.012**
Manganese	7439-96-5	0.001	mg/L		----	----	----	----	**2.08**
Nickel	7440-02-0	0.001	mg/L		----	----	----	----	**0.074**
Selenium	7782-49-2	0.01	mg/L		----	----	----	----	<0.01
Zinc	7440-66-6	0.005	mg/L		----	----	----	----	**0.281**
Iron	7439-89-6	0.05	mg/L		----	----	----	----	**16.2**
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		----	----	----	----	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		----	----	----	----	<0.0001
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	0.004	mg/L		----	----	----	----	<0.010
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.15**	**0.01**	**33.6**	**0.08**	**276**
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		**0.42**	**0.01**	**0.50**	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**7.52**	**0.67**	**19.3**	**0.99**	**0.02**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**7.94**	**0.68**	**19.8**	**0.99**	**0.02**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**10.1**	**0.1**	**56.4**	**0.2**	**403**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ **Total Nitrogen as N**	----	0.1	mg/L		**18.0**	**0.8**	**76.2**	**1.2**	**403**
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**2.00**	<0.01	**7.62**	<0.01	**143**
EK071FG: Dissolved Reactive Phosphorus as P by DA									
Dissolved Reactive Phosphorus as P	----	0.01	mg/L		**1.70**	**0.02**	**4.90**	**0.03**	**----**
EN055: Ionic Balance									
ø **Total Anions**	----	0.01	meq/L		**7.86**	**4.24**	**23.4**	**5.29**	**74.3**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SP3	S4	S7	QC	Compost Leachate
				Sampling date / time	22-Jun-2021 00:00	22-Jun-2021 00:00	22-Jun-2021 00:00	22-Jun-2021 00:00	22-Jun-2021 00:00
Compound	CAS Number	LOR	Unit		EM2111910-006	EM2111910-007	EM2111910-008	EM2111910-009	EM2111910-010
					Result	Result	Result	Result	Result
EN055: Ionic Balance - Continued									
ø **Total Cations**	----	0.01	meq/L		**7.75**	**3.88**	**21.2**	**4.79**	**64.0**
ø **Ionic Balance**	----	0.01	%		**0.74**	**4.35**	**5.05**	**5.02**	**7.48**
EP030: Biochemical Oxygen Demand (BOD)									
Biochemical Oxygen Demand	----	2	mg/L		<10	<2	**11**	<2	**1860**
EP080/071: Total Petroleum Hydrocarbons									
C10 - C14 Fraction	----	50	µg/L		**----**	**----**	**----**	**----**	**7120**
C15 - C28 Fraction	----	100	µg/L		**----**	**----**	**----**	**----**	**36200**
C29 - C36 Fraction	----	50	µg/L		**----**	**----**	**----**	**----**	**830**
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		**----**	**----**	**----**	**----**	**44200**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
>C10 - C16 Fraction	----	100	µg/L		**----**	**----**	**----**	**----**	**9780**
>C16 - C34 Fraction	----	100	µg/L		**----**	**----**	**----**	**----**	**32600**
>C34 - C40 Fraction	----	100	µg/L		**----**	**----**	**----**	**----**	**540**
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		**----**	**----**	**----**	**----**	**42900**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Landfill Leachate	----	----	----	----
				Sampling date / time	22-Jun-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2111910-011	--------	--------	--------	--------
					Result	----	----	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		**5080**	----	----	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	5	mg/L		**63**	----	----	----	----
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		**2620**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L		**2620**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		**24**	----	----	----	----
ED043: Total Oxidised Sulfur as SO4 2-									
Total Oxidised Sulfur as SO4 2-	----	10	mg/L		**90**	----	----	----	----
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		**1710**	----	----	----	----
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		**77**	----	----	----	----
Magnesium	7439-95-4	1	mg/L		**48**	----	----	----	----
Sodium	7440-23-5	1	mg/L		**1130**	----	----	----	----
Potassium	7440-09-7	1	mg/L		**418**	----	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		**0.44**	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L		**0.049**	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		**0.157**	----	----	----	----
Copper	7440-50-8	0.001	mg/L		**0.031**	----	----	----	----
Lead	7439-92-1	0.001	mg/L		**0.002**	----	----	----	----
Manganese	7439-96-5	0.001	mg/L		**0.282**	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		**0.064**	----	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		**0.065**	----	----	----	----
Iron	7439-89-6	0.05	mg/L		**0.98**	----	----	----	----
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		**0.66**	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L		**0.057**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Landfill Leachate	----	----	----	----
				Sampling date / time	22-Jun-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2111910-011	--------	--------	--------	--------
					Result	----	----	----	----
EG020T: Total Metals by ICP-MS - Continued									
Cadmium	7440-43-9	0.0001	mg/L		**0.0001**	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		**0.213**	----	----	----	----
Copper	7440-50-8	0.001	mg/L		**0.604**	----	----	----	----
Lead	7439-92-1	0.001	mg/L		**0.023**	----	----	----	----
Manganese	7439-96-5	0.001	mg/L		**0.342**	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		**0.072**	----	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.01	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		**0.368**	----	----	----	----
Iron	7439-89-6	0.05	mg/L		**3.71**	----	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	0.004	mg/L		<0.010	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**564**	----	----	----	----
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	----	----	----	----
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.01**	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.01**	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**558**	----	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		**558**	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**5.78**	----	----	----	----
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		**3.28**	----	----	----	----
EK085M: Sulfide as S2-									
Sulfide as S2-	18496-25-8	0.1	mg/L		**1.0**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Landfill Leachate	----	----	----	----
				Sampling date / time	22-Jun-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2111910-011	--------	--------	--------	--------
					Result	----	----	----	----
EK086: Sulfite as SO3 2-									
Sulfite as SO3 2-	14265-45-3	2	mg/L		10	----	----	----	----
EK087: Thiosulfate as S2O3 2-									
Thiosulfate as S2O3 2-	----	2	mg/L		28	----	----	----	----
EN055: Ionic Balance									
ø Total Anions	----	0.01	meq/L		101	----	----	----	----
ø Total Cations	----	0.01	meq/L		108	----	----	----	----
ø Ionic Balance	----	0.01	%		3.25	----	----	----	----
EP002: Dissolved Organic Carbon (DOC)									
Dissolved Organic Carbon	----	1	mg/L		353	----	----	----	----
EP010: Formaldehyde									
Formaldehyde	50-00-0	0.1	mg/L		0.6	----	----	----	----
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		7	----	----	----	----
EP030: Biochemical Oxygen Demand (BOD)									
Biochemical Oxygen Demand	----	2	mg/L		89	----	----	----	----
EP050: Anionic Surfactants as MBAS									
Anionic Surfactants as MBAS	----	0.1	mg/L		0.7	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
^ Total Polychlorinated biphenyls	----	1	µg/L		<1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L		<0.5	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L		<0.5	----	----	----	----
beta-BHC	319-85-7	0.5	µg/L		<0.5	----	----	----	----
gamma-BHC	58-89-9	0.5	µg/L		<0.5	----	----	----	----
delta-BHC	319-86-8	0.5	µg/L		<0.5	----	----	----	----
Heptachlor	76-44-8	0.5	µg/L		<0.5	----	----	----	----
Aldrin	309-00-2	0.5	µg/L		<0.5	----	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L		<0.5	----	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L		<0.5	----	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L		<0.5	----	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L		<0.5	----	----	----	----
Dieldrin	60-57-1	0.5	µg/L		<0.5	----	----	----	----
4.4`-DDE	72-55-9	0.5	µg/L		<0.5	----	----	----	----
Endrin	72-20-8	0.5	µg/L		<0.5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Landfill Leachate	----	----	----	----
				Sampling date / time	22-Jun-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2111910-011	--------	--------	--------	--------
					Result	----	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
beta-Endosulfan	33213-65-9	0.5	µg/L		<0.5	----	----	----	----
4.4`-DDD	72-54-8	0.5	µg/L		<0.5	----	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L		<0.5	----	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L		<0.5	----	----	----	----
4.4`-DDT	50-29-3	2.0	µg/L		<2.0	----	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L		<0.5	----	----	----	----
Methoxychlor	72-43-5	2.0	µg/L		<2.0	----	----	----	----
^ Total Chlordane (sum)	----	0.5	µg/L		<0.5	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L		<0.5	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L		<0.5	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.5	µg/L		<0.5	----	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L		<0.5	----	----	----	----
Monocrotophos	6923-22-4	2.0	µg/L		<2.0	----	----	----	----
Dimethoate	60-51-5	0.5	µg/L		<0.5	----	----	----	----
Diazinon	333-41-5	0.5	µg/L		<0.5	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L		<0.5	----	----	----	----
Parathion-methyl	298-00-0	2.0	µg/L		<2.0	----	----	----	----
Malathion	121-75-5	0.5	µg/L		<0.5	----	----	----	----
Fenthion	55-38-9	0.5	µg/L		<0.5	----	----	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L		<0.5	----	----	----	----
Parathion	56-38-2	2.0	µg/L		<2.0	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L		<0.5	----	----	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L		<0.5	----	----	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L		<0.5	----	----	----	----
Fenamiphos	22224-92-6	0.5	µg/L		<0.5	----	----	----	----
Prothiofos	34643-46-4	0.5	µg/L		<0.5	----	----	----	----
Ethion	563-12-2	0.5	µg/L		<0.5	----	----	----	----
Carbophenothion	786-19-6	0.5	µg/L		<0.5	----	----	----	----
Azinphos Methyl	86-50-0	0.5	µg/L		<0.5	----	----	----	----
EP074B: Oxygenated Compounds									
2-Propanone (Acetone)	67-64-1	50	µg/L		<50	----	----	----	----
Vinyl Acetate	108-05-4	50	µg/L		<50	----	----	----	----
2-Butanone (MEK)	78-93-3	50	µg/L		<50	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Landfill Leachate	----	----	----	----
				Sampling date / time	22-Jun-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2111910-011	--------	--------	--------	--------
					Result	----	----	----	----
EP074B: Oxygenated Compounds - Continued									
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L		<50	----	----	----	----
2-Hexanone (MBK)	591-78-6	50	µg/L		<50	----	----	----	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	5	µg/L		<5	----	----	----	----
1.2-Dichloropropane	78-87-5	5	µg/L		<5	----	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L		<5	----	----	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L		<5	----	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L		<5	----	----	----	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	50	µg/L		<50	----	----	----	----
Chloromethane	74-87-3	50	µg/L		<50	----	----	----	----
Vinyl chloride	75-01-4	50	µg/L		<50	----	----	----	----
Bromomethane	74-83-9	50	µg/L		<50	----	----	----	----
Chloroethane	75-00-3	50	µg/L		<50	----	----	----	----
Trichlorofluoromethane	75-69-4	50	µg/L		<50	----	----	----	----
1.1-Dichloroethene	75-35-4	5	µg/L		<5	----	----	----	----
Iodomethane	74-88-4	5	µg/L		<5	----	----	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L		<5	----	----	----	----
1.1-Dichloroethane	75-34-3	5	µg/L		<5	----	----	----	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L		<5	----	----	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L		<5	----	----	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L		<5	----	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L		<5	----	----	----	----
1.2-Dichloroethane	107-06-2	5	µg/L		<5	----	----	----	----
Trichloroethene	79-01-6	5	µg/L		<5	----	----	----	----
Dibromomethane	74-95-3	5	µg/L		<5	----	----	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L		<5	----	----	----	----
1.3-Dichloropropane	142-28-9	5	µg/L		<5	----	----	----	----
Tetrachloroethene	127-18-4	5	µg/L		<5	----	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L		<5	----	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L		<5	----	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L		<5	----	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L		<5	----	----	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L		<5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Landfill Leachate	----	----	----	----
				Sampling date / time	22-Jun-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2111910-011	--------	--------	--------	--------
					Result	----	----	----	----
EP074E: Halogenated Aliphatic Compounds - Continued									
Pentachloroethane	76-01-7	5	µg/L		<5	----	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	----	----	----	----
Hexachlorobutadiene	87-68-3	5	µg/L		<5	----	----	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	----	----	----	----
Bromobenzene	108-86-1	5	µg/L		<5	----	----	----	----
2-Chlorotoluene	95-49-8	5	µg/L		<5	----	----	----	----
4-Chlorotoluene	106-43-4	5	µg/L		<5	----	----	----	----
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	----	----	----	----
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	----	----	----	----
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	----	----	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	----	----	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	----	----	----	----
Bromodichloromethane	75-27-4	5	µg/L		<5	----	----	----	----
Dibromochloromethane	124-48-1	5	µg/L		<5	----	----	----	----
Bromoform	75-25-2	5	µg/L		<5	----	----	----	----
EP075A: Phenolic Compounds									
Phenol	108-95-2	2	µg/L		<4	----	----	----	----
2-Chlorophenol	95-57-8	2	µg/L		<4	----	----	----	----
2-Methylphenol	95-48-7	2	µg/L		5	----	----	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L		8	----	----	----	----
2-Nitrophenol	88-75-5	2	µg/L		<4	----	----	----	----
2.4-Dimethylphenol	105-67-9	2	µg/L		<4	----	----	----	----
2.4-Dichlorophenol	120-83-2	2	µg/L		<4	----	----	----	----
2.6-Dichlorophenol	87-65-0	2	µg/L		<4	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L		<4	----	----	----	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L		<4	----	----	----	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L		<4	----	----	----	----
Pentachlorophenol	87-86-5	4	µg/L		<4	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	2	µg/L		<4	----	----	----	----
2-Methylnaphthalene	91-57-6	2	µg/L		<4	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Landfill Leachate	----	----	----	----
				Sampling date / time	22-Jun-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2111910-011	--------	--------	--------	--------
					Result	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued									
2-Chloronaphthalene	91-58-7	2	µg/L		<4	----	----	----	----
Acenaphthylene	208-96-8	2	µg/L		<4	----	----	----	----
Acenaphthene	83-32-9	2	µg/L		<4	----	----	----	----
Fluorene	86-73-7	2	µg/L		<4	----	----	----	----
Phenanthrene	85-01-8	2	µg/L		<4	----	----	----	----
Anthracene	120-12-7	2	µg/L		<4	----	----	----	----
Fluoranthene	206-44-0	2	µg/L		<4	----	----	----	----
Pyrene	129-00-0	2	µg/L		<4	----	----	----	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L		<4	----	----	----	----
Benz(a)anthracene	56-55-3	2	µg/L		<4	----	----	----	----
Chrysene	218-01-9	2	µg/L		<4	----	----	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L		<8	----	----	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L		<4	----	----	----	----
Benzo(a)pyrene	50-32-8	2	µg/L		<4	----	----	----	----
3-Methylcholanthrene	56-49-5	2	µg/L		<4	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L		<4	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L		<4	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L		<4	----	----	----	----
^ Sum of PAHs	----	2	µg/L		<5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L		<5	----	----	----	----
EP075C: Phthalate Esters									
Dimethyl phthalate	131-11-3	2	µg/L		<4	----	----	----	----
Diethyl phthalate	84-66-2	2	µg/L		<4	----	----	----	----
Di-n-butyl phthalate	84-74-2	2	µg/L		<4	----	----	----	----
Butyl benzyl phthalate	85-68-7	2	µg/L		<4	----	----	----	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L		<10	----	----	----	----
Di-n-octylphthalate	117-84-0	2	µg/L		<4	----	----	----	----
EP075D: Nitrosamines									
N-Nitrosomethylethylamine	10595-95-6	2	µg/L		<4	----	----	----	----
N-Nitrosodiethylamine	55-18-5	2	µg/L		<4	----	----	----	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L		<4	----	----	----	----
N-Nitrosomorpholine	59-89-2	2	µg/L		<4	----	----	----	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L		<4	----	----	----	----
N-Nitrosopiperidine	100-75-4	2	µg/L		<4	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Landfill Leachate	----	----	----	----
				Sampling date / time	22-Jun-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2111910-011	--------	--------	--------	--------
					Result	----	----	----	----
EP075D: Nitrosamines - Continued									
N-Nitrosodibutylamine	924-16-3	2	µg/L		<4	----	----	----	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L		<4	----	----	----	----
Methapyrilene	91-80-5	2	µg/L		<4	----	----	----	----
EP075E: Nitroaromatics and Ketones									
2-Picoline	109-06-8	2	µg/L		<4	----	----	----	----
Acetophenone	98-86-2	2	µg/L		<4	----	----	----	----
Nitrobenzene	98-95-3	2	µg/L		<4	----	----	----	----
Isophorone	78-59-1	2	µg/L		<4	----	----	----	----
2.6-Dinitrotoluene	606-20-2	4	µg/L		<4	----	----	----	----
2.4-Dinitrotoluene	121-14-2	4	µg/L		<4	----	----	----	----
1-Naphthylamine	134-32-7	2	µg/L		<4	----	----	----	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L		<4	----	----	----	----
5-Nitro-o-toluidine	99-55-8	2	µg/L		<4	----	----	----	----
Azobenzene	103-33-3	2	µg/L		<4	----	----	----	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L		<4	----	----	----	----
Phenacetin	62-44-2	2	µg/L		<4	----	----	----	----
4-Aminobiphenyl	92-67-1	2	µg/L		<4	----	----	----	----
Pentachloronitrobenzene	82-68-8	2	µg/L		<4	----	----	----	----
Pronamide	23950-58-5	2	µg/L		<4	----	----	----	----
Dimethylaminoazobenzene	60-11-7	2	µg/L		<4	----	----	----	----
Chlorobenzilate	510-15-6	2	µg/L		<4	----	----	----	----
EP075F: Haloethers									
Bis(2-chloroethyl) ether	111-44-4	2	µg/L		<4	----	----	----	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L		<4	----	----	----	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L		<4	----	----	----	----
4-Bromophenyl phenyl ether	101-55-3	2	µg/L		<4	----	----	----	----
EP075G: Chlorinated Hydrocarbons									
1.3-Dichlorobenzene	541-73-1	2	µg/L		<4	----	----	----	----
1.4-Dichlorobenzene	106-46-7	2	µg/L		<4	----	----	----	----
1.2-Dichlorobenzene	95-50-1	2	µg/L		<4	----	----	----	----
Hexachloroethane	67-72-1	2	µg/L		<4	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L		<4	----	----	----	----
Hexachloropropylene	1888-71-7	2	µg/L		<4	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Landfill Leachate	----	----	----	----
				Sampling date / time	22-Jun-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2111910-011	--------	--------	--------	--------
					Result	----	----	----	----
EP075G: Chlorinated Hydrocarbons - Continued									
Hexachlorobutadiene	87-68-3	2	µg/L		<4	----	----	----	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L		<10	----	----	----	----
Pentachlorobenzene	608-93-5	2	µg/L		<4	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L		<4	----	----	----	----
EP075H: Anilines and Benzidines									
Aniline	62-53-3	2	µg/L		**6**	----	----	----	----
4-Chloroaniline	106-47-8	2	µg/L		<4	----	----	----	----
2-Nitroaniline	88-74-4	4	µg/L		<4	----	----	----	----
3-Nitroaniline	99-09-2	4	µg/L		<4	----	----	----	----
Dibenzofuran	132-64-9	2	µg/L		<4	----	----	----	----
4-Nitroaniline	100-01-6	2	µg/L		<4	----	----	----	----
Carbazole	86-74-8	2	µg/L		<4	----	----	----	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L		<4	----	----	----	----
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	2	µg/L		<4	----	----	----	----
beta-BHC	319-85-7	2	µg/L		<4	----	----	----	----
gamma-BHC	58-89-9	2	µg/L		<4	----	----	----	----
delta-BHC	319-86-8	2	µg/L		<4	----	----	----	----
Heptachlor	76-44-8	2	µg/L		<4	----	----	----	----
Aldrin	309-00-2	2	µg/L		<4	----	----	----	----
Heptachlor epoxide	1024-57-3	2	µg/L		<4	----	----	----	----
alpha-Endosulfan	959-98-8	2	µg/L		<4	----	----	----	----
4.4`-DDE	72-55-9	2	µg/L		<4	----	----	----	----
Dieldrin	60-57-1	2	µg/L		<4	----	----	----	----
Endrin	72-20-8	2	µg/L		<4	----	----	----	----
beta-Endosulfan	33213-65-9	2	µg/L		<4	----	----	----	----
4.4`-DDD	72-54-8	2	µg/L		<4	----	----	----	----
Endosulfan sulfate	1031-07-8	2	µg/L		<4	----	----	----	----
4.4`-DDT	50-29-3	4	µg/L		<4	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L		<5	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L		<5	----	----	----	----
EP075J: Organophosphorus Pesticides									
Dichlorvos	62-73-7	2	µg/L		<4	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Landfill Leachate	----	----	----	----
				Sampling date / time	22-Jun-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2111910-011	--------	--------	--------	--------
					Result	----	----	----	----
EP075J: Organophosphorus Pesticides - Continued									
Dimethoate	60-51-5	2	µg/L		<4	----	----	----	----
Diazinon	333-41-5	2	µg/L		<4	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L		<4	----	----	----	----
Malathion	121-75-5	2	µg/L		<4	----	----	----	----
Fenthion	55-38-9	2	µg/L		<4	----	----	----	----
Chlorpyrifos	2921-88-2	2	µg/L		<4	----	----	----	----
Pirimphos-ethyl	23505-41-1	2	µg/L		<4	----	----	----	----
Chlorfenvinphos	470-90-6	2	µg/L		<4	----	----	----	----
Prothiofos	34643-46-4	2	µg/L		<4	----	----	----	----
Ethion	563-12-2	2	µg/L		<4	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		**50**	----	----	----	----
C10 - C14 Fraction	----	50	µg/L		**560**	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		**1670**	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		**140**	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		**2370**	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		**30**	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		**20**	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		**730**	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		**1530**	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		**2260**	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		**730**	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		**6**	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		**3**	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ **Total Xylenes**	----	2	µg/L		**3**	----	----	----	----
^ **Sum of BTEX**	----	1	µg/L		**9**	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Landfill Leachate	----	----	----	----
				Sampling date / time	22-Jun-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2111910-011	--------	--------	--------	--------
					Result	----	----	----	----
EP080: BTEXN - Continued									
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
4-Chlorophenoxy acetic acid	122-88-3	10	µg/L		<10	----	----	----	----
2.4-DB	94-82-6	10	µg/L		<10	----	----	----	----
Dicamba	1918-00-9	10	µg/L		<10	----	----	----	----
Mecoprop	93-65-2	10	µg/L		<10	----	----	----	----
MCPA	94-74-6	10	µg/L		<10	----	----	----	----
2.4-DP	120-36-5	10	µg/L		<10	----	----	----	----
2.4-D	94-75-7	10	µg/L		<10	----	----	----	----
Triclopyr	55335-06-3	10	µg/L		<10	----	----	----	----
Silvex (2.4.5-TP/Fenoprop)	93-72-1	10	µg/L		<10	----	----	----	----
2.4.5-T	93-76-5	10	µg/L		<10	----	----	----	----
MCPB	94-81-5	10	µg/L		<10	----	----	----	----
Picloram	1918-02-1	10	µg/L		<10	----	----	----	----
Clopyralid	1702-17-6	10	µg/L		<10	----	----	----	----
Fluroxypyr	69377-81-7	10	µg/L		<10	----	----	----	----
2.6-D	575-90-6	10	µg/L		<10	----	----	----	----
2.4.6-T	575-89-3	10	µg/L		<10	----	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	1	%		68.5	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%		80.9	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%		109	----	----	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		112	----	----	----	----
Toluene-D8	2037-26-5	5	%		119	----	----	----	----
4-Bromofluorobenzene	460-00-4	5	%		118	----	----	----	----
EP075S: Acid Extractable Surrogates									
2-Fluorophenol	367-12-4	2	%		24.0	----	----	----	----
Phenol-d6	13127-88-3	2	%		18.9	----	----	----	----
2-Chlorophenol-D4	93951-73-6	2	%		54.5	----	----	----	----
2.4.6-Tribromophenol	118-79-6	2	%		63.0	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates									
Nitrobenzene-D5	4165-60-0	2	%		72.2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Landfill Leachate	----	----	----	----
				Sampling date / time	22-Jun-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2111910-011	--------	--------	--------	--------
					Result	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates - Continued									
1.2-Dichlorobenzene-D4	2199-69-1	2	%		**54.6**	----	----	----	----
2-Fluorobiphenyl	321-60-8	2	%		**63.3**	----	----	----	----
Anthracene-d10	1719-06-8	2	%		**70.5**	----	----	----	----
4-Terphenyl-d14	1718-51-0	2	%		**79.3**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**112**	----	----	----	----
Toluene-D8	2037-26-5	2	%		**119**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**118**	----	----	----	----
EP202S: Phenoxyacetic Acid Herbicide Surrogate									
2.4-Dichlorophenyl Acetic Acid	19719-28-9	10	%		**103**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	125
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	117
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	51	127
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	132
Toluene-D8	2037-26-5	77	132
4-Bromofluorobenzene	460-00-4	67	131
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	6	83
Phenol-d6	13127-88-3	10	65
2-Chlorophenol-D4	93951-73-6	22	112
2.4.6-Tribromophenol	118-79-6	22	125
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	37	115
1.2-Dichlorobenzene-D4	2199-69-1	32	99
2-Fluorobiphenyl	321-60-8	39	116
Anthracene-d10	1719-06-8	49	123
4-Terphenyl-d14	1718-51-0	47	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129
EP202S: Phenoxyacetic Acid Herbicide Surrogate			
2.4-Dichlorophenyl Acetic Acid	19719-28-9	64	140

Inter-Laboratory Testing

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry) 14913 (Biology).

(WATER) EP020: Oil and Grease (O&G)

(WATER) EP050: Anionic Surfactants as MBAS

(WATER) EP202A: Phenoxyacetic Acid Herbicides by LCMS

(WATER) EP202S: Phenoxyacetic Acid Herbicide Surrogate

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2119193**	Page	: 1 of 24
Amendment	: **2**		
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: SAMANTHA KING	Contact	: Peter Ravlic
Address	: LEVEL 8, 180 LONSDALE ST MELBOURNE VIC, AUSTRALIA 3001	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9645
Project	: Dulverton December 2020	Date Samples Received	: 29-Sep-2021 13:00
Order number	: 3219202	Date Analysis Commenced	: 29-Sep-2021
C-O-C number	: 28078	Issue Date	: 13-Oct-2021 16:17
Sampler	: SAMANTHA KING		
Site	: Dulverton Landfill		
Quote number	: ME/071/19		
No. of samples received	: 12		
No. of samples analysed	: 12		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Jarwis Nheu	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- ED037-P: EM2119193 #4. Insufficient sample provided to confirm the alkalinity results
- EP010: Sample diluted due to dark sample matrix. LOR has been adjusted
- EA010-P: Electrical Conductivity @ 25°C was analysed by manual method (EA010).
- EP075: Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- It is recognised that total metals is less than dissolved metals for samples #5, #6 and #7. However, the difference is within experimental variation of the methods.
- It is recognised that TP is less than reactive-P for sample #3. However, the difference is within experimental variation of the methods.
- EG020-F : EM2119193 #5 dissolved metal required dilution prior analysis due to sample matrix. LORs have been adjusted accordingly.
- EG020-T : EM2119193 #5 total metal required dilution prior analysis due to sample matrix. LORs have been adjusted accordingly.
- EA015H: EM2119193 #9: TDS by method EA-015 may bias high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- ALS is not NATA accredited for the analysis of EK055G-NH4:Ammonium as N.
- EP068/075: Particular sample EM2119193_005 required dilution prior to analysis due to matrix interferences. LOR values have been adjusted accordingly.
- Ionic Balance out of acceptable limits for sample #6-7 , #11 and #12 due to analytes not quantified in this report.
- EP002:EM2119193 #2 Insufficient sample has been provided for dissolved organic carbon analysis. Where applicable LOR values have been adjusted accordingly.
- EG035T:EM2119193 #2 & #5 Particular samples required dilution prior to extraction due to matrix interferences. LOR values have been adjusted accordingly.
- EP030: The DO depletion for samples EM2119193 #1, #2, #4 and #6 to #12 is less than 2mg/L, this indicates that the samples have been over diluted and the BOD is less than 10mg/L. The BOD results reported were estimated from the lowest dilution.
- Amendment (11/10/21):This report has been amended to report TPH-SG: EP071-SVSG on sample 3
- Amendment (12/10/21):This report has been amended to report dissolved and total metals - EG020F & EG020T and CN - EK026SF on sample 3
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium, sodium and ammonia for sample #5.

- EP068: EM211993_005 Poor surrogate recovery for (DEF) due to sample matrix effects.
- EP075: Where reported, 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- MBAS (EP050) is calculated as LAS, molecular weight 348 g/mol.

Analytical Results

Sub-Matrix: **GROUNDWATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	B8	B9	B6	B14	B7
				Sampling date / time	27-Sep-2021 15:02	28-Sep-2021 15:38	28-Sep-2021 10:36	28-Sep-2021 11:14	28-Sep-2021 12:22
					EM2119193-002	EM2119193-004	EM2119193-007	EM2119193-009	EM2119193-011
					Result	Result	Result	Result	Result
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		**436**	**198**	**258**	**2230**	**335**
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		**276**	**124**	**176**	**296**	**198**
Total Alkalinity as CaCO3	----	1	mg/L		**276**	**124**	**176**	**296**	**198**
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		**4**	**14**	**7**	**44**	**5**
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		**52**	**20**	**30**	**99**	**16**
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		**100**	**51**	**42**	**119**	**84**
Magnesium	7439-95-4	1	mg/L		**5**	**3**	**13**	**10**	**4**
Sodium	7440-23-5	1	mg/L		**25**	**10**	**18**	**62**	**11**
Potassium	7440-09-7	1	mg/L		**3**	<1	**2**	**7**	<1
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	**0.002**	**0.002**	<0.001
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L		**0.043**	**0.001**	**0.070**	**0.010**	**0.002**
Nickel	7440-02-0	0.001	mg/L		**0.002**	<0.001	<0.001	**0.001**	<0.001
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	**0.012**	<0.005	<0.005
Iron	7439-89-6	0.05	mg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EG020T: Total Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		**0.004**	**0.001**	**0.001**	**0.006**	<0.001
Cadmium	7440-43-9	0.0001	mg/L		**0.0013**	**0.0002**	<0.0001	**0.0007**	<0.0001
Chromium	7440-47-3	0.001	mg/L		**0.032**	**0.011**	**0.002**	**0.129**	<0.001
Copper	7440-50-8	0.001	mg/L		**0.024**	**0.006**	**0.024**	**0.147**	<0.001
Lead	7439-92-1	0.001	mg/L		**0.045**	**0.008**	**0.005**	**0.114**	<0.001
Manganese	7439-96-5	0.001	mg/L		**0.308**	**0.992**	**0.136**	**0.461**	**0.006**
Nickel	7440-02-0	0.001	mg/L		**0.178**	**0.054**	<0.001	**0.092**	<0.001
Selenium	7782-49-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	B8	B9	B6	B14	B7
				Sampling date / time	27-Sep-2021 15:02	28-Sep-2021 15:38	28-Sep-2021 10:36	28-Sep-2021 11:14	28-Sep-2021 12:22
Compound	CAS Number	LOR	Unit		EM2119193-002	EM2119193-004	EM2119193-007	EM2119193-009	EM2119193-011
					Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued									
Zinc	7440-66-6	0.005	mg/L		**0.247**	**0.054**	**0.010**	**0.276**	<0.005
Iron	7439-89-6	0.05	mg/L		**16.2**	**5.99**	**13.8**	**37.4**	**0.14**
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0005	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		<0.01	**0.27**	**0.19**	**0.45**	**0.18**
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**3.17**	**0.26**	<0.01	<0.01	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**3.17**	**0.26**	<0.01	<0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**0.3**	**0.3**	**0.2**	**1.1**	**0.1**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		**3.5**	**0.6**	**0.2**	**1.1**	**0.1**
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.22**	<0.01	<0.01	**0.21**	<0.01
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	**0.15**	<0.01	<0.01	<0.01
EN055: Ionic Balance									
ø Total Anions	----	0.01	meq/L		**7.06**	**3.33**	**4.51**	**9.62**	**4.51**
ø Total Cations	----	0.01	meq/L		**6.56**	**3.23**	**4.00**	**9.64**	**5.00**
ø Ionic Balance	----	0.01	%		**3.66**	**1.62**	**5.98**	**0.07**	**5.13**
EP002: Dissolved Organic Carbon (DOC)									
Dissolved Organic Carbon	----	1	mg/L		<10	**10**	<1	**5**	<1
EP030: Biochemical Oxygen Demand (BOD)									
Biochemical Oxygen Demand	----	2	mg/L		<10	<10	<10	<10	<10
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	<50	<50

Analytical Results

Sub-Matrix: GROUNDWATER (Matrix: WATER)				Sample ID	B8	B9	B6	B14	B7
				Sampling date / time	27-Sep-2021 15:02	28-Sep-2021 15:38	28-Sep-2021 10:36	28-Sep-2021 11:14	28-Sep-2021 12:22
Compound	CAS Number	LOR	Unit		EM2119193-002	EM2119193-004	EM2119193-007	EM2119193-009	EM2119193-011
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C15 - C28 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	<100	<100
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L		<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**120**	**119**	**124**	**119**	**122**
Toluene-D8	2037-26-5	2	%		**97.8**	**94.4**	**97.8**	**94.5**	**96.5**
4-Bromofluorobenzene	460-00-4	2	%		**99.6**	**95.0**	**94.7**	**91.8**	**95.8**

Analytical Results

Sub-Matrix: **SURFACE WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	S9	Compost leachate	S4	S6	SP3
				Sampling date / time	27-Sep-2021 14:17	27-Sep-2021 15:30	28-Sep-2021 10:04	28-Sep-2021 11:13	28-Sep-2021 11:58
					EM2119193-001	EM2119193-003	EM2119193-006	EM2119193-008	EM2119193-010
					Result	Result	Result	Result	Result
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		**8.27**	----	**8.27**	**8.20**	**8.16**
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		**586**	----	**609**	**525**	**746**
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	5	mg/L		<5	----	<5	<5	<5
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	----	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	----	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		**171**	----	**190**	**186**	**204**
Total Alkalinity as CaCO3	----	1	mg/L		**171**	----	**190**	**186**	**204**
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		**37**	----	**38**	**38**	**57**
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		**23**	----	**27**	**23**	**49**
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		**73**	----	**71**	**74**	**31**
Magnesium	7439-95-4	1	mg/L		**5**	----	**5**	**6**	**14**
Sodium	7440-23-5	1	mg/L		**13**	----	**14**	**14**	**55**
Potassium	7440-09-7	1	mg/L		**1**	----	**2**	**2**	**49**
EG020F: Dissolved Metals by ICP-MS									
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		<0.001	----	**0.002**	<0.001	**0.004**
Copper	7440-50-8	0.001	mg/L		<0.001	----	<0.001	<0.001	**0.028**
Lead	7439-92-1	0.001	mg/L		<0.001	----	<0.001	<0.001	**0.002**
Manganese	7439-96-5	0.001	mg/L		**0.004**	----	**0.002**	**0.002**	**0.034**
Nickel	7440-02-0	0.001	mg/L		<0.001	----	<0.001	<0.001	**0.010**
Zinc	7440-66-6	0.005	mg/L		<0.005	----	<0.005	<0.005	**0.037**
Iron	7439-89-6	0.05	mg/L		<0.05	----	<0.05	<0.05	**0.93**
EG020T: Total Metals by ICP-MS									
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	<0.0001	<0.0001	**0.0001**
Chromium	7440-47-3	0.001	mg/L		<0.001	----	<0.001	<0.001	**0.008**
Copper	7440-50-8	0.001	mg/L		<0.001	----	<0.001	<0.001	**0.034**
Lead	7439-92-1	0.001	mg/L		<0.001	----	<0.001	<0.001	**0.010**
Manganese	7439-96-5	0.001	mg/L		**0.009**	----	**0.006**	**0.006**	**0.120**

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	S9	Compost leachate	S4	S6	SP3
			Sampling date / time	27-Sep-2021 14:17	27-Sep-2021 15:30	28-Sep-2021 10:04	28-Sep-2021 11:13	28-Sep-2021 11:58
Compound	CAS Number	LOR	Unit	EM2119193-001	EM2119193-003	EM2119193-006	EM2119193-008	EM2119193-010
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Nickel	7440-02-0	0.001	mg/L	<0.001	----	<0.001	<0.001	**0.014**
Zinc	7440-66-6	0.005	mg/L	<0.005	----	<0.005	<0.005	**0.081**
Iron	7439-89-6	0.05	mg/L	**0.10**	----	**0.06**	**0.08**	**3.05**
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	----	<0.0001	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	<0.01	----	**1.34**	**0.19**	**1.79**
EK055G-NH4: Ammonium as N by DA								
ø Ammonium as N	14798-03-9_N	0.01	mg/L	<0.01	----	**1.32**	**0.18**	**1.77**
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	----	<0.01	<0.01	**0.21**
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**1.26**	----	**1.19**	**1.24**	**5.05**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**1.26**	----	**1.19**	**1.24**	**5.26**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**0.2**	----	**0.4**	**0.3**	**10.2**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**1.5**	----	**1.6**	**1.5**	**15.5**
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	<0.01	----	<0.01	<0.01	**2.31**
EK071FG: Dissolved Reactive Phosphorus as P by DA								
Dissolved Reactive Phosphorus as P	----	0.01	mg/L	<0.01	----	<0.01	<0.01	**1.08**
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	**4.84**	----	**5.35**	**5.16**	**6.64**
ø Total Cations	----	0.01	meq/L	**4.64**	----	**4.61**	**4.85**	**6.34**
ø Ionic Balance	----	0.01	%	**2.01**	----	**7.37**	**3.10**	**2.31**
EP030: Biochemical Oxygen Demand (BOD)								
Biochemical Oxygen Demand	----	2	mg/L	<10	----	<10	<10	<10

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)			Sample ID	S1	----	----	----	----
			Sampling date / time	28-Sep-2021 15:17	----	----	----	----
Compound	CAS Number	LOR	Unit	EM2119193-012	--------	--------	--------	--------
				Result	----	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**8.22**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**505**	----	----	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	<5	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**176**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**176**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**36**	----	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**25**	----	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**65**	----	----	----	----
Magnesium	7439-95-4	1	mg/L	**6**	----	----	----	----
Sodium	7440-23-5	1	mg/L	**14**	----	----	----	----
Potassium	7440-09-7	1	mg/L	**2**	----	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	**0.002**	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	----	----	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	----	----	----	----
EG020T: Total Metals by ICP-MS								
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	**0.015**	----	----	----	----

Analytical Results

Sub-Matrix: SURFACE WATER (Matrix: WATER)				Sample ID	S1	----	----	----	----
				Sampling date / time	28-Sep-2021 15:17	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2119193-012	--------	--------	--------	--------
					Result	----	----	----	----
EG020T: Total Metals by ICP-MS - Continued									
Nickel	7440-02-0	0.001	mg/L		<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	----	----	----	----
Iron	7439-89-6	0.05	mg/L		**0.17**	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.09**	----	----	----	----
EK055G-NH4: Ammonium as N by DA									
ø Ammonium as N	14798-03-9_N	0.01	mg/L		**0.09**	----	----	----	----
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	----	----	----	----
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**1.11**	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**1.11**	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**0.3**	----	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		**1.4**	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.01	----	----	----	----
EK071FG: Dissolved Reactive Phosphorus as P by DA									
Dissolved Reactive Phosphorus as P	----	0.01	mg/L		<0.01	----	----	----	----
EN055: Ionic Balance									
ø Total Anions	----	0.01	meq/L		**4.97**	----	----	----	----
ø Total Cations	----	0.01	meq/L		**4.40**	----	----	----	----
ø Ionic Balance	----	0.01	%		**6.12**	----	----	----	----
EP030: Biochemical Oxygen Demand (BOD)									
Biochemical Oxygen Demand	----	2	mg/L		<10	----	----	----	----

Analytical Results

Sub-Matrix: WASTEWATER (Matrix: WATER)			Sample ID	Compost leachate	Pomona pump	----	----	----
			Sampling date / time	27-Sep-2021 15:30	28-Sep-2021 09:44	----	----	----
Compound	CAS Number	LOR	Unit	EM2119193-003	EM2119193-005	--------	--------	--------
				Result	Result	----	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	----	122	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	1850	5720	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	1850	5720	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	10	52	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	811	3150	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	207	118	----	----	----
Magnesium	7439-95-4	1	mg/L	100	76	----	----	----
Sodium	7440-23-5	1	mg/L	486	1810	----	----	----
Potassium	7440-09-7	1	mg/L	713	1230	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	0.08	3.17	----	----	----
Arsenic	7440-38-2	0.001	mg/L	0.014	0.175	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0010	----	----	----
Chromium	7440-47-3	0.001	mg/L	0.008	1.01	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	0.022	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.010	----	----	----
Manganese	7439-96-5	0.001	mg/L	1.59	0.833	----	----	----
Nickel	7440-02-0	0.001	mg/L	0.041	0.232	----	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.10	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	0.162	----	----	----
Iron	7439-89-6	0.05	mg/L	5.73	9.27	----	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	8.74	4.17	----	----	----
Arsenic	7440-38-2	0.001	mg/L	0.040	0.214	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	0.0004	<0.0010	----	----	----
Chromium	7440-47-3	0.001	mg/L	0.040	1.11	----	----	----
Copper	7440-50-8	0.001	mg/L	0.059	0.142	----	----	----
Lead	7439-92-1	0.001	mg/L	0.035	0.030	----	----	----

Analytical Results

Sub-Matrix: WASTEWATER (Matrix: WATER)			Sample ID	Compost leachate	Pomona pump	----	----	----
			Sampling date / time	27-Sep-2021 15:30	28-Sep-2021 09:44	----	----	----
Compound	CAS Number	LOR	Unit	EM2119193-003	EM2119193-005	--------	--------	--------
				Result	Result	----	----	----
EG020T: Total Metals by ICP-MS - Continued								
Manganese	7439-96-5	0.001	mg/L	**2.97**	**0.817**	----	----	----
Nickel	7440-02-0	0.001	mg/L	**0.084**	**0.241**	----	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.10	----	----	----
Zinc	7440-66-6	0.005	mg/L	**0.502**	**0.458**	----	----	----
Iron	7439-89-6	0.05	mg/L	**34.2**	**13.0**	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	----	<0.0001	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0010	----	----	----
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	0.004	mg/L	<0.004	<0.020	----	----	----
EK055: Ammonia as N								
Ammonia as N	7664-41-7	0.1	mg/L	**237**	**1860**	----	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.05	<0.05	----	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	<0.05	**0.41**	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	**0.41**	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**354**	**2370**	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**354**	**2370**	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**183**	**22.1**	----	----	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	**188**	**25.0**	----	----	----
EN055: Ionic Balance								
ø Total Anions	----	0.01	meq/L	**60.0**	**204**	----	----	----
ø Total Cations	----	0.01	meq/L	----	**227**	----	----	----
ø Total Cations	----	0.01	meq/L	**57.9**	----	----	----	----
ø Ionic Balance	----	0.01	%	----	**5.27**	----	----	----
ø Ionic Balance	----	0.01	%	**1.79**	----	----	----	----

Analytical Results

Sub-Matrix: WASTEWATER (Matrix: WATER)			Sample ID	Compost leachate	Pomona pump	----	----	----
			Sampling date / time	27-Sep-2021 15:30	28-Sep-2021 09:44	----	----	----
Compound	CAS Number	LOR	Unit	EM2119193-003	EM2119193-005	--------	--------	--------
				Result	Result	----	----	----
EP002: Dissolved Organic Carbon (DOC)								
Dissolved Organic Carbon	----	1	mg/L	----	**209**	----	----	----
EP010: Formaldehyde								
Formaldehyde	50-00-0	0.1	mg/L	----	<1.0	----	----	----
EP030: Biochemical Oxygen Demand (BOD)								
Biochemical Oxygen Demand	----	2	mg/L	----	**508**	----	----	----
EP050: Anionic Surfactants as MBAS								
Anionic Surfactants as MBAS	----	0.1	mg/L	----	**4.3**	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
^ **Total Polychlorinated biphenyls**	----	1	µg/L	----	<1	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	----	<0.7	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	----	<0.7	----	----	----
beta-BHC	319-85-7	0.5	µg/L	----	<0.7	----	----	----
gamma-BHC	58-89-9	0.5	µg/L	----	<0.7	----	----	----
delta-BHC	319-86-8	0.5	µg/L	----	<0.7	----	----	----
Heptachlor	76-44-8	0.5	µg/L	----	<0.7	----	----	----
Aldrin	309-00-2	0.5	µg/L	----	<0.7	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	----	<0.7	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	----	<0.7	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	----	<0.7	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	----	<0.7	----	----	----
Dieldrin	60-57-1	0.5	µg/L	----	<0.7	----	----	----
4.4`-DDE	72-55-9	0.5	µg/L	----	<0.7	----	----	----
Endrin	72-20-8	0.5	µg/L	----	<0.7	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	----	<0.7	----	----	----
4.4`-DDD	72-54-8	0.5	µg/L	----	<0.7	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	----	<0.7	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	----	<0.7	----	----	----
4.4`-DDT	50-29-3	2.0	µg/L	----	<2.0	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L	----	<0.7	----	----	----
Methoxychlor	72-43-5	2.0	µg/L	----	<2.0	----	----	----
^ **Total Chlordane (sum)**	----	0.5	µg/L	----	<0.7	----	----	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.5	µg/L	----	<0.7	----	----	----

Analytical Results

Sub-Matrix: WASTEWATER (Matrix: WATER)			Sample ID	Compost leachate	Pomona pump	----	----	----
			Sampling date / time	27-Sep-2021 15:30	28-Sep-2021 09:44	----	----	----
Compound	CAS Number	LOR	Unit	EM2119193-003	EM2119193-005	--------	--------	--------
				Result	Result	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued								
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	----	<0.7	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	----	<0.7	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L	----	<0.7	----	----	----
Monocrotophos	6923-22-4	2.0	µg/L	----	<2.0	----	----	----
Dimethoate	60-51-5	0.5	µg/L	----	<0.7	----	----	----
Diazinon	333-41-5	0.5	µg/L	----	<0.7	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	----	<0.7	----	----	----
Parathion-methyl	298-00-0	2.0	µg/L	----	<2.0	----	----	----
Malathion	121-75-5	0.5	µg/L	----	<0.7	----	----	----
Fenthion	55-38-9	0.5	µg/L	----	<0.7	----	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L	----	<0.7	----	----	----
Parathion	56-38-2	2.0	µg/L	----	<2.0	----	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L	----	<0.7	----	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L	----	<0.7	----	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	----	<0.7	----	----	----
Fenamiphos	22224-92-6	0.5	µg/L	----	<0.7	----	----	----
Prothiofos	34643-46-4	0.5	µg/L	----	<0.7	----	----	----
Ethion	563-12-2	0.5	µg/L	----	<0.7	----	----	----
Carbophenothion	786-19-6	0.5	µg/L	----	<0.7	----	----	----
Azinphos Methyl	86-50-0	0.5	µg/L	----	<0.7	----	----	----
EP071 SG: Total Petroleum Hydrocarbons - Silica gel cleanup								
C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----
EP071 SG: Total Petroleum Hydrocarbons - SV Silica gel cleanup								
C10 - C14 Fraction	----	50	µg/L	<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----
EP071 SG: Total Recoverable Hydrocarbons - SV NEPM 2013 Fractions - Silica gel cleanup								
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----
EP074B: Oxygenated Compounds								

Analytical Results

Sub-Matrix: WASTEWATER (Matrix: WATER)			Sample ID	Compost leachate	Pomona pump	----	----	----
			Sampling date / time	27-Sep-2021 15:30	28-Sep-2021 09:44	----	----	----
Compound	CAS Number	LOR	Unit	EM2119193-003	EM2119193-005	--------	--------	--------
				Result	Result	----	----	----
EP074B: Oxygenated Compounds - Continued								
2-Propanone (Acetone)	67-64-1	50	µg/L	----	100	----	----	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	----	<5	----	----	----
1.2-Dichloropropane	78-87-5	5	µg/L	----	<5	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	----	<5	----	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	----	<5	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	----	<5	----	----	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	----	<50	----	----	----
Chloromethane	74-87-3	50	µg/L	----	<50	----	----	----
Vinyl chloride	75-01-4	50	µg/L	----	<50	----	----	----
Bromomethane	74-83-9	50	µg/L	----	<50	----	----	----
Chloroethane	75-00-3	50	µg/L	----	<50	----	----	----
Trichlorofluoromethane	75-69-4	50	µg/L	----	<50	----	----	----
1.1-Dichloroethene	75-35-4	5	µg/L	----	<5	----	----	----
Iodomethane	74-88-4	5	µg/L	----	<5	----	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	----	<5	----	----	----
1.1-Dichloroethane	75-34-3	5	µg/L	----	<5	----	----	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L	----	<5	----	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	----	<5	----	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L	----	<5	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L	----	<5	----	----	----
1.2-Dichloroethane	107-06-2	5	µg/L	----	<5	----	----	----
Trichloroethene	79-01-6	5	µg/L	----	<5	----	----	----
Dibromomethane	74-95-3	5	µg/L	----	<5	----	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	----	<5	----	----	----
1.3-Dichloropropane	142-28-9	5	µg/L	----	<5	----	----	----
Tetrachloroethene	127-18-4	5	µg/L	----	<5	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	----	<5	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	----	<5	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	----	<5	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	----	<5	----	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L	----	<5	----	----	----
Pentachloroethane	76-01-7	5	µg/L	----	<5	----	----	----

Analytical Results

Sub-Matrix: WASTEWATER (Matrix: WATER)				Sample ID	Compost leachate	Pomona pump	----	----	----
				Sampling date / time	27-Sep-2021 15:30	28-Sep-2021 09:44	----	----	----
Compound	CAS Number	LOR	Unit		EM2119193-003	EM2119193-005	--------	--------	--------
					Result	Result	----	----	----
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		----	<5	----	----	----
Hexachlorobutadiene	87-68-3	5	µg/L		----	<5	----	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		----	<5	----	----	----
Bromobenzene	108-86-1	5	µg/L		----	<5	----	----	----
2-Chlorotoluene	95-49-8	5	µg/L		----	<5	----	----	----
4-Chlorotoluene	106-43-4	5	µg/L		----	<5	----	----	----
1.3-Dichlorobenzene	541-73-1	5	µg/L		----	<5	----	----	----
1.4-Dichlorobenzene	106-46-7	5	µg/L		----	<5	----	----	----
1.2-Dichlorobenzene	95-50-1	5	µg/L		----	<5	----	----	----
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		----	<5	----	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		----	<5	----	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		----	<5	----	----	----
Bromodichloromethane	75-27-4	5	µg/L		----	<5	----	----	----
Dibromochloromethane	124-48-1	5	µg/L		----	<5	----	----	----
Bromoform	75-25-2	5	µg/L		----	<5	----	----	----
EP075A: Phenolic Compounds									
Phenol	108-95-2	2	µg/L		----	**50**	----	----	----
2-Chlorophenol	95-57-8	2	µg/L		----	<7	----	----	----
2-Methylphenol	95-48-7	2	µg/L		----	**71**	----	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L		----	**121**	----	----	----
2-Nitrophenol	88-75-5	2	µg/L		----	<7	----	----	----
2.4-Dimethylphenol	105-67-9	2	µg/L		----	<7	----	----	----
2.4-Dichlorophenol	120-83-2	2	µg/L		----	<7	----	----	----
2.6-Dichlorophenol	87-65-0	2	µg/L		----	<7	----	----	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L		----	<7	----	----	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L		----	<7	----	----	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L		----	<7	----	----	----
Pentachlorophenol	87-86-5	4	µg/L		----	<7	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	2	µg/L		----	<7	----	----	----
2-Methylnaphthalene	91-57-6	2	µg/L		----	<7	----	----	----
2-Chloronaphthalene	91-58-7	2	µg/L		----	<7	----	----	----

Analytical Results

Sub-Matrix: WASTEWATER (Matrix: WATER)				Sample ID	Compost leachate	Pomona pump	----	----	----
				Sampling date / time	27-Sep-2021 15:30	28-Sep-2021 09:44	----	----	----
Compound	CAS Number	LOR	Unit		EM2119193-003	EM2119193-005	--------	--------	--------
					Result	Result	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued									
Acenaphthylene	208-96-8	2	µg/L		----	<7	----	----	----
Acenaphthene	83-32-9	2	µg/L		----	<7	----	----	----
Fluorene	86-73-7	2	µg/L		----	<7	----	----	----
Phenanthrene	85-01-8	2	µg/L		----	<7	----	----	----
Anthracene	120-12-7	2	µg/L		----	<7	----	----	----
Fluoranthene	206-44-0	2	µg/L		----	<7	----	----	----
Pyrene	129-00-0	2	µg/L		----	<7	----	----	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L		----	<7	----	----	----
Benz(a)anthracene	56-55-3	2	µg/L		----	<7	----	----	----
Chrysene	218-01-9	2	µg/L		----	<7	----	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L		----	<15	----	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L		----	<7	----	----	----
Benzo(a)pyrene	50-32-8	2	µg/L		----	<7	----	----	----
3-Methylcholanthrene	56-49-5	2	µg/L		----	<7	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L		----	<7	----	----	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L		----	<7	----	----	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L		----	<7	----	----	----
^ Sum of PAHs	----	2	µg/L		----	<9	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L		----	<9	----	----	----
EP075C: Phthalate Esters									
Dimethyl phthalate	131-11-3	2	µg/L		----	<7	----	----	----
Diethyl phthalate	84-66-2	2	µg/L		----	<7	----	----	----
Di-n-butyl phthalate	84-74-2	2	µg/L		----	<7	----	----	----
Butyl benzyl phthalate	85-68-7	2	µg/L		----	<7	----	----	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L		----	<10	----	----	----
Di-n-octylphthalate	117-84-0	2	µg/L		----	<7	----	----	----
EP075D: Nitrosamines									
N-Nitrosomethylethylamine	10595-95-6	2	µg/L		----	<7	----	----	----
N-Nitrosodiethylamine	55-18-5	2	µg/L		----	<7	----	----	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L		----	<7	----	----	----
N-Nitrosomorpholine	59-89-2	2	µg/L		----	<7	----	----	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L		----	<7	----	----	----
N-Nitrosopiperidine	100-75-4	2	µg/L		----	<7	----	----	----
N-Nitrosodibutylamine	924-16-3	2	µg/L		----	<7	----	----	----

Analytical Results

Sub-Matrix: WASTEWATER (Matrix: WATER)			Sample ID	Compost leachate	Pomona pump	----	----	----
			Sampling date / time	27-Sep-2021 15:30	28-Sep-2021 09:44	----	----	----
Compound	CAS Number	LOR	Unit	EM2119193-003	EM2119193-005	--------	--------	--------
				Result	Result	----	----	----
EP075D: Nitrosamines - Continued								
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	----	<7	----	----	----
Methapyrilene	91-80-5	2	µg/L	----	<7	----	----	----
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	----	13	----	----	----
Acetophenone	98-86-2	2	µg/L	----	<7	----	----	----
Nitrobenzene	98-95-3	2	µg/L	----	<7	----	----	----
Isophorone	78-59-1	2	µg/L	----	<7	----	----	----
2.6-Dinitrotoluene	606-20-2	4	µg/L	----	<7	----	----	----
2.4-Dinitrotoluene	121-14-2	4	µg/L	----	<7	----	----	----
1-Naphthylamine	134-32-7	2	µg/L	----	<7	----	----	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	----	<7	----	----	----
5-Nitro-o-toluidine	99-55-8	2	µg/L	----	<7	----	----	----
Azobenzene	103-33-3	2	µg/L	----	<7	----	----	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	----	<7	----	----	----
Phenacetin	62-44-2	2	µg/L	----	<7	----	----	----
4-Aminobiphenyl	92-67-1	2	µg/L	----	<7	----	----	----
Pentachloronitrobenzene	82-68-8	2	µg/L	----	<7	----	----	----
Pronamide	23950-58-5	2	µg/L	----	<7	----	----	----
Dimethylaminoazobenzene	60-11-7	2	µg/L	----	<7	----	----	----
Chlorobenzilate	510-15-6	2	µg/L	----	<7	----	----	----
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	----	<7	----	----	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	----	<7	----	----	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	----	<7	----	----	----
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	----	<7	----	----	----
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	----	<7	----	----	----
1.4-Dichlorobenzene	106-46-7	2	µg/L	----	<7	----	----	----
1.2-Dichlorobenzene	95-50-1	2	µg/L	----	<7	----	----	----
Hexachloroethane	67-72-1	2	µg/L	----	<7	----	----	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	----	<7	----	----	----
Hexachloropropylene	1888-71-7	2	µg/L	----	<7	----	----	----
Hexachlorobutadiene	87-68-3	2	µg/L	----	<7	----	----	----

Analytical Results

Sub-Matrix: WASTEWATER (Matrix: WATER)				Sample ID	Compost leachate	Pomona pump	----	----	----
				Sampling date / time	27-Sep-2021 15:30	28-Sep-2021 09:44	----	----	----
Compound	CAS Number	LOR	Unit		EM2119193-003	EM2119193-005	--------	--------	--------
					Result	Result	----	----	----
EP075G: Chlorinated Hydrocarbons - Continued									
Hexachlorocyclopentadiene	77-47-4	10	µg/L		----	<10	----	----	----
Pentachlorobenzene	608-93-5	2	µg/L		----	<7	----	----	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L		----	<7	----	----	----
EP075H: Anilines and Benzidines									
Aniline	62-53-3	2	µg/L		----	**90**	----	----	----
4-Chloroaniline	106-47-8	2	µg/L		----	<7	----	----	----
2-Nitroaniline	88-74-4	4	µg/L		----	<7	----	----	----
3-Nitroaniline	99-09-2	4	µg/L		----	<7	----	----	----
Dibenzofuran	132-64-9	2	µg/L		----	<7	----	----	----
4-Nitroaniline	100-01-6	2	µg/L		----	<7	----	----	----
Carbazole	86-74-8	2	µg/L		----	<7	----	----	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L		----	<7	----	----	----
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	2	µg/L		----	<7	----	----	----
beta-BHC	319-85-7	2	µg/L		----	<7	----	----	----
gamma-BHC	58-89-9	2	µg/L		----	<7	----	----	----
delta-BHC	319-86-8	2	µg/L		----	<7	----	----	----
Heptachlor	76-44-8	2	µg/L		----	<7	----	----	----
Aldrin	309-00-2	2	µg/L		----	<7	----	----	----
Heptachlor epoxide	1024-57-3	2	µg/L		----	<7	----	----	----
alpha-Endosulfan	959-98-8	2	µg/L		----	<7	----	----	----
4.4`-DDE	72-55-9	2	µg/L		----	<7	----	----	----
Dieldrin	60-57-1	2	µg/L		----	<7	----	----	----
Endrin	72-20-8	2	µg/L		----	<7	----	----	----
beta-Endosulfan	33213-65-9	2	µg/L		----	<7	----	----	----
4.4`-DDD	72-54-8	2	µg/L		----	<7	----	----	----
Endosulfan sulfate	1031-07-8	2	µg/L		----	<7	----	----	----
4.4`-DDT	50-29-3	4	µg/L		----	<7	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L		----	<9	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	4	µg/L		----	<9	----	----	----
EP075J: Organophosphorus Pesticides									
Dichlorvos	62-73-7	2	µg/L		----	<7	----	----	----
Dimethoate	60-51-5	2	µg/L		----	<7	----	----	----

Analytical Results

Sub-Matrix: WASTEWATER (Matrix: WATER)				Sample ID	Compost leachate	Pomona pump	----	----	----
				Sampling date / time	27-Sep-2021 15:30	28-Sep-2021 09:44	----	----	----
Compound	CAS Number	LOR	Unit		EM2119193-003	EM2119193-005	--------	--------	--------
					Result	Result	----	----	----
EP075J: Organophosphorus Pesticides - Continued									
Diazinon	333-41-5	2	µg/L		----	<7	----	----	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L		----	<7	----	----	----
Malathion	121-75-5	2	µg/L		----	<7	----	----	----
Fenthion	55-38-9	2	µg/L		----	<7	----	----	----
Chlorpyrifos	2921-88-2	2	µg/L		----	<7	----	----	----
Pirimphos-ethyl	23505-41-1	2	µg/L		----	<7	----	----	----
Chlorfenvinphos	470-90-6	2	µg/L		----	<7	----	----	----
Prothiofos	34643-46-4	2	µg/L		----	<7	----	----	----
Ethion	563-12-2	2	µg/L		----	<7	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		**1810**	**190**	----	----	----
C10 - C14 Fraction	----	50	µg/L		**4700**	**4530**	----	----	----
C15 - C28 Fraction	----	100	µg/L		**2180**	**11000**	----	----	----
C29 - C36 Fraction	----	50	µg/L		**250**	**710**	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		**7130**	**16200**	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		**1630**	**200**	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		**580**	**180**	----	----	----
>C10 - C16 Fraction	----	100	µg/L		**5130**	**5510**	----	----	----
>C16 - C34 Fraction	----	100	µg/L		**1610**	**9830**	----	----	----
>C34 - C40 Fraction	----	100	µg/L		**120**	**360**	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		**6860**	**15700**	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		**5130**	**5510**	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	----	----	----
Toluene	108-88-3	2	µg/L		**1050**	**4**	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	**10**	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	**6**	----	----	----
^ **Total Xylenes**	----	2	µg/L		<2	**16**	----	----	----
^ **Sum of BTEX**	----	1	µg/L		**1050**	**20**	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	<5	----	----	----

Analytical Results

Sub-Matrix: WASTEWATER (Matrix: WATER)				Sample ID	Compost leachate	Pomona pump	----	----	----
				Sampling date / time	27-Sep-2021 15:30	28-Sep-2021 09:44	----	----	----
Compound	CAS Number	LOR	Unit		EM2119193-003	EM2119193-005	--------	--------	--------
					Result	Result	----	----	----
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
4-Chlorophenoxy acetic acid	122-88-3	10	µg/L		----	<10	----	----	----
2.4-DB	94-82-6	10	µg/L		----	<10	----	----	----
Dicamba	1918-00-9	10	µg/L		----	<10	----	----	----
Mecoprop	93-65-2	10	µg/L		----	<10	----	----	----
MCPA	94-74-6	10	µg/L		----	<10	----	----	----
2.4-DP	120-36-5	10	µg/L		----	<10	----	----	----
2.4-D	94-75-7	10	µg/L		----	<10	----	----	----
Triclopyr	55335-06-3	10	µg/L		----	<10	----	----	----
Silvex (2.4.5-TP/Fenoprop)	93-72-1	10	µg/L		----	<10	----	----	----
2.4.5-T	93-76-5	10	µg/L		----	<10	----	----	----
MCPB	94-81-5	10	µg/L		----	<10	----	----	----
Picloram	1918-02-1	10	µg/L		----	<10	----	----	----
Clopyralid	1702-17-6	10	µg/L		----	<10	----	----	----
Fluroxypyr	69377-81-7	10	µg/L		----	<10	----	----	----
2.6-D	575-90-6	10	µg/L		----	<10	----	----	----
2.4.6-T	575-89-3	10	µg/L		----	<10	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	1	%		----	**61.8**	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%		----	**89.4**	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%		----	**Not Determined**	----	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		----	**120**	----	----	----
Toluene-D8	2037-26-5	5	%		----	**108**	----	----	----
4-Bromofluorobenzene	460-00-4	5	%		----	**118**	----	----	----
EP075S: Acid Extractable Surrogates									
2-Fluorophenol	367-12-4	2	%		----	**25.7**	----	----	----
Phenol-d6	13127-88-3	2	%		----	**25.3**	----	----	----
2-Chlorophenol-D4	93951-73-6	2	%		----	**59.6**	----	----	----
2.4.6-Tribromophenol	118-79-6	2	%		----	**85.4**	----	----	----
EP075T: Base/Neutral Extractable Surrogates									
Nitrobenzene-D5	4165-60-0	2	%		----	**73.5**	----	----	----
1.2-Dichlorobenzene-D4	2199-69-1	2	%		----	**67.7**	----	----	----

Analytical Results

Sub-Matrix: WASTEWATER (Matrix: WATER)			Sample ID	Compost leachate	Pomona pump	----	----	----
			Sampling date / time	27-Sep-2021 15:30	28-Sep-2021 09:44	----	----	----
Compound	CAS Number	LOR	Unit	EM2119193-003	EM2119193-005	--------	--------	--------
				Result	Result	----	----	----
EP075T: Base/Neutral Extractable Surrogates - Continued								
2-Fluorobiphenyl	321-60-8	2	%	----	67.8	----	----	----
Anthracene-d10	1719-06-8	2	%	----	93.0	----	----	----
4-Terphenyl-d14	1718-51-0	2	%	----	79.6	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	101	117	----	----	----
Toluene-D8	2037-26-5	2	%	116	103	----	----	----
4-Bromofluorobenzene	460-00-4	2	%	110	106	----	----	----
EP202S: Phenoxyacetic Acid Herbicide Surrogate								
2.4-Dichlorophenyl Acetic Acid	19719-28-9	10	%	----	114	----	----	----

Surrogate Control Limits

Sub-Matrix: GROUNDWATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129

Sub-Matrix: WASTEWATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	125
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	117
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	51	127
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	132
Toluene-D8	2037-26-5	77	132
4-Bromofluorobenzene	460-00-4	67	131
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	6	83
Phenol-d6	13127-88-3	10	65
2-Chlorophenol-D4	93951-73-6	22	112
2.4.6-Tribromophenol	118-79-6	22	125
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	37	115
1.2-Dichlorobenzene-D4	2199-69-1	32	99
2-Fluorobiphenyl	321-60-8	39	116
Anthracene-d10	1719-06-8	49	123
4-Terphenyl-d14	1718-51-0	47	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129
EP202S: Phenoxyacetic Acid Herbicide Surrogate			
2.4-Dichlorophenyl Acetic Acid	19719-28-9	64	140

Inter-Laboratory Testing

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry) 14913 (Biology).

(WATER) EP050: Anionic Surfactants as MBAS

(WATER) EP202A: Phenoxyacetic Acid Herbicides by LCMS

(WATER) EP202S: Phenoxyacetic Acid Herbicide Surrogate

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2119454**	Page	: 1 of 4
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: SAMANTHA KING	Contact	: Peter Ravlic
Address	: 21-23 PATERSON ST LAUNCESTON TAS, AUSTRALIA 7250	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9645
Project	: 3219202	Date Samples Received	: 01-Oct-2021 11:25
Order number	: 3219202	Date Analysis Commenced	: 01-Oct-2021
C-O-C number	: ----	Issue Date	: 11-Oct-2021 08:55
Sampler	: SK		
Site	: Dulverton Landfill Water Monitoring (SW 6 monthly)		
Quote number	: EN/005		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

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This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Jarwis Nheu	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP030: The DO depletion for samples EM2119454 #1 and #4 is less than 2mg/L, this indicates that the samples have been over diluted and the BOD is less than 10mg/L. The BOD result reported were estimated from the lowest dilution.
- EA005-P: EM2119454 #1 Poor duplicate precision for pH due to sample heterogeneity. Confirmed by re-preparation and re-analysis.
- EA025: EM2119454 #1: Insufficient volume for sample to be analysed for suspended solids.
- ED037-P,EA005-P: EM2119454 #4. Insufficient sample provided to confirm the results
- EA010-P: Electrical Conductivity @ 25°C was analysed by manual method (EA010).
- It is recognised that TP is less than RP for sample #4. However, the difference is within experimental variation of the methods.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- ED045G: The presence of Thiocyanate, Thiosulfate and Sulfite can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	S2	S3	S7	QC1	----
				Sampling date / time	29-Sep-2021 00:00	29-Sep-2021 00:00	29-Sep-2021 00:00	29-Sep-2021 00:00	----
					EM2119454-001	EM2119454-002	EM2119454-003	EM2119454-004	--------
					Result	Result	Result	Result	----
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		**7.79**	**7.96**	**8.05**	**7.96**	**----**
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		**494**	**1000**	**1460**	**457**	**----**
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	5	mg/L		**----**	**54**	**132**	<5	**----**
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	<1	**----**
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	<1	<1	<1	**----**
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		**184**	**280**	**385**	**171**	**----**
Total Alkalinity as CaCO3	----	1	mg/L		**184**	**280**	**385**	**171**	**----**
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		**34**	**28**	**64**	**34**	**----**
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		**12**	**128**	**182**	**21**	**----**
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		**81**	**66**	**40**	**79**	**----**
Magnesium	7439-95-4	1	mg/L		**6**	**14**	**26**	**5**	**----**
Sodium	7440-23-5	1	mg/L		**14**	**76**	**124**	**13**	**----**
Potassium	7440-09-7	1	mg/L		**1**	**45**	**133**	**1**	**----**
EG020F: Dissolved Metals by ICP-MS									
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	**----**
Chromium	7440-47-3	0.001	mg/L		<0.001	**0.004**	**0.002**	<0.001	**----**
Copper	7440-50-8	0.001	mg/L		<0.001	**0.003**	**0.016**	<0.001	**----**
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	**----**
Manganese	7439-96-5	0.001	mg/L		**0.004**	**0.316**	**0.160**	**0.004**	**----**
Nickel	7440-02-0	0.001	mg/L		<0.001	**0.007**	**0.018**	<0.001	**----**
Zinc	7440-66-6	0.005	mg/L		<0.005	**0.009**	**0.027**	<0.005	**----**
Iron	7439-89-6	0.05	mg/L		<0.05	**0.51**	**0.57**	<0.05	**----**
EG020T: Total Metals by ICP-MS									
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	**0.0002**	<0.0001	**----**
Chromium	7440-47-3	0.001	mg/L		<0.001	**0.007**	**0.015**	<0.001	**----**
Copper	7440-50-8	0.001	mg/L		<0.001	**0.005**	**0.031**	<0.001	**----**
Lead	7439-92-1	0.001	mg/L		<0.001	**0.002**	**0.010**	<0.001	**----**
Manganese	7439-96-5	0.001	mg/L		**0.009**	**0.385**	**0.298**	**0.010**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	S2	S3	S7	QC1	----
				Sampling date / time	29-Sep-2021 00:00	29-Sep-2021 00:00	29-Sep-2021 00:00	29-Sep-2021 00:00	----
Compound	CAS Number	LOR	Unit		EM2119454-001	EM2119454-002	EM2119454-003	EM2119454-004	--------
					Result	Result	Result	Result	----
EG020T: Total Metals by ICP-MS - Continued									
Nickel	7440-02-0	0.001	mg/L		<0.001	**0.009**	**0.025**	<0.001	----
Zinc	7440-66-6	0.005	mg/L		<0.005	**0.014**	**0.083**	<0.005	----
Iron	7439-89-6	0.05	mg/L		**0.08**	**2.86**	**8.36**	**0.07**	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		<0.01	**11.2**	**14.2**	<0.01	----
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		**0.01**	**0.05**	**0.09**	<0.01	----
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**1.17**	**1.14**	**3.64**	**1.21**	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**1.18**	**1.19**	**3.73**	**1.21**	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**0.5**	**12.8**	**35.8**	**0.5**	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		**1.7**	**14.0**	**39.5**	**1.7**	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.01	**0.61**	**6.77**	<0.01	----
EK071FG: Dissolved Reactive Phosphorus as P by DA									
Dissolved Reactive Phosphorus as P	----	0.01	mg/L		<0.01	**0.48**	**3.86**	**0.02**	----
EN055: Ionic Balance									
ø Total Anions	----	0.01	meq/L		**4.72**	**9.79**	**14.2**	**4.72**	----
ø Total Cations	----	0.01	meq/L		**5.17**	**8.90**	**12.9**	**4.94**	----
ø Ionic Balance	----	0.01	%		**4.52**	**4.74**	**4.53**	----	----
EP030: Biochemical Oxygen Demand (BOD)									
Biochemical Oxygen Demand	----	2	mg/L		<10	**22**	**19**	<10	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2135818**	Page	: 1 of 4
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: SAMANTHA KING	Contact	: Sarah Mathew
Address	: 21-23 PATERSON ST LAUNCESTON TAS, AUSTRALIA 7250	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: 3219202 Dulverton Landfill Water Monitoring (SW 6 monthly)	Date Samples Received	: 06-Oct-2021 11:20
Order number	: 3219202	Date Analysis Commenced	: 06-Oct-2021
C-O-C number	: ----	Issue Date	: 13-Oct-2021 13:01
Sampler	: ----		
Site	:		
Quote number	: EN/005		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

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- Analytical Results

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Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

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LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QQC1	----	----	----	----
			Sampling date / time	29-Sep-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2135818-001	--------	--------	--------	--------
				Result	----	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**7.66**	----	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**492**	----	----	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	<5	----	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**180**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**180**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**34**	----	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**24**	----	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**81**	----	----	----	----
Magnesium	7439-95-4	1	mg/L	**7**	----	----	----	----
Sodium	7440-23-5	1	mg/L	**12**	----	----	----	----
Potassium	7440-09-7	1	mg/L	**1**	----	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	----	----	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	----	----	----	----
EG020T: Total Metals by ICP-MS								
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	**0.005**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QQC1	----	----	----	----
				Sampling date / time	29-Sep-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2135818-001	--------	--------	--------	--------
					Result	----	----	----	----
EG020T: Total Metals by ICP-MS - Continued									
Nickel	7440-02-0	0.001	mg/L		<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	----	----	----	----
Iron	7439-89-6	0.05	mg/L		<0.05	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.02**	----	----	----	----
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	----	----	----	----
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**1.17**	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**1.17**	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**0.2**	----	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		**1.4**	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.02**	----	----	----	----
EK071FG: Dissolved Reactive Phosphorus as P by DA									
Dissolved Reactive Phosphorus as P	----	0.01	mg/L		<0.01	----	----	----	----
EN055: Ionic Balance									
ø Total Anions	----	0.01	meq/L		**4.98**	----	----	----	----
ø Total Cations	----	0.01	meq/L		**5.16**	----	----	----	----
ø Ionic Balance	----	0.01	%		**1.82**	----	----	----	----
EP030: Biochemical Oxygen Demand (BOD)									
Biochemical Oxygen Demand	----	2	mg/L		**2**	----	----	----	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2124670**	Page	: 1 of 6
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: SAMANTHA KING	Contact	: Peter Ravlic
Address	: 21-23 PATERSON ST LAUNCESTON TAS, AUSTRALIA 7250	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9645
Project	: 3219202	Date Samples Received	: 08-Dec-2021 11:10
Order number	: 3219202	Date Analysis Commenced	: 08-Dec-2021
C-O-C number	: ----	Issue Date	: 15-Dec-2021 18:40
Sampler	: SAMANTHA KING		
Site	:		
Quote number	: EN/005		
No. of samples received	: 8		
No. of samples analysed	: 8		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

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- Analytical Results

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Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Laboratory Coordinator	Melbourne Inorganics, Springvale, VIC
Jarwis Nheu	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

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Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

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Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- ED041G: EM2124477-001 Poor matrix spike recovery for sulfate due to matrix effects. Results were confirmed by re-preparation and re-analysis.
- Ionic Balance out of acceptable limits for sample #1 - #8 due to analytes not quantified in this report.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- ED045G: The presence of Thiocyanate, Thiosulfate and Sulfite can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	S1	S2	S3	SP3	S4
			Sampling date / time	06-Dec-2021 00:00	06-Dec-2021 00:00	06-Dec-2021 00:00	06-Dec-2021 00:00	06-Dec-2021 00:00
Compound	CAS Number	LOR	Unit	EM2124670-001	EM2124670-002	EM2124670-003	EM2124670-004	EM2124670-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**7.56**	**7.61**	**7.28**	**7.43**	**7.46**
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**526**	**535**	**809**	**600**	**515**
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	<5	**8**	**2520**	**22**	<5
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**209**	**204**	**296**	**207**	**197**
Total Alkalinity as CaCO3	----	1	mg/L	**209**	**204**	**296**	**207**	**197**
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**32**	**32**	**15**	**36**	**30**
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**31**	**33**	**69**	**44**	**32**
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**63**	**65**	**70**	**23**	**63**
Magnesium	7439-95-4	1	mg/L	**6**	**6**	**12**	**11**	**6**
Sodium	7440-23-5	1	mg/L	**15**	**16**	**39**	**48**	**14**
Potassium	7440-09-7	1	mg/L	**1**	**1**	**28**	**40**	**1**
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.10**	**0.09**	**1.16**	**0.18**	**0.04**
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	**0.06**	**0.05**	<0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**0.68**	**0.69**	**0.15**	**0.04**	**0.68**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.68**	**0.69**	**0.21**	**0.09**	**0.68**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**0.2**	**0.3**	**20.0**	**5.6**	**0.1**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**0.9**	**1.0**	**20.2**	**5.7**	**0.8**
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.02**	**0.03**	**16.2**	**1.91**	**0.02**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	S1	S2	S3	SP3	S4
				Sampling date / time	06-Dec-2021 00:00	06-Dec-2021 00:00	06-Dec-2021 00:00	06-Dec-2021 00:00	06-Dec-2021 00:00
Compound	CAS Number	LOR	Unit		EM2124670-001	EM2124670-002	EM2124670-003	EM2124670-004	EM2124670-005
					Result	Result	Result	Result	Result
EK071FG: Dissolved Reactive Phosphorus as P by DA									
Dissolved Reactive Phosphorus as P	----	0.01	mg/L		<0.01	<0.01	**0.04**	**1.86**	**0.02**
EN055: Ionic Balance									
ø Total Anions	----	0.01	meq/L		**5.72**	**5.67**	**8.17**	**6.13**	**5.46**
ø Total Cations	----	0.01	meq/L		**4.32**	**4.46**	**6.89**	**5.16**	**4.27**
ø Ionic Balance	----	0.01	%		**14.0**	**12.0**	**8.49**	**8.53**	**12.2**
EP030: Biochemical Oxygen Demand (BOD)									
Biochemical Oxygen Demand	----	2	mg/L		<2	<2	**29**	**10**	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	S6	S9	QC1	----	----
			Sampling date / time	06-Dec-2021 00:00	06-Dec-2021 00:00	06-Dec-2021 00:00	----	----
Compound	CAS Number	LOR	Unit	EM2124670-006	EM2124670-007	EM2124670-008	--------	--------
				Result	Result	Result	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**7.65**	**7.90**	**7.79**	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	**541**	**514**	**523**	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	**9**	<5	<5	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**209**	**210**	**204**	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**209**	**210**	**204**	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**34**	**32**	**32**	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	1	mg/L	**34**	**32**	**33**	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**66**	**65**	**65**	----	----
Magnesium	7439-95-4	1	mg/L	**6**	**6**	**6**	----	----
Sodium	7440-23-5	1	mg/L	**15**	**15**	**15**	----	----
Potassium	7440-09-7	1	mg/L	**1**	**1**	**1**	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.07**	**0.10**	**0.07**	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**0.71**	**0.74**	**0.68**	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.71**	**0.74**	**0.68**	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**0.1**	**0.1**	**0.2**	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**0.8**	**0.8**	**0.9**	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.02**	**0.02**	**0.03**	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	S6	S9	QC1	----	----
				Sampling date / time	06-Dec-2021 00:00	06-Dec-2021 00:00	06-Dec-2021 00:00	----	----
Compound	CAS Number	LOR	Unit		EM2124670-006	EM2124670-007	EM2124670-008	--------	--------
					Result	Result	Result	----	----
EK071FG: Dissolved Reactive Phosphorus as P by DA									
Dissolved Reactive Phosphorus as P	----	0.01	mg/L		<0.01	<0.01	<0.01	----	----
EN055: Ionic Balance									
ø **Total Anions**	----	0.01	meq/L		**5.84**	**5.76**	**5.67**	----	----
ø **Total Cations**	----	0.01	meq/L		**4.46**	**4.42**	**4.42**	----	----
ø **Ionic Balance**	----	0.01	%		**13.4**	**13.2**	**12.5**	----	----
EP030: Biochemical Oxygen Demand (BOD)									
Biochemical Oxygen Demand	----	2	mg/L		<2	<2	<2	----	----

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EM2124673**	Page	: 1 of 15
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: SAMANTHA KING	Contact	: Peter Ravlic
Address	: 21-23 PATERSON ST LAUNCESTON TAS, AUSTRALIA 7250	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +6138549 9645
Project	: 3219202	Date Samples Received	: 08-Dec-2021 11:10
Order number	: 3219202	Date Analysis Commenced	: 08-Dec-2021
C-O-C number	: ----	Issue Date	: 16-Dec-2021 16:35
Sampler	: SAMANTHA KING		
Site	:		
Quote number	: EN/005		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Dilani Fernando	Laboratory Coordinator	Melbourne Inorganics, Springvale, VIC
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Jarwis Nheu	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EK086/EK087 EM2124673#1 required dilution prior to analysis due to sample matrix interference. LOR has been raised accordingly
- EK085 EM2124673#1 required dilution prior to analysis due to matrix interference. LOR has been raised accordingly
- ED037-P: EM2124673 # 1. Particular samples were run via manual method for Alkalinity(ED037) due to sample matrix.
- EG035F : EM2124673 #1 dissolved mercury required dilution prior analysis due to sample matrix. LOR has been adjusted accordingly.
- EP075: Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- It is recognised that total arsenic is less than dissolved arsenic for sample #1. However, the difference is within experimental variation of the methods.
- EK057G: Sample EM2124673-001 has been diluted prior to analysis due to sample matrix. LORs have been raised accordingly.
- EG020-T : EM2124673 #1 total metal required dilution prior analysis due to sample matrix. LORs have been adjusted accordingly.
- EG020-F : EM2124673 #1 dissolved metal required dilution prior analysis due to sample matrix. LORs have been adjusted accordingly.
- EP068: Poor surrogate recovery for sample EM2124673_01 due to matrix interferences.
- EG035T:EM2124673 #1 Particular samples required dilution prior to extraction due to matrix interferences. LOR values have been adjusted accordingly.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium, sodium, iron and ammonia for sample #1.
- (EK085): (EM2124477#1) Poor matrix spike recovery for (sulphide) due to sample matrix. Confirmed by re-extraction and re-analysis.
- ED045G: The presence of Thiocyanate, Thiosulfate and Sulfite can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- EP075: Where reported, 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- MBAS (EP050) is calculated as LAS, molecular weight 348 g/mol.

Analytical Results

Sub-Matrix: LEACHATE (Matrix: WATER)				Sample ID	Landfill Leachate	----	----	----	----
				Sampling date / time	06-Dec-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2124673-001	--------	--------	--------	--------
					Result	----	----	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		**11800**	----	----	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	5	mg/L		**420**	----	----	----	----
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		**10800**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L		**10800**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		**30**	----	----	----	----
ED043: Total Oxidised Sulfur as SO4 2-									
Total Oxidised Sulfur as SO4 2-	----	10	mg/L		**310**	----	----	----	----
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		**3830**	----	----	----	----
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		**94**	----	----	----	----
Magnesium	7439-95-4	1	mg/L		**75**	----	----	----	----
Sodium	7440-23-5	1	mg/L		**2000**	----	----	----	----
Potassium	7440-09-7	1	mg/L		**1280**	----	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		**4.00**	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L		**0.258**	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0010	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		**1.12**	----	----	----	----
Copper	7440-50-8	0.001	mg/L		**0.378**	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		**0.231**	----	----	----	----
Lead	7439-92-1	0.001	mg/L		**0.012**	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		**0.340**	----	----	----	----
Manganese	7439-96-5	0.001	mg/L		**0.602**	----	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.10	----	----	----	----
Iron	7439-89-6	0.05	mg/L		**17.7**	----	----	----	----
EG020T: Total Metals by ICP-MS									
Aluminium	7429-90-5	0.01	mg/L		**4.22**	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L		**0.256**	----	----	----	----

Analytical Results

Sub-Matrix: LEACHATE (Matrix: WATER)				Sample ID	Landfill Leachate	----	----	----	----
				Sampling date / time	06-Dec-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2124673-001	--------	--------	--------	--------
					Result	----	----	----	----
EG020T: Total Metals by ICP-MS - Continued									
Cadmium	7440-43-9	0.0001	mg/L		<0.0010	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		**1.24**	----	----	----	----
Copper	7440-50-8	0.001	mg/L		**0.427**	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		**0.256**	----	----	----	----
Lead	7439-92-1	0.001	mg/L		**0.027**	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		**0.533**	----	----	----	----
Manganese	7439-96-5	0.001	mg/L		**0.830**	----	----	----	----
Selenium	7782-49-2	0.01	mg/L		<0.10	----	----	----	----
Iron	7439-89-6	0.05	mg/L		**82.0**	----	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0010	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0010	----	----	----	----
EK026SF: Total CN by Segmented Flow Analyser									
Total Cyanide	57-12-5	0.004	mg/L		**0.043**	----	----	----	----
EK055: Ammonia as N									
Ammonia as N	7664-41-7	0.1	mg/L		**2030**	----	----	----	----
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.10	----	----	----	----
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.45**	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.45**	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**2170**	----	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		**2170**	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**16.6**	----	----	----	----
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		**15.8**	----	----	----	----
EK085M: Sulfide as S2-									
Sulfide as S2-	18496-25-8	0.1	mg/L		<0.5	----	----	----	----

Analytical Results

Sub-Matrix: LEACHATE (Matrix: WATER)				Sample ID	Landfill Leachate	----	----	----	----
				Sampling date / time	06-Dec-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2124673-001	--------	--------	--------	--------
					Result	----	----	----	----
EK086: Sulfite as SO3 2-									
Sulfite as SO3 2-	14265-45-3	2	mg/L		**35**	----	----	----	----
EK087: Thiosulfate as S2O3 2-									
Thiosulfate as S2O3 2-	----	2	mg/L		**84**	----	----	----	----
EN055: Ionic Balance									
ø **Total Anions**	----	0.01	meq/L		**324**	----	----	----	----
ø **Total Cations**	----	0.01	meq/L		**276**	----	----	----	----
ø **Ionic Balance**	----	0.01	%		**8.00**	----	----	----	----
EP002: Dissolved Organic Carbon (DOC)									
Dissolved Organic Carbon	----	1	mg/L		**2030**	----	----	----	----
EP010: Formaldehyde									
Formaldehyde	50-00-0	0.1	mg/L		**6.6**	----	----	----	----
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		**5**	----	----	----	----
EP030: Biochemical Oxygen Demand (BOD)									
Biochemical Oxygen Demand	----	2	mg/L		**508**	----	----	----	----
EP050: Anionic Surfactants as MBAS									
Anionic Surfactants as MBAS	----	0.1	mg/L		**2.7**	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
^ **Total Polychlorinated biphenyls**	----	1	µg/L		<1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L		<0.5	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L		<0.5	----	----	----	----
beta-BHC	319-85-7	0.5	µg/L		<0.5	----	----	----	----
gamma-BHC	58-89-9	0.5	µg/L		<0.5	----	----	----	----
delta-BHC	319-86-8	0.5	µg/L		<0.5	----	----	----	----
Heptachlor	76-44-8	0.5	µg/L		<0.5	----	----	----	----
Aldrin	309-00-2	0.5	µg/L		<0.5	----	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L		<0.5	----	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L		<0.5	----	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L		<0.5	----	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L		<0.5	----	----	----	----
Dieldrin	60-57-1	0.5	µg/L		<0.5	----	----	----	----
4.4`-DDE	72-55-9	0.5	µg/L		<0.5	----	----	----	----
Endrin	72-20-8	0.5	µg/L		<0.5	----	----	----	----

Analytical Results

Sub-Matrix: LEACHATE (Matrix: WATER)				Sample ID	Landfill Leachate	----	----	----	----
				Sampling date / time	06-Dec-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2124673-001	--------	--------	--------	--------
					Result	----	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
beta-Endosulfan	33213-65-9	0.5	µg/L		<0.5	----	----	----	----
4.4`-DDD	72-54-8	0.5	µg/L		<0.5	----	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L		<0.5	----	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L		<0.5	----	----	----	----
4.4`-DDT	50-29-3	2.0	µg/L		<2.0	----	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L		<0.5	----	----	----	----
Methoxychlor	72-43-5	2.0	µg/L		<2.0	----	----	----	----
^ Total Chlordane (sum)	----	0.5	µg/L		<0.5	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L		<0.5	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L		<0.5	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.5	µg/L		<0.5	----	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L		<0.5	----	----	----	----
Monocrotophos	6923-22-4	2.0	µg/L		<2.0	----	----	----	----
Dimethoate	60-51-5	0.5	µg/L		<0.5	----	----	----	----
Diazinon	333-41-5	0.5	µg/L		<0.5	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L		<0.5	----	----	----	----
Parathion-methyl	298-00-0	2.0	µg/L		<2.0	----	----	----	----
Malathion	121-75-5	0.5	µg/L		<0.5	----	----	----	----
Fenthion	55-38-9	0.5	µg/L		<0.5	----	----	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L		<0.5	----	----	----	----
Parathion	56-38-2	2.0	µg/L		<2.0	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L		<0.5	----	----	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L		<0.5	----	----	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L		<0.5	----	----	----	----
Fenamiphos	22224-92-6	0.5	µg/L		<0.5	----	----	----	----
Prothiofos	34643-46-4	0.5	µg/L		<0.5	----	----	----	----
Ethion	563-12-2	0.5	µg/L		<0.5	----	----	----	----
Carbophenothion	786-19-6	0.5	µg/L		<0.5	----	----	----	----
Azinphos Methyl	86-50-0	0.5	µg/L		<0.5	----	----	----	----
EP074B: Oxygenated Compounds									
2-Propanone (Acetone)	67-64-1	50	µg/L		**510**	----	----	----	----
Vinyl Acetate	108-05-4	50	µg/L		<50	----	----	----	----
2-Butanone (MEK)	78-93-3	50	µg/L		**350**	----	----	----	----

Analytical Results

Sub-Matrix: LEACHATE (Matrix: WATER)				Sample ID	Landfill Leachate	----	----	----	----
				Sampling date / time	06-Dec-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2124673-001	--------	--------	--------	--------
					Result	----	----	----	----
EP074B: Oxygenated Compounds - Continued									
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L		<50	----	----	----	----
2-Hexanone (MBK)	591-78-6	50	µg/L		<50	----	----	----	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	5	µg/L		<5	----	----	----	----
1.2-Dichloropropane	78-87-5	5	µg/L		<5	----	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L		<5	----	----	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L		<5	----	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L		<5	----	----	----	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	50	µg/L		<50	----	----	----	----
Chloromethane	74-87-3	50	µg/L		<50	----	----	----	----
Vinyl chloride	75-01-4	50	µg/L		<50	----	----	----	----
Bromomethane	74-83-9	50	µg/L		<50	----	----	----	----
Chloroethane	75-00-3	50	µg/L		<50	----	----	----	----
Trichlorofluoromethane	75-69-4	50	µg/L		<50	----	----	----	----
1.1-Dichloroethene	75-35-4	5	µg/L		<5	----	----	----	----
Iodomethane	74-88-4	5	µg/L		<5	----	----	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L		<5	----	----	----	----
1.1-Dichloroethane	75-34-3	5	µg/L		<5	----	----	----	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L		<5	----	----	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L		<5	----	----	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L		<5	----	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L		<5	----	----	----	----
1.2-Dichloroethane	107-06-2	5	µg/L		<5	----	----	----	----
Trichloroethene	79-01-6	5	µg/L		<5	----	----	----	----
Dibromomethane	74-95-3	5	µg/L		<5	----	----	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L		<5	----	----	----	----
1.3-Dichloropropane	142-28-9	5	µg/L		<5	----	----	----	----
Tetrachloroethene	127-18-4	5	µg/L		<5	----	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L		<5	----	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L		<5	----	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L		<5	----	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L		<5	----	----	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L		<5	----	----	----	----

Analytical Results

Sub-Matrix: LEACHATE (Matrix: WATER)				Sample ID	Landfill Leachate	----	----	----	----
				Sampling date / time	06-Dec-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2124673-001	--------	--------	--------	--------
					Result	----	----	----	----
EP074E: Halogenated Aliphatic Compounds - Continued									
Pentachloroethane	76-01-7	5	µg/L		<5	----	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	----	----	----	----
Hexachlorobutadiene	87-68-3	5	µg/L		<5	----	----	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	----	----	----	----
Bromobenzene	108-86-1	5	µg/L		<5	----	----	----	----
2-Chlorotoluene	95-49-8	5	µg/L		<5	----	----	----	----
4-Chlorotoluene	106-43-4	5	µg/L		<5	----	----	----	----
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	----	----	----	----
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	----	----	----	----
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	----	----	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	----	----	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	----	----	----	----
Bromodichloromethane	75-27-4	5	µg/L		<5	----	----	----	----
Dibromochloromethane	124-48-1	5	µg/L		<5	----	----	----	----
Bromoform	75-25-2	5	µg/L		<5	----	----	----	----
EP075A: Phenolic Compounds									
Phenol	108-95-2	2	µg/L		**5**	----	----	----	----
2-Chlorophenol	95-57-8	2	µg/L		<2	----	----	----	----
2-Methylphenol	95-48-7	2	µg/L		**52**	----	----	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L		**38**	----	----	----	----
2-Nitrophenol	88-75-5	2	µg/L		<2	----	----	----	----
2.4-Dimethylphenol	105-67-9	2	µg/L		<2	----	----	----	----
2.4-Dichlorophenol	120-83-2	2	µg/L		<2	----	----	----	----
2.6-Dichlorophenol	87-65-0	2	µg/L		<2	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L		<2	----	----	----	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L		<2	----	----	----	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L		<2	----	----	----	----
Pentachlorophenol	87-86-5	4	µg/L		<4	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	2	µg/L		<2	----	----	----	----
2-Methylnaphthalene	91-57-6	2	µg/L		<2	----	----	----	----

Analytical Results

Sub-Matrix: LEACHATE (Matrix: WATER)				Sample ID	Landfill Leachate	----	----	----	----
				Sampling date / time	06-Dec-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2124673-001	--------	--------	--------	--------
					Result	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued									
2-Chloronaphthalene	91-58-7	2	µg/L		<2	----	----	----	----
Acenaphthylene	208-96-8	2	µg/L		<2	----	----	----	----
Acenaphthene	83-32-9	2	µg/L		<2	----	----	----	----
Fluorene	86-73-7	2	µg/L		<2	----	----	----	----
Phenanthrene	85-01-8	2	µg/L		<2	----	----	----	----
Anthracene	120-12-7	2	µg/L		<2	----	----	----	----
Fluoranthene	206-44-0	2	µg/L		<2	----	----	----	----
Pyrene	129-00-0	2	µg/L		<2	----	----	----	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L		<2	----	----	----	----
Benz(a)anthracene	56-55-3	2	µg/L		<2	----	----	----	----
Chrysene	218-01-9	2	µg/L		<2	----	----	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L		<4	----	----	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L		<2	----	----	----	----
Benzo(a)pyrene	50-32-8	2	µg/L		<2	----	----	----	----
3-Methylcholanthrene	56-49-5	2	µg/L		<2	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L		<2	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L		<2	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L		<2	----	----	----	----
^ Sum of PAHs	----	2	µg/L		<2	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L		<2	----	----	----	----
EP075C: Phthalate Esters									
Dimethyl phthalate	131-11-3	2	µg/L		<2	----	----	----	----
Diethyl phthalate	84-66-2	2	µg/L		<2	----	----	----	----
Di-n-butyl phthalate	84-74-2	2	µg/L		<2	----	----	----	----
Butyl benzyl phthalate	85-68-7	2	µg/L		<2	----	----	----	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L		<10	----	----	----	----
Di-n-octylphthalate	117-84-0	2	µg/L		<2	----	----	----	----
EP075D: Nitrosamines									
N-Nitrosomethylethylamine	10595-95-6	2	µg/L		<2	----	----	----	----
N-Nitrosodiethylamine	55-18-5	2	µg/L		<2	----	----	----	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L		<4	----	----	----	----
N-Nitrosomorpholine	59-89-2	2	µg/L		<2	----	----	----	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L		<2	----	----	----	----
N-Nitrosopiperidine	100-75-4	2	µg/L		<2	----	----	----	----

Analytical Results

Sub-Matrix: LEACHATE (Matrix: WATER)				Sample ID	Landfill Leachate	----	----	----	----
				Sampling date / time	06-Dec-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2124673-001	--------	--------	--------	--------
					Result	----	----	----	----
EP075D: Nitrosamines - Continued									
N-Nitrosodibutylamine	924-16-3	2	µg/L		<2	----	----	----	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L		<4	----	----	----	----
Methapyrilene	91-80-5	2	µg/L		<2	----	----	----	----
EP075E: Nitroaromatics and Ketones									
2-Picoline	109-06-8	2	µg/L		9	----	----	----	----
Acetophenone	98-86-2	2	µg/L		6	----	----	----	----
Nitrobenzene	98-95-3	2	µg/L		<2	----	----	----	----
Isophorone	78-59-1	2	µg/L		<2	----	----	----	----
2.6-Dinitrotoluene	606-20-2	4	µg/L		<4	----	----	----	----
2.4-Dinitrotoluene	121-14-2	4	µg/L		<4	----	----	----	----
1-Naphthylamine	134-32-7	2	µg/L		<2	----	----	----	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L		<2	----	----	----	----
5-Nitro-o-toluidine	99-55-8	2	µg/L		<2	----	----	----	----
Azobenzene	103-33-3	2	µg/L		<2	----	----	----	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L		<2	----	----	----	----
Phenacetin	62-44-2	2	µg/L		<2	----	----	----	----
4-Aminobiphenyl	92-67-1	2	µg/L		<2	----	----	----	----
Pentachloronitrobenzene	82-68-8	2	µg/L		<2	----	----	----	----
Pronamide	23950-58-5	2	µg/L		<2	----	----	----	----
Dimethylaminoazobenzene	60-11-7	2	µg/L		<2	----	----	----	----
Chlorobenzilate	510-15-6	2	µg/L		<2	----	----	----	----
EP075F: Haloethers									
Bis(2-chloroethyl) ether	111-44-4	2	µg/L		<2	----	----	----	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L		<2	----	----	----	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L		<2	----	----	----	----
4-Bromophenyl phenyl ether	101-55-3	2	µg/L		<2	----	----	----	----
EP075G: Chlorinated Hydrocarbons									
1.3-Dichlorobenzene	541-73-1	2	µg/L		<2	----	----	----	----
1.4-Dichlorobenzene	106-46-7	2	µg/L		<2	----	----	----	----
1.2-Dichlorobenzene	95-50-1	2	µg/L		<2	----	----	----	----
Hexachloroethane	67-72-1	2	µg/L		<2	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L		<2	----	----	----	----
Hexachloropropylene	1888-71-7	2	µg/L		<2	----	----	----	----

Analytical Results

Sub-Matrix: LEACHATE (Matrix: WATER)				Sample ID	Landfill Leachate	----	----	----	----
				Sampling date / time	06-Dec-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2124673-001	--------	--------	--------	--------
					Result	----	----	----	----
EP075G: Chlorinated Hydrocarbons - Continued									
Hexachlorobutadiene	87-68-3	2	µg/L		<2	----	----	----	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L		<10	----	----	----	----
Pentachlorobenzene	608-93-5	2	µg/L		<2	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L		<4	----	----	----	----
EP075H: Anilines and Benzidines									
Aniline	62-53-3	2	µg/L		**59**	----	----	----	----
4-Chloroaniline	106-47-8	2	µg/L		<2	----	----	----	----
2-Nitroaniline	88-74-4	4	µg/L		<4	----	----	----	----
3-Nitroaniline	99-09-2	4	µg/L		<4	----	----	----	----
Dibenzofuran	132-64-9	2	µg/L		<2	----	----	----	----
4-Nitroaniline	100-01-6	2	µg/L		<2	----	----	----	----
Carbazole	86-74-8	2	µg/L		<2	----	----	----	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L		<2	----	----	----	----
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	2	µg/L		<2	----	----	----	----
beta-BHC	319-85-7	2	µg/L		<2	----	----	----	----
gamma-BHC	58-89-9	2	µg/L		<2	----	----	----	----
delta-BHC	319-86-8	2	µg/L		<2	----	----	----	----
Heptachlor	76-44-8	2	µg/L		<2	----	----	----	----
Aldrin	309-00-2	2	µg/L		<2	----	----	----	----
Heptachlor epoxide	1024-57-3	2	µg/L		<2	----	----	----	----
alpha-Endosulfan	959-98-8	2	µg/L		<2	----	----	----	----
4.4`-DDE	72-55-9	2	µg/L		<2	----	----	----	----
Dieldrin	60-57-1	2	µg/L		<2	----	----	----	----
Endrin	72-20-8	2	µg/L		<2	----	----	----	----
beta-Endosulfan	33213-65-9	2	µg/L		<2	----	----	----	----
4.4`-DDD	72-54-8	2	µg/L		<2	----	----	----	----
Endosulfan sulfate	1031-07-8	2	µg/L		<2	----	----	----	----
4.4`-DDT	50-29-3	4	µg/L		<4	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L		<4	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	4	µg/L		<4	----	----	----	----
EP075J: Organophosphorus Pesticides									
Dichlorvos	62-73-7	2	µg/L		<2	----	----	----	----

Analytical Results

Sub-Matrix: LEACHATE (Matrix: WATER)				Sample ID	Landfill Leachate	----	----	----	----
				Sampling date / time	06-Dec-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2124673-001	--------	--------	--------	--------
					Result	----	----	----	----
EP075J: Organophosphorus Pesticides - Continued									
Dimethoate	60-51-5	2	µg/L		<2	----	----	----	----
Diazinon	333-41-5	2	µg/L		<2	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L		<2	----	----	----	----
Malathion	121-75-5	2	µg/L		<2	----	----	----	----
Fenthion	55-38-9	2	µg/L		<2	----	----	----	----
Chlorpyrifos	2921-88-2	2	µg/L		<2	----	----	----	----
Pirimphos-ethyl	23505-41-1	2	µg/L		<2	----	----	----	----
Chlorfenvinphos	470-90-6	2	µg/L		<2	----	----	----	----
Prothiofos	34643-46-4	2	µg/L		<2	----	----	----	----
Ethion	563-12-2	2	µg/L		<2	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		210	----	----	----	----
C10 - C14 Fraction	----	50	µg/L		1730	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		4800	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		340	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		6870	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		190	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		170	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		2120	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		4420	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		150	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		6690	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		2120	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		4	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		6	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		5	----	----	----	----
^ Total Xylenes	----	2	µg/L		11	----	----	----	----
^ Sum of BTEX	----	1	µg/L		17	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----

Analytical Results

Sub-Matrix: LEACHATE (Matrix: WATER)				Sample ID	Landfill Leachate	----	----	----	----
				Sampling date / time	06-Dec-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2124673-001	--------	--------	--------	--------
					Result	----	----	----	----
EP080: BTEXN - Continued									
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
4-Chlorophenoxy acetic acid	122-88-3	10	µg/L		<10	----	----	----	----
2.4-DB	94-82-6	10	µg/L		<10	----	----	----	----
Dicamba	1918-00-9	10	µg/L		<10	----	----	----	----
Mecoprop	93-65-2	10	µg/L		<10	----	----	----	----
MCPA	94-74-6	10	µg/L		<10	----	----	----	----
2.4-DP	120-36-5	10	µg/L		<10	----	----	----	----
2.4-D	94-75-7	10	µg/L		<10	----	----	----	----
Triclopyr	55335-06-3	10	µg/L		<10	----	----	----	----
Silvex (2.4.5-TP/Fenoprop)	93-72-1	10	µg/L		<10	----	----	----	----
2.4.5-T	93-76-5	10	µg/L		<10	----	----	----	----
MCPB	94-81-5	10	µg/L		<10	----	----	----	----
Picloram	1918-02-1	10	µg/L		<10	----	----	----	----
Clopyralid	1702-17-6	10	µg/L		<10	----	----	----	----
Fluroxypyr	69377-81-7	10	µg/L		<10	----	----	----	----
2.6-D	575-90-6	10	µg/L		<10	----	----	----	----
2.4.6-T	575-89-3	10	µg/L		<10	----	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	1	%		55.4	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%		56.0	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%		Not Determined	----	----	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		111	----	----	----	----
Toluene-D8	2037-26-5	5	%		110	----	----	----	----
4-Bromofluorobenzene	460-00-4	5	%		109	----	----	----	----
EP075S: Acid Extractable Surrogates									
2-Fluorophenol	367-12-4	2	%		26.7	----	----	----	----
Phenol-d6	13127-88-3	2	%		23.6	----	----	----	----
2-Chlorophenol-D4	93951-73-6	2	%		39.5	----	----	----	----
2.4.6-Tribromophenol	118-79-6	2	%		51.2	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates									
Nitrobenzene-D5	4165-60-0	2	%		42.5	----	----	----	----

Analytical Results

Sub-Matrix: LEACHATE (Matrix: WATER)				Sample ID	Landfill Leachate	----	----	----	----
				Sampling date / time	06-Dec-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2124673-001	--------	--------	--------	--------
					Result	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates - Continued									
1.2-Dichlorobenzene-D4	2199-69-1	2	%		39.1	----	----	----	----
2-Fluorobiphenyl	321-60-8	2	%		41.1	----	----	----	----
Anthracene-d10	1719-06-8	2	%		53.5	----	----	----	----
4-Terphenyl-d14	1718-51-0	2	%		12.4	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		107	----	----	----	----
Toluene-D8	2037-26-5	2	%		91.4	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		104	----	----	----	----
EP202S: Phenoxyacetic Acid Herbicide Surrogate									
2.4-Dichlorophenyl Acetic Acid	19719-28-9	10	%		115	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **LEACHATE**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	41	125
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	117
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	51	127
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	132
Toluene-D8	2037-26-5	77	132
4-Bromofluorobenzene	460-00-4	67	131
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	6	83
Phenol-d6	13127-88-3	10	65
2-Chlorophenol-D4	93951-73-6	22	112
2.4.6-Tribromophenol	118-79-6	22	125
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	37	115
1.2-Dichlorobenzene-D4	2199-69-1	32	99
2-Fluorobiphenyl	321-60-8	39	116
Anthracene-d10	1719-06-8	49	123
4-Terphenyl-d14	1718-51-0	47	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129
EP202S: Phenoxyacetic Acid Herbicide Surrogate			
2.4-Dichlorophenyl Acetic Acid	19719-28-9	64	140

Inter-Laboratory Testing

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry) 14913 (Biology).

(WATER) EP202A: Phenoxyacetic Acid Herbicides by LCMS

(WATER) EP202S: Phenoxyacetic Acid Herbicide Surrogate

(WATER) EP050: Anionic Surfactants as MBAS

(WATER) EP020: Oil and Grease (O&G)

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2144989**	Page	: 1 of 4
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: SAMANTHA KING	Contact	: Sarah Mathew
Address	: 21-23 PATERSON ST LAUNCESTON TAS, AUSTRALIA 7250	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: 3219202	Date Samples Received	: 09-Dec-2021 14:00
Order number	: 3219202	Date Analysis Commenced	: 09-Dec-2021
C-O-C number	: ----	Issue Date	: 15-Dec-2021 17:55
Sampler	: ----		
Site	:		
Quote number	: EN/005		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QQC1	----	----	----	----
				Sampling date / time	06-Dec-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2144989-001	--------	--------	--------	--------
					Result	----	----	----	----
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		**8.16**	----	----	----	----
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		**460**	----	----	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	5	mg/L		**29**	----	----	----	----
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		**162**	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L		**162**	----	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		**32**	----	----	----	----
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L		**26**	----	----	----	----
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		**74**	----	----	----	----
Magnesium	7439-95-4	1	mg/L		**6**	----	----	----	----
Sodium	7440-23-5	1	mg/L		**14**	----	----	----	----
Potassium	7440-09-7	1	mg/L		**1**	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.02**	----	----	----	----
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	----	----	----	----
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.65**	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.65**	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.1	----	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		**0.6**	----	----	----	----
EK067FG: Filtered Total Phosphorus as P by Discrete Analyser									
Filtered Total Phosphorus as P	----	0.01	mg/L		<0.01	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QQC1	----	----	----	----
				Sampling date / time	06-Dec-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2144989-001	--------	--------	--------	--------
					Result	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.01	----	----	----	----
EK071FG: Dissolved Reactive Phosphorus as P by DA									
Dissolved Reactive Phosphorus as P	----	0.01	mg/L		<0.01	----	----	----	----
EN055: Ionic Balance									
ø **Total Anions**	----	0.01	meq/L		**4.64**	----	----	----	----
ø **Total Cations**	----	0.01	meq/L		**4.82**	----	----	----	----
ø **Ionic Balance**	----	0.01	%		**1.95**	----	----	----	----
EP030: Biochemical Oxygen Demand (BOD)									
Biochemical Oxygen Demand	----	2	mg/L		<2	----	----	----	----

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Assessment Report

Dulverton Waste Management

Assessment dates	04/05/2022 (Please refer to Appendix for details)
Assessment Location(s)	Devonport, Latrobe Tasmania.
Report Author	Craig Hobbins
Assessment Standard(s)	ISO 14001:2015

Table of contents

Executive Summary

Based on the results of this audit, it has been determined that Dulverton Waste Management environmental management system implementation is ongoing and continues to achieve its intended outcomes. The audit objectives have been achieved. A recommendation for Continued Certification to ISO 14001:2015 is made.

I am pleased to report that system implementation and compliance was evident across all facets of the business examined. The areas assessed during the audit were found to be effectively managed and controlled. Waste management processes and environmental controls continue to be improved, with programs set and managed through the objective and target framework. Internal auditing and management review processes continue to be beneficial, and provide sound detail relating to waste processing risks and opportunities.

I would like to thank Abbie and Matt for their participation in the audit and for their assistance and cooperation.

Changes in the organization since last assessment

There is no significant change of the organization structure and key personnel involved in the audited management system.

No change in relation to the audited organization's activities, products or services covered by the scope of certification was identified.

There was no change to the reference or normative documents which is related to the scope of certification.

NCR summary

There were no outstanding nonconformities to review from previous assessments.

No new nonconformities were identified during the assessment. Enhanced detail relating to the overall assessment findings is contained within subsequent sections of the report.

Assessment objective, scope and criteria

The objective of the assessment was to conduct a surveillance assessment and look for positive evidence to ensure that elements of the scope of certification and the requirements of the management standard are effectively addressed by the organisation's management system and that the system is demonstrating the ability to support the achievement of statutory, regulatory and contractual requirements and the organisation's specified objectives, as applicable with regard to the scope of the management standard, and to confirm the on-going achievement and applicability of the forward strategic plan and where applicable to identify potential areas for improvement of the management system.

The scope of the assessment is the documented management system with relation to the requirements of ISO 14001:2018 and the defined assessment plan provided in terms of locations and areas of the system and organisation to be assessed.

Criteria:
* ISO 14001:2001.
* DWM Environmental Management System Manual 30th November 2021.

Statutory and regulatory requirements

No changes to statutory or regulatory requirements have occurred since the previous BSI Assessment. This includes requirements governed under the EPA Licences (Landfill 7158/3 and DORF 7852/1). Compliance monitoring processes, including site / infrastructure inspections, air and leachate testing and monitoring continue. The Compliance Register remains in place.

Processes are sound and meet requirements.

Assessment Participants

Name	Position	Opening Meeting	Closing Meeting	Interviewed (processes)
Abbie All	Environmental Administration Officer	X	X	X
Matt Layton	Operations and Project Officer	X	X	X

BSI assessment team

Name	Position
Craig Hobbins	Team Leader

Assessment conclusion and recommendation

The audit objectives have been achieved and the certificate scope remains appropriate. The audit team concludes based on the results of this audit that the organization does fulfil the standards and audit criteria identified within the audit report and it is deemed that the management system continues to achieve its intended outcomes.

RECOMMENDED - The audited organization can be recommended for continued certification to the above listed standards, and has been found in general compliance with the audit criteria as stated in the above-mentioned audit plan.

Use of certification documents, mark / logo or report

The use of the BSI certification documents and mark / logo is effectively controlled.

Findings from this assessment

General requirements, certification scope:

Dulverton Waste Management's Environmental Management System Manual 30th November 2021 and associated processes were used as a reference during this review. The management system and associated controls are implemented and maintained in accordance with the requirements of ISO 14001:2015.

This audit sampled environmental management system implementation within the processes covered under the scope of certification. Dulverton Waste Management takes a process approach in developing, maintaining and improving their environmental management system.

COVID-19 controls and processes developed to protect workers and visitors during the COVID-19 event were examined. All workers continue to work under flexible working arrangements, and are required to follow health directives associated with hygiene, isolation measures etc. This is continually monitored by the Management Team,

The scope of certification confirmed previous BSI assessments was again confirmed with no changes required as detailed below. Core business activities remain unchanged.

"For the management of a waste management facility comprising landfill and compost production operations".

Processes and documentation in place are sound and meet requirements.

Records sighted:

- Environmental Management System Manual 30th November 2021.
- Confirmed in interview with the Environmental Administration Officer.

Environmental management system and business improvements.

Environmental management system, general business and waste management improvements implemented since the previous BSI assessment are summarised as below.

- Construction for the compost facility upgrade is to commence in September 2022. Odour modelling assessments were conducted completed with containment plans developed for the new structures.
- Some changes in the waste products received have occurred. Dulverton is now accepting some low grade medical waste, being disposed as controlled waste.
- A process to reduce unloading risks has occurred which involved interested parties such as waste delivery companies.
- A specialist consultant was engaged to conduct a dial before you dig information session, focusing on hazards and risks associated with the leachate pipeline outside of the waste management site.
- A new vehicle wash down facility has been installed within the waste management facility.
- Final processing of compost is now conducted within an area that is segregated from the compost windrows. This has reduced contamination risks.
- A feasibility study reviewing the potential to generate electricity through the methane extraction / burning process is underway.

Review of previous findings.

There were no non-conformance issues raised during the previous BSI Assessment.

Policy:

Evidence to demonstrate the continued implementation of Dulverton Waste Management's environmental management policy statement was provided. Access to the policy is obtained through the intranet system. The policy is made available to interested parties on request.

Compliance with the requirements of the standards is sound.

Records sighted:

Records / documented information sighted:

* Environmental Policy (12/8/2020).

* Confirmed in interview with the Environmental Administration Officer.

Objectives and targets, environmental aspects and impacts:

Objectives and targets are relative to the operations and improvement strategies of Dulverton Waste Management. The Environmental Risk Register was sighted. Objectives and targets are set in conjunction with budgets, and set for each financial year. Current objectives are based around site improvements (odour modelling, dust reduction, improved leachate management, windblown litter reductions, and improved methane extraction though increases in gas well infrastructure). Once objects are achieved, they are signed off and placed within the Completed tab on the Register. Objectives and targets are examined during management review processes.

The Environmental Management Systems Aspects and Impacts Register was sighted. The register was recently reviewed and amended by the Board, with changes made to better reflect regulatory reporting requirements, as well as the Board's and general business's risk appetite. No changes to risk management models or assessment processes were made. Environmental aspects and impacts specific to the landfill, DORF, sites and projects also remain unchanged.

Compliance with the requirements of the standards is sound.

Record sighted:

- Environmental Management System Aspects and Impacts Register.
- Environmental Objectives Register.
- Management Review Minutes 26/10/2021.
- Confirmed in interview with the Environmental Administration Officer.

Internal audit and management review.

Internal audit procedures are in place and were confirmed. Audit results are documented, detailing a summary, issues and improvements detected, and actions to be taken. Any corrective action process required includes root cause analysis activities.

The Opportunity for Improvement raised during the previous BSI Recertification Assessment has been addressed. Audit plans and planning records give a clear indication of system aspects and the processes and infrastructure to be examined.

Records from the Internal Audit conducted on the 8th of September 2021 were sighted. The audit was conducted by an External Consultant. The report details the audit methodology, scope, summary and findings. The overall result of the audit was sound, with some low risk / improvement findings detected.

Internal auditing processes meet all requirements of the Standard.

Management reviews meetings are conducted in accordance with all requirements of the standard. This includes a review of system functionality and effectiveness, improvements, nonconformances and corrective actions, objectives and targets, audits result and overall environmental management system performance.

Compliance with the requirements of the standards is sound.

Documented information / records sighted:

- Internal audit plans and planning correspondence.
- Internal Audit Report 8th September 2021.
- Management Review Minutes 26th October 2021.
- Confirmed in interview with the Environmental Administration Officer.

Incident management, corrective action.

Incident management and corrective action process covering site and management system related non-conformities are in place. Reporting and investigation processes are conducted depending on the nature and risk of the issue. Records include detail on root causes and corrective action measures to be taken, detailed within the corresponding procedures. Customer / stakeholder complaints are treated using these processes.

The Environmental and General Corrective Action Register was sighted. The register includes detail regarding the incident / issue, action taken, root cause analysis and long-term action detail. The register contains tabs for open issues, closed issues, as well as issues from internal audits.

Processes in place are sound and meet requirements.

Records sighted:

- Environmental and General Corrective Action Register.
- Confirmed in interview with the Environmental Administration Officer.

Operation control, process management.

Environmental management controls were sampled within the waste management processes sites. Improvements to site management controls continue to be implemented.

The following infrastructure / processes were sighted and were confirmed to be conducted / managed in accordance with the requirements of the environmental management system and the standard.

- Site access and security infrastructure.
- Litter netting.
- Compost production and finalisation areas, including windrow marking signage.
- Weighbridge.
- Leachate ponds.
- Gas extraction infrastructure.
- Weed management and pest control processes confirmed.
- Spill kits.
- Firefighting equipment.
- Washdown bay.

Records and processes relating to any complaint about the client that has been referred to BSI:

No complaints regarding Dulverton Waste Management are known to have been directed to BSI by customers.

Next visit objectives, scope and criteria

The objective of the assessment is to conduct a surveillance assessment and look for positive evidence to ensure the elements of the scope of certification and the requirements of the management standard are effectively addressed by the organisation's management system and that the system is demonstrating the ability to support the achievement of statutory, regulatory and contractual requirements and the organisations specified objectives, as applicable with regard to the scope of the management standard, and to confirm the on-going achievement and applicability of the forward strategic plan.

The scope of the assessment is the documented management system with relation to the requirements of ISO 14001:2018 and the defined assessment plan provided in terms of locations and areas of the system and organisation to be assessed.

Criteria:

* ISO 14001:2001.

* DWM Environmental Management System Manual 30th November 2021.

Please note that BSI reserves the right to apply a charge equivalent to the full daily rate for cancellation of the visit by the organisation within 30 days of an agreed visit date.

Next Visit Plan

Plan to be provided by the BSI Assessor closer to the due date.

Appendix: Your certification structure & ongoing assessment programme

Scope of Certification

EMS 698108 (ISO 14001:2015)

For the management of a waste management facility comprising landfill and compost production operations.

Assessed location(s)

Devonport / EMS 698108 (ISO 14001:2015)

Location reference	**0047695802-000**
Address	Dulverton Waste Management Dulverton Landfill Level 1, 17 Fenton Way Devonport Tasmania 7310
Visit type	Continuing assessment (surveillance)
Assessment number	3382320
Assessment dates	04/05/2022
Deviation from Audit Plan	No
Total number of Employees	8
Effective number of Employees	6
Scope of activities at the site	For the management of a waste management facility comprising landfill and compost production operations.
Assessment duration	0.5 day(s)

Latrobe / EMS 698108 (ISO 14001:2015)

Location reference	**0047695802-001**
Address	Dulverton Waste Management 145 Dawson Siding Road Latrobe Tasmania 7307
Visit type	Continuing assessment (surveillance)
Assessment number	3383508
Assessment dates	04/05/2022
Deviation from Audit Plan	No
Total number of Employees	8
Effective number of Employees	6
Scope of activities at the site	For the management of a waste management facility comprising landfill and compost production operations.
Assessment duration	0.5 day(s)

Certification assessment program

Certificate Number - EMS 698108
Location reference - 0047695802-000

		Audit1	Audit2	Audit3
Business area/Location	**Date (mm/yy):**	05/21	05/22	05/23
	Duration (days):	1	1	1
Scope and Policy		X	X	X
Organisational context		X		X
Leadership and Commitment		X	X	X
Management System Support		X		X
Planning and Resources		X	X	
Human Resource Management			X	X
Control of Documents and Records		X		
Objectives / Aspects /Performance Monitoring & Measurement		X	X	X
Management Review		X	X	X
Internal Audits		X	X	X
Actions / Non-Conformity / Incidents / Complaints		X	X	X
Risk Management / Prevention		X	X	X
Legal and Other Requirements		X	X	X
Improvement		X	X	X
Operational Control		X	X	X

Expected outcomes for accredited certification.

What accredited management system certification means?

To achieve an organization's objectives related to the Expected Outcomes intended by the management systems standard, the accredited management system certification is expected to provide confidence that the organization has a management system that conforms to the applicable requirements of the specific ISO standard.

In particular, it is to be expected that the organization

• has a system which is appropriate for its organizational context and certification scope, a defined policy appropriate for the intent of the specific management system standard and to the nature, scale and impacts of its activities, products and services over their lifecycles, is addressing risks and opportunities associated with its context and objectives;
• analyses and understands customer needs and expectations, as well as the relevant statutory and

regulatory requirements related to its products, processes and services;
• ensures that product, process and service characteristics have been specified in order to meet customer and applicable statutory/regulatory requirements;
• has determined and is managing the processes needed to achieve the Expected Outcomes intended by the management system standard;
• has ensured the availability of resources necessary to support the operation and monitoring of these products, processes and services;
• monitors and controls the defined product process and service characteristics;
• aims to prevent nonconformities, and has systematic improvement processes in place including the addressing of complaints from interested parties;
• has implemented an effective internal audit and management review process;
• is monitoring, measuring, analysing, evaluating and improving the effectiveness of its management system and has implemented processes for communicating internally, as well as responding to and communicating with interested external parties.

What accredited management systems certification does not mean?

It is important to recognize that management system standards define requirements for an organization's management system, and not the specific performance criteria that are to be achieved (such as product or service standards, environmental performance criteria etc).

Accredited management systems certification should provide confidence in the organization's ability to meet its objectives related to the intent of the management system standard. A management systems audit is not a full legal compliance audit, and does not necessarily ensure ethical behaviour or that the organization will always achieve 100% conformity and legal compliance, though this should of course be a permanent goal.

Within its scope of certification, accredited management systems certification does not imply or ensure, for example:
• that the organization is providing a superior product and service, or
• that the organization's product and service itself is certified as meeting the requirements of an ISO (or any other) standard or specification.

Definitions of findings:

Non-conformity:

Non-fulfilment of a requirement.

Major nonconformity:

Nonconformity that affects the capability of the management system to achieve the intended results. Nonconformities could be classified as major in the following circumstances:
- If there is a significant doubt that effective process control is in place, or that products or services will meet specified requirements;
- A number of minor nonconformities associated with the same requirement or issue could demonstrate a systemic failure and thus constitute a major nonconformity.

Minor nonconformity:

Nonconformity that does not affect the capability of the management system to achieve the intended results.

Opportunity for improvement:
It is a statement of fact made by an assessor during an assessment, and substantiated by objective evidence, referring to a weakness or potential deficiency in a management system which if not improved may lead to nonconformity in the future. We may provide generic information about industrial best practices but no specific solution shall be provided as a part of an opportunity for improvement.

Observation:
It is ONLY applicable for those schemes which prohibit the certification body to issue an opportunity for improvement.
It is a statement of fact made by the assessor referring to a weakness or potential deficiency in a management system which, if not improved, may lead to a nonconformity in the future.

How to contact BSI

Visit the BSI Connect Portal, our web-based self-service tool to access all your BSI assessment and testing data at a time that's convenient to you. View future audit schedules, submit your corrective action plans and download your reports and Mark of Trust logos to promote your achievement. Plus, you can benchmark your performance using our dashboards to help with your continual improvement journey.

Should you wish to speak with BSI in relation to your certification, please contact your local BSI office – contact details available from the BSI website:
https://www.bsigroup.com/en-AU/contact-us/

Notes

This report and related documents are prepared for and only for BSI's client and for no other purpose. As such, BSI does not accept or assume any responsibility (legal or otherwise) or accept any liability for or in connection with any other purpose for which the Report may be used, or to any other person to whom the Report is shown or in to whose hands it may come, and no other persons shall be entitled to rely on the Report. If you wish to distribute copies of this report external to your organisation, then all pages must be included.

BSI, its staff and agents shall keep confidential all information relating to your organisation and shall not disclose any such information to any third party, except that in the public domain or required by law or relevant accreditation bodies. BSI staff, agents and accreditation bodies have signed individual confidentiality undertakings and will only receive confidential information on a 'need to know' basis.

This audit was conducted through document reviews, interviews and observation of activities. The audit method used was based on sampling the organization's activities and it was aimed to evaluate the fulfilment of the audited requirements of the relevant management system standard or other normative document and confirm the conformity and effectiveness of the management system and its continued relevance and applicability for the scope of certification.

As this audit was based on a sample of the organization's activities, the findings reported do not imply to include all issues within the system.

Regulatory compliance

BSI requires to be informed of all relevant regulatory non-compliance or incidents that require notification to any regulatory authority. Acceptance of this report by the client signifies that all such issues have been disclosed as part of the assessment process and agreement that any such non-compliance or incidents occurring after this visit will be notified to BSI as soon as practical after the event.

Certificate of Registration

ENVIRONMENTAL MANAGEMENT SYSTEM - ISO 14001:2015

This is to certify that:

Dulverton Waste Management
Dulverton Landfill
Level 1, 17 Fenton Way
Devonport TAS 7310

Holds Certificate Number: **EMS 698108**

and operates an Environmental Management System which complies with the requirements of ISO 14001:2015 for the following scope:

For the management of a waste management facility comprising landfill and compost production operations.

For and on behalf of BSI:

Marc Barnes, Managing Director, BSI Group ANZ

Original Registration Date: 2008-06-15
Latest Revision Date: 2021-08-04

Effective Date: 2021-07-04
Expiry Date: 2024-07-16

...making excellence a habit.™

Certificate No: **EMS 698108**

Location	Registered Activities
Dulverton Waste Management Dulverton Landfill Level 1, 17 Fenton Way Devonport TAS 7310	For the management of a waste management facility comprising landfill and compost production operations.
Dulverton Waste Management 145 Dawson Siding Road Latrobe TAS 7307	For the management of a waste management facility comprising landfill and compost production operations.

Original Registration Date: 2008-06-15

Effective Date: 2021-07-04

Latest Revision Date: 2021-08-04

Expiry Date: 2024-07-16