Operational Environmental Management Plan

Bettergrow Ravensworth Composting Facility

74 Lemington Road Ravensworth NSW

Revision History

Rev No.	Revision Date	Author / Position	Details	Authorised Name / Position
A	13/02/2023	J Blomberg Environmental Manager	Draft	
1	10/11/2023	J Blomberg Environmental Manager	For submission to DPE (conditions C1, C5-C7)	J Blomberg Environmental Manager
2	20/12/2023	J Blomberg Environmental Manager	Update Appendix E TMP as per DPE advice Update Appendix A with MOD 1 consolidated consent	J Blomberg Environmental Manager
3	27/08/2024	J Blomberg Environmental Manager	Review as per SSD-9418 condition C8(b) Update to align approvals, Figure 1 and Site Plan	J Blomberg Environmental Manager
4	1/10/2024	J Blomberg Environmental Manager	Review as per SSD-9418 condition C8(c) Minor changes to DPE/DPHI referencing Addition of new Section 10.4 Controlled Leachate Discharge Monitoring Update Appendix C and Appendix G	V Bendevski Environment and Regulatory Compliance
5	22/05/2025	J Blomberg Environmental Manager	Update Site Plan and Appendix C	V Bendevski Environment and Regulatory Compliance

Table of Contents

1 Introduction

1.1 Background

This Operational Environmental Management Plan (OEMP) has been prepared for the Bettergrow resource recovery facility (the Facility) located at 74 Lemington Road, Ravensworth NSW 2330 in accordance with State Significant Development 9418 (SSD-9418).

Bettergrow operates an outdoor windrow composting facility incorporating biosolids, garden organics and other waste materials as approved in Environment Protection Licence 7654 to produce a suitable compost product for mine site rehabilitation and agricultural uses. The premises is located on Lot 10 DP1204457 in the Singleton local government area.

Bettergrow are contracted by AGL Macquarie (the Landowner) to supply manufactured soil ameliorant and rehabilitation products for use, in part, for approved rehabilitation works at the AGL Macquarie sites such as Ravensworth Mine sites, Liddell Ash Dam, Liddell Power Station and Bayswater Power Station. Bettergrow also sell a portion of the composted material to third parties.

Consent for SSD-9418 was granted on 31 August 2022 by the Department of Planning and Environment (currently Department of Planning, Housing and Environment (DPHI) and permits the expansion of the existing resource recovery facility to process up to 200,000 tonnes per annum of organic material, including water drainage and leachate works, hardstand areas and associated infrastructure.

A modification to SSD-9418 was submitted to the Department on 17 August 2023 requesting the removal of the site weighbridge as this data is already captured on the incoming weighbridge dockets and for outgoing material on the loader or truck digital scales, and to also allow for greater flexibility in receiving new resource recovered materials onto site for the purpose of composting. This modification (MOD 1) was approved by the Department on 6 December 2023.

This OEMP will summarise the characteristics of the Facility, the location, operating hours, how waste, including host plant material (phylloxera), will be received, sorted and recovered, unloading of waste and loading of compost product, as well as mitigation and management measures for rejected loads of material and other environmental impacts associated with the operation of the development.

This OEMP has been prepared to satisfy the requirements of conditions C5, C6 and C7 of *Part C Environmental Management, Reporting and Auditing* in SSD-9418. Subsequently, this OEMP will also satisfy condition C1 and conditions under *Part B Specific Environmental Conditions*.

1.2 OEMP objectives

The objectives of this OEMP are to:

- Support operations of the Development in accordance with the conditions of consent;
- Ensure compliance with all relevant regulatory requirements;
- Minimise the environmental impacts of the Development during operations;
- Keep the community informed on the Facilities operations and environmental management;
- Maintain a high level of environmental performance through on-going training and inductions;
- Ensure the commitments made in the approval's documentation are fully implemented and/or complied with during operations; and

- Ensure the environmental risks associated with the operations of the Development are effectively managed.

1.3 Structure of this OEMP

This OEMP has been developed to provide a strategic framework for environmental management at Bettergrow's Ravensworth facility and to satisfy the requirements set out in SSD-9418 and includes information on the following:

- Section 2 – Environmental Management Framework
- Section 3 – Process Overview
- Section 4 – Implementation & Communication of the OEMP
- Section 5 – Identification & Management of Environmental Aspects
- Section 6 – Biosecurity Protocol
- Section 7 – Community
- Section 8 – Incident Management
- Section 9 – Compliance Management
- Section 10 – Monitoring & Reporting
- Section 11 – OEMP Updates

This OEMP outlines the environmental management strategies implemented by Bettergrow including organisational responsibilities, planning activities, procedures, processes, implementation and review. It is an integral component of the overall environmental management system for the Bettergrow Ravensworth composting facility.

The environmental management sub-plans have been developed as required by SSD-9418 and are included as Appendices to this OEPM as follows:

- Appendix A – Waste Management Plan
- Appendix B – Air Quality Management Plan
- Appendix C – Surface and Groundwater Management Plan
- Appendix D – Traffic Management Plan

Also included are:

- Appendix E – Site Emergency Plan
- Appendix F – Emergency Response Procedures
- Appendix G - Pollution Incident Response Management Plan
- Appendix H – Biosecurity Protocol Documents
- Appendix I – Example Monthly Site Inspection Record

1.4 Approval of this OEMP

The OEMP revision 1 was submitted to the Planning Secretary for approval on 10 November 2023 to satisfy condition C5 of SSD-9418. The Department provided approval on 21 December 2023.

Any subsequent versions of the OEMP will be submitted to the Planning Secretary for approval as per SSD-9418 condition C7.

2 Environmental Management Framework

2.1 Relevant legislation

Key environmental legislation relating to operations for the Facility includes:

- *Protection of the Environment Operations Act 1997*
- *Environmental Planning and Assessment Act 1979*
- *Waste Avoidance and Resource Recovery Act 2001*
- *Contaminated Land Management Act 2021*
- *Biosecurity Act 2015*
- *National Parks and Wildlife Act 1974*
- Protection of the Environment Operations (Waste) Regulation 2014

2.2 Key contact details

Table 1 lists the key contacts for the Facility.

Table 1 Bettergrow Ravensworth Facility Contact Details

Personnel & Position	Contact Details
Zac Rowlandson Bettergrow CEO	rowlandsonz@bettergrow.com.au 0411 729 732
Mark Waldron Operations Manager	waldronm@bettergrow.com.au 0435 402 885
Roger Crisp Biosolids Manager	crispr@bettergrow.com.au 0427 210 070
Todd Wurth Site Coordinator	wurtht@bettergrow.com.au 0467 019 670
Jacqueline Blomberg Environmental Manager	blombergj@borgs.com.au 0436 609 556

Table 2 lists the contact details for the regulatory authorities and the like that have an interest in the operations of the Facility.

Table 2 Regulatory Authority Contact Details

Regulatory Authority	Contact Details
Department of Planning, Housing and Infrastructure	info@planning.nsw.gov.au 1300 420 596
Department of Environment and Heritage	info@environment.nsw.gov.au 1300 361 967
Department of Primary Industries (for Phylloxera host plant material)	biosecurity@dpi.nsw.gov.au 1800 084 881
Environment Protection Authority	info@epa.nsw.gov.au 131 555
Singleton Council	council@singleton.nsw.gov.au 02 6578 7290

SafeWork NSW	13 10 50
Fire and Rescue NSW	02 6572 1495 (Singleton – on call) 02 6541 2846 (Muswellbrook – on call)
NSW Rural Fire Service (for bushfires)	1800 679 737
NSW Police and/or NSW Ambulance Service	000

2.3 Conditions of consent

The operations at Ravensworth are subject to the conditions contained in State Significant Development Consent 9418.

The specific requirement for a OEMP (*Schedule 2 Part C Environmental Management, Reporting and Auditing* conditions C5, C6 and C7) are detailed in **Table 3**.

Table 3 Development Consent Conditions

No.	Requirement	Document Reference
	Operational Environmental Management Plan	
C5	The Applicant must prepare an Operational Environmental Management Plan (OEMP) for the Development in accordance with the requirements of condition C1 and to the satisfaction of the Planning Secretary.	This Plan
C6	As part of the OEMP required under condition C5 of this consent, the Applicant must include the following:	
	(a) Describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the Development;	Section 4
	(b) Describe the procedures that would be implemented to: i. Keep the local community and relevant agencies informed about the operation and environmental performance of the Development; ii. Receive, handle, respond to, and record complaints; iii. Resolve any disputes that may arise; iv. Respond to any non-compliance; v. Respond to emergencies; and	Section 9 Section 6 Section6 Section 8 Appendix E & F
	(c) Include the following environmental management plans: i. Waste (condition B2) ii. Air Quality (condition B11) iii. Surface and Groundwater (condition B18) iv. Traffic (condition B22) v. Biosecurity (condition B 29)	 Appendix A Appendix B Appendix C Appendix D Appendix H

C7	The Applicant must:	Noted
	(a) Not commence operation until the OEMP is approved by the Planning Secretary; and	
	(b) Operate the Development in accordance with the OEMP approved by the Planning Secretary (and as revised and approved by the Planning Secretary from time to time).	
	ENVIRONMENTAL MANAGEMENT	
	Management Plan Requirements	
C1	Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:	This Plan
	(a) Details of baseline data;	N/A Will be included in sub-plans noted at C6(c) as required
	(b) Details of: (i) The relevant statutory requirements (including any relevant approval, licence or lease conditions); (ii) Any relevant limits or performance measures and criteria; and (iii) The specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of the Development or any management measures;	Section 2 Section 9 & Section 10
	(c) A description of the measures to be implemented to comply with the relevant statutory requirements, limits or performance measures and criteria;	Section 9 & Section 10
	(d) A program to monitor and report on the: (i) Impacts and environmental performance of the Development; and (ii) The effectiveness of the management measures set out pursuant to paragraph (c) above:	Section 9 & Section 10
	(e) A contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;	Section 8
	(f) A program to investigate and implement ways to improve the environmental performance of the development over time;	Section 10
	(g) A protocol for managing and reporting any: (i) Incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria); (ii) Complaint; and	Section 7 Section 8 Section 6 Section 8

	(iii) Failure to comply with statutory requirements; and	
	(h) A protocol for periodic review of the Plan.	Section 10
Note: The Planning Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.		

2.4 Development consent mitigation measures

Appendix 2 Applicants Management and Mitigation Measures to SSD-9418 details the reasonable and practical measures to avoid or minimise impacts to the environment that may arise as a result of the Development.

Measures addressing air quality, waste, surface and groundwater, traffic and biosecurity are included in the related sub-plans attached to this OEMP.

Measures addressing noise, Aboriginal and Historic heritage, hazards and risk, contamination and fire and incident management are included in this OEMP.

2.5 Environmental Protection Licence

Environment Protection Licence 7654 (EPL 7654) authorises the carrying out of the scheduled activity 'composting' at the Bettergrow Ravensworth facility in accordance with the licence requirements. EPL 7654 also includes the recovered waste types that are permissible to site. As the EPL does go through variations from time to time, it is recommended to check the electronic version found at Environment & Heritage | PRPOEO (nsw.gov.au)

3 Process Overview

Prior to accepting any waste on site, the Bettergrow Environmental Manager or delegate will review any Characterisation Reports (or similar) to ensure that the material complies with the description provided in section L3.1 of EPL 7654 and any contamination limits set in Regulatory documents including Resource Recovery Orders. Where material does not meet the characterisation requirements, it will not be accepted on site.

3.1 Weighing loads & data recording

All vehicles transporting material to the Facility for use in the composting process are required to be accompanied with a weighbridge docket which details the following:

- Date
- Vehicle registration
- Drivers signature
- Waste type
- Waste origin
- Waste quantity
- If the waste is transported from another waste facility, the name and address of that Facility and the code or number of any environment protection licence(s) for the supplier Facility

In the unlikely event a load arrives to the Facility without a weighbridge docket, the driver will be instructed to attend a public weighbridge before returning to site and unloading. The Site Coordinator or delegate will inspect the loads for obvious contamination. Contaminated loads will be rejected and instructed to leave the site without unloading. All rejected loads will be recorded on the Rejected Load Register.

See **Appendix A Waste Management Plan** for further information regarding details to be recorded for the tracking of materials being transported to and from the Facility.

Accepted vehicles are directed to the appropriate tipping area on the hardstand processing pad for unloading (see **Figure 1 Site Plan**). Once tipping is complete the vehicle will proceed to the truck wash area for cleaning before exiting the site. Where trucks are transporting material off site, the following is recorded by the Site Coordinator or delegate from either the loader bucket scales or truck scales:

- Waste quantity
- Waste type
- Waste stream (where waste is a rejected load)
- Date
- Vehicle registration number
- Drivers signature
- Name and address of where the material is transported to and the code or number of any environment protection licence number(s) for that place, if applicable

All delivery docket information is provided to the Bettergrow Administration Officer on a monthly basis for record keeping.

3.2 Tipping & inspection of waste

Waste materials to be accepted at the site are listed in SSD-9418 and EPL 7654. Note that as other recourse recovered materials become available for inclusion in composting, these will be brought onto site once approved by the EPA and listed on EPL 7654.

All material will initially be visually inspected prior to tipping for any obvious contaminants. Where contaminants are identified, the load will be rejected and turned away. Any rejected loads will be recorded on the Reject Loads Register including truck and supplier company details. The supplier will be contacted and advised of the contaminated load. Where no contaminants identified, the truck will be instructed to proceed to the load receival hardstand area.

The material will be inspected again by a Bettergrow employee who has been appropriately trained in identifying any hazardous or non-conforming waste including physical contaminants and asbestos as it is being tipped onto the hardstand. If contaminants are found the truck is to be reloaded and returned to the supplier. The supplier will be contacted and advised of the contaminated load and the load recorded on the Reject Loads Register.

3.3 Processing of conforming material

The Facility is designed and managed to be a high volume receival location that combines and processes organic and non-organic material in accordance with *Australian Standard 4454-2012 Composts, soil conditioners and mulches* (AS4454) into a high quality consistent composted product that is suitable for a range of end uses. As approved under SSD-9418 and EPL 7654, the Facility will process up to 200,000 tonnes per annum of organic material.

There are five key processes undertaken to ensure the integrity and safety of the process:

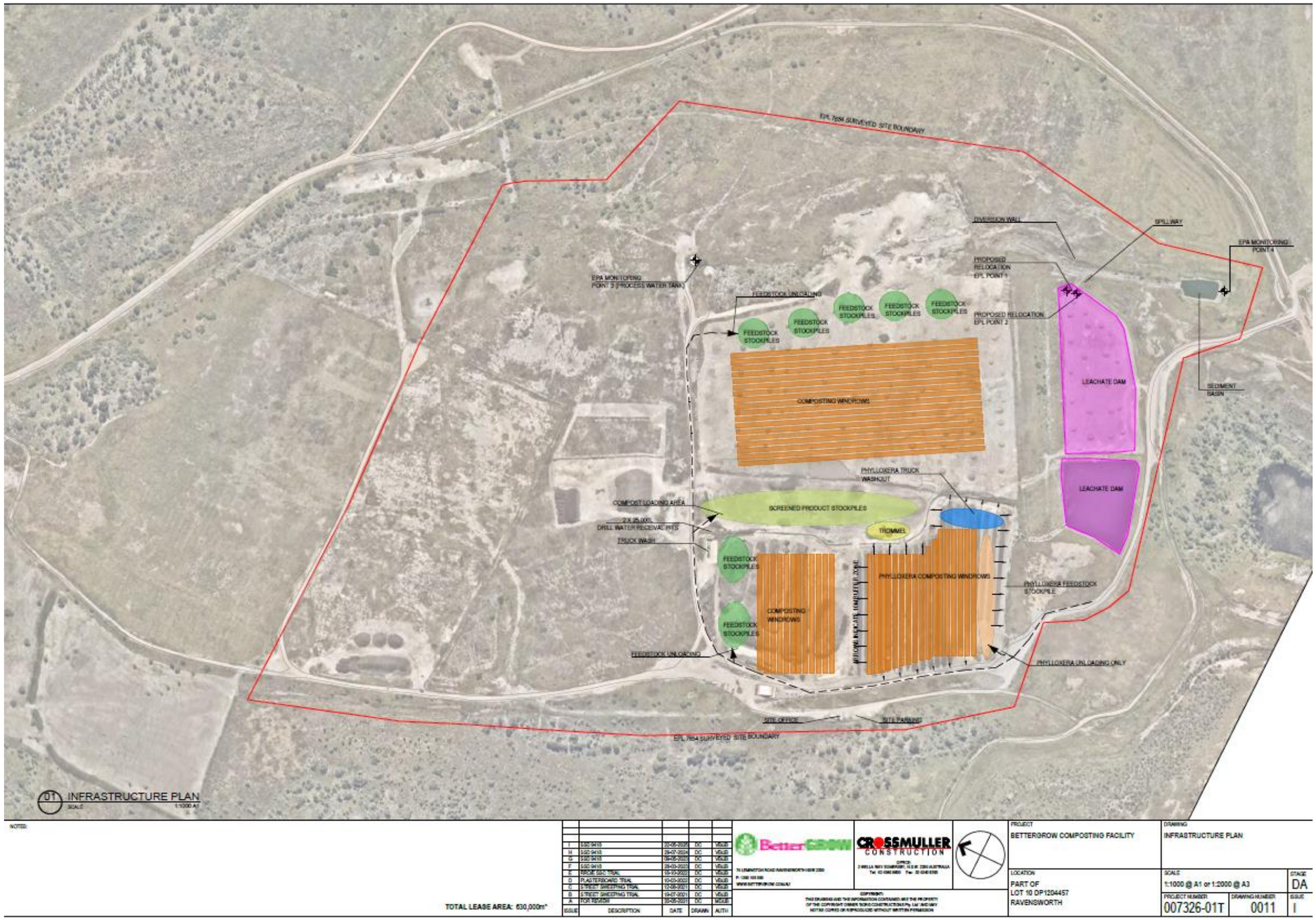
1. Raw product receival and verification
2. Agitation stockpile
3. Composting
4. Product testing and verification
5. Finished product grading and distribution

Materials received are to be stockpiled in their designated location and utilised as specified by the Biosolids Manager and in accordance with the Facilities *Compost Management Plan* to create a blend suitable for composting. The material is then incorporated into the agitation stockpile in accordance with Bettergrow *Standard Operating Procedure (SOP) Production of Biosolids Based Compost*. The agitation stockpile is repeatedly turned as it ages over a period of six months to ensure the uniformity of the product prior to being placed in windrows for the secondary aerobic phase of the composting process.

Once this preliminary phase of composting is complete, the material is laid out for open aerobic windrow composting for approximately eight weeks. Open windrow composting uses heat generated from microbial activity to reach pasteurising temperatures of above 55^0C to effectively kill weed seeds and at successively higher temperatures pathogenic bacteria and microorganisms are also destroyed. Each compositing windrow is assigned a unique identification or ‘batch’ number so that the pasteurisation/treatment of wastes can be effectively tracked.

After maturation of the compost has occurred (confirmed via NATA laboratory analysis in accordance with *AS 4454 Composts, soil conditioners and mulches* and *EPA Environmental Guidelines Use and Disposal of Biosolids Products*), the material is transferred to the cleared/unscreened compost product location identified in **Figure 1** for screening. Any immature compost, that is compost that still contain pathogens, will not be transferred to the cleared/unscreened compost product location until it is retested and cleared for pathogens.

Figure 1 Site Plan



3.4 Storage

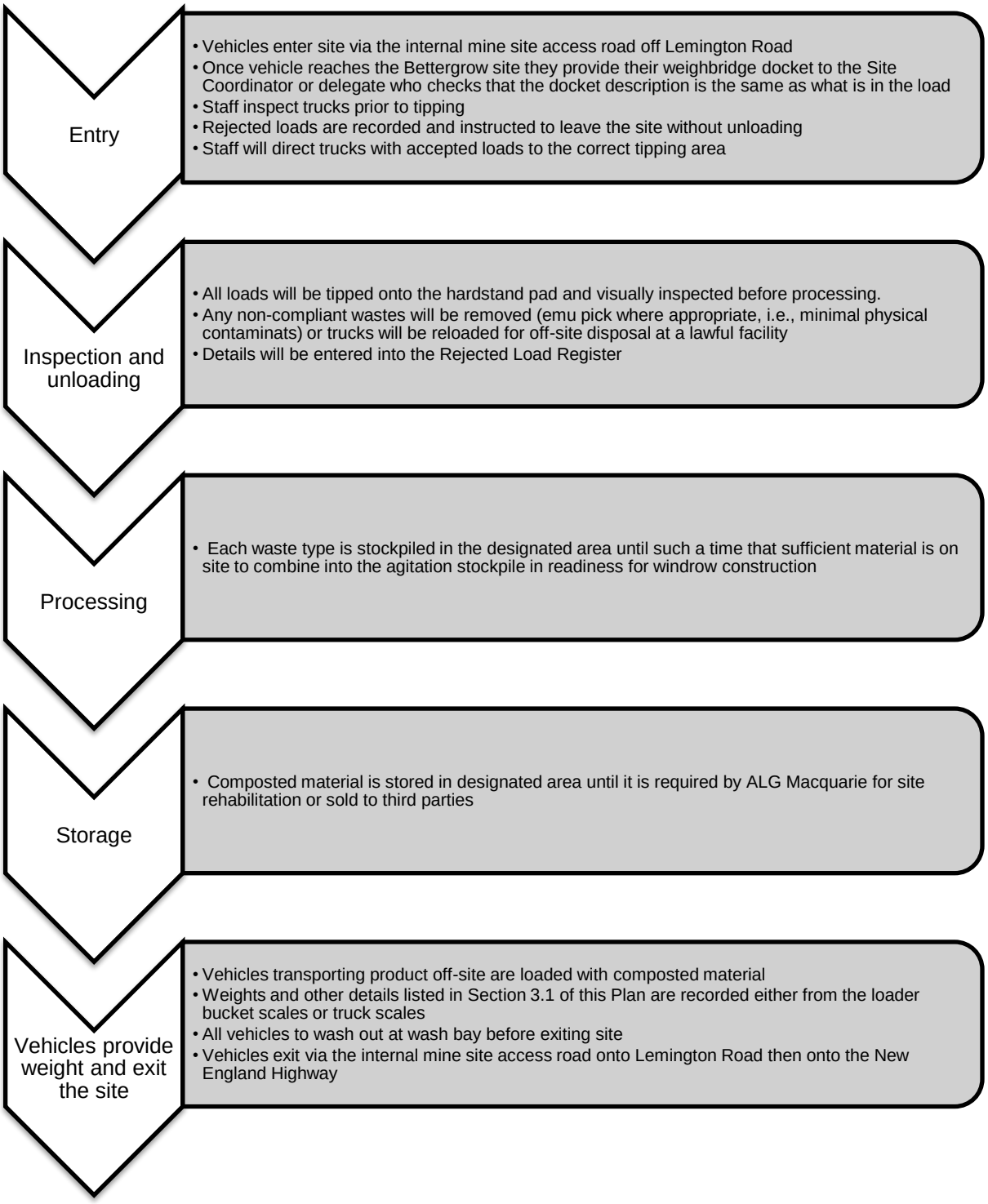
Each material type will have a designated tipping area on the hardstand pad shown in **Figure 1**. Material will remain at this area until such time as it is blended in the agitation stockpile in preparation for composting.

When the compositing process is complete, the material is screened and stockpiled in the area shown on **Figure 1** until such time that it is land applied to AGL Macquarie mine sites for the purpose of mine rehabilitation or sold to other third parties.

3.5 Loading & transfer of material off-site

It is intended that the final compost product will either be used for mine rehabilitation at AGL Macquarie sites such as Ravensworth Mine sites, Liddell Ash Dam, Liddell Power Station and Bayswater Power Station or sold to other third parties. All loads that leave the site will be tracked to the customer and details such as weight, product and location recorded on the sites delivery docket system as described in **Section 3.1**. All composted material will be received at the receiver site under the appropriate site-specific resource recovery exemption as issued by the NSW EPA. See **Figure 2** below for the process diagram.

Figure 2 Process flow chart for the operation of the Ravensworth compost facility



4 Implementation & Communication of the OEMP

The primary objective of implementing and communicating this OEMP is to ensure that the support processes are in place to manage environmental risk.

4.1 Roles, responsibilities & internal communication

The role, responsibility and accountability of all key personnel involved in the environmental management of the Facility is detailed in **Table 4**. This Table also shows the internal communication required to administer and maintain the OEMP.

Table 4 Roles, Responsibilities and Internal Communication

Role	Responsibility	Accountability & Internal Communication
Bettergrow Managing Director/CEO	Establish environmental policy that forms part of the organisations culture, values, performance standards and corporate citizenship	Communicate environmental responsibility throughout the organisation Promote environmental policy Communicates with Operations Manager, Biosolids Manager and Environmental Manager
Bettergrow Operations Manager	Overall environmental performance of the Facility	Reports to Managing Director/CEO Ensure adequate resources are available to implement the OEMP Notification of pollution incidents or material harm to Environmental Manager or Regulator Communicates with Site Coordinator, Environmental Manager and Biosolids Manager
Bettergrow Site Coordinator	Overall day to day management of the Facility Ensuring all employees are aware of their environmental responsibilities including incident reporting	Reports to Operations Manager Implementation of OEMP and sub-plans Report all environmental incidents to Environmental Manager Communicates with Operational staff
Bettergrow Environmental Manager	Oversee environmental performance of the operation and compliance with legislative and regulatory requirements	Reports to Managing Director/CEO and Operations Manager Environmental reporting, monitoring, auditing, incident investigation, performance against OEPM and complaints handling

		Identify corrective actions from incidents, site inspections or other environmental surveillance Review and update environmental management plans Communicates with Site Coordinator and Operations Manager
Biosolids Manager	Provides advice on the composting process including specification and land application Manage the delivery of the various organic service and compliance with contract requirements	Reports to Managing Director/CEO Notifies Operations Manager of any deficiencies or potential problems with site procedures Communicates with Operations Manager, Site Coordinator and Environmental Manager
Operation Staff	Manage operations in an environmentally responsible manner and report any incidents or take action to minimise impacts from site operations	Report all environmental incidents immediately after becoming aware of it to Site Coordinator or Operations Manager Undertake environmental training through Toolbox Talks Communicates with Site Coordinator and Operations Manager

4.2 Roles, responsibilities & external communication

All external communication will be undertaken in accordance with corporate protocols on communications with external stakeholders and the media.

The minimum external communications required to administer and maintain the OEMP and personnel responsible for the communication is outlined in **Table 5**.

Table 5 Roles, Responsibilities & External Communication

Role	Responsibility	Method of Communication
Bettergrow Managing Director/CEO	Media response/release	Telephone, email, letter, company website Media release
Bettergrow Operations Manager	Notification to Regulator of pollution incident Notification to stakeholder of pollution incident (as required) Response to community complaints	As per PIRMP Telephone, email, letter

Bettergrow Environmental Manager	Notification to regulator of pollution incident EPL monitoring data (as required) Independent Environmental Audit Response to community complaint	Telephone, email, letter Report Company website Major Projects Portal

4.3 Training & awareness

Bettergrow Management will ensure that all employees and contractors involved with the operations of the Facility are suitably inducted and trained prior to commencing any work on site. Training in relation to environmental responsibilities and implementation of this OEMP will take place initially through a site induction and then on an on-going basis through toolbox talks.

4.3.1 General site induction

All personnel will undertake a compulsory site induction prior to commencing work on site. The site induction will include an environmental component which will address the following as a minimum:

- Relevant details of the Facility OEMP including purpose and objectives
- Key environmental issues
- Environmental licenses, permits and approval conditions
- Relevant legislation
- Environmental management requirements and responsibilities
- Mitigation measures for the control of environmental issues
- Environmental incident response and reporting requirements
- Information relating to the location of environmental constraints
- Environmental personnel and key contacts
- Appropriate response and management of complaints received from the public, government agencies or other stakeholders in accordance with the protocol
- Appropriate response and management of environmental incidents in accordance with the strategy

4.3.2 Works specific induction

The induction is general training that incorporates the environmental and WHS requirements for the site. All personnel including contractor personnel are required to undertake this training. The induction training is delivered via the Bettergrow online platform and facilitated by the Site Coordinator with the assistance of the Environmental Manager and/or the WHS Coordinator.

The induction is to include but not be limited to:

- Safety and operating procedures and the correct identification of environmental hazardous or other prohibited waste including asbestos
- Correct operation of plant and equipment
- Identification of approved waste streams for inclusion in compost
- Incident and emergency response procedures
- Reporting requirements
- Pollution Incident Response Management Plan

In addition to the Bettergrow induction, there is an AGL Macquarie induction requirement as the landowner. The Site Coordinator will manage all AGL inductions.

4.3.3 Toolbox talks

All personnel will attend toolbox talks on a daily basis at pre-start meetings. Toolbox talks may include, but not limited to:

- Noise and dust control
- Erosion and sediment control
- Water management
- Leachate management
- Biosecurity/Phylloxera management
- Operation hours
- Waste management including the identification of any hazardous waste or asbestos
- Spill control
- Environmental incidents
- Predicted weather and associated hazards (e.g., flooding, high winds, bushfire)

4.4 Training records

Records of all training will be recorded and maintained and will include information on:

- Who was trained
- When the person was trained
- The name of the trainer
- A general description of the training content

Training records for the Facility will be stored on the electronic management system DataStation.

4.5 Training review

The ongoing competency and training requirements will be reviewed on a routine basis depending on staffing and current operations at the site. Potential triggers for a review of training methodology under this OEMP include:

- Changes in procedures
- Changes in regulations
- Incidents
- Equipment upgrades or changes in equipment
- Errors or deficiencies in job performance
- Errors in data reporting

5 Identification & Management of Environmental Aspects

Operations at the Facility have the potential to cause environmental impacts. The aspects, impacts, mitigation and management measures for waste, air quality, surface and groundwater and traffic are addressed in sub-plans at **Appendices A through D** attached to this OEMP. Addressed in this section of the OEMP is noise, emergency response, hazards and risks associated with dangerous goods, visual amenity, pest, vermin and priority weed management and Aboriginal and Historic heritage.

5.1 Noise

The noise assessment conducted for the EIS (2019) determined there will be no operational noise impacts for the Development and so no specific noise mitigation or monitoring is proposed however, as part of the Facilities induction all employees and contractors will be made aware of the following:

- Relevant licence and approval conditions including permissible hours of work (See **Table 5** and **Table 6** below)
- Location of the nearest sensitive receiver (See **Figure 3**)
- Designated loading/unloading areas (see **Figure 1**) and procedures
- Site opening/closing times, including deliveries (See **Table 5**)

Table 5 Hours of work

Activity	Day	Time
Operation	Monday – Saturday Sunday Public Holidays	6am to 6pm Nil Nil
Deliveries	Monday – Friday Saturday – Sunday Public Holidays	6:30am to 5pm Nil Nil

Works outside of the hours identified in **Table 5** may be undertaken in the following circumstances:

a) Works that are inaudible at the nearest sensitive receivers;

b) For the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or

c) Where it is required in an emergency to avoid the loss of lives, property of to prevent environmental harm.

Noise generated by the operation of the development must not exceed the noise limits in **Table 6**.

Table 6 Operational noise limits

Location	Day $L_{Aeq\ (15\ minute)}$	Evening $L_{Aeq\ (15\ minute)}$	Night $L_{Aeq\ (15\ minute)}$
Camberwell	40	35	35

As can be seen in **Figure 3**, Camberwell is over 5km from site and therefore noise nuisance is not expected from the Development.

Figure 3 Location of Facility and nearest sensitive receiver

5.2 Emergency response

Developed for the Facility is a site-specific Site Emergency Plan and an Emergency Response Procedure flipchart. These have been attached to this OEMP at **Appendix E** and **Appendix F**. These Appendices include for bushfire and Facility fire management.

The Pollution Incident Response Management Plan (PIRMP) includes information and response requirements where an emergency response is required for a pollution incident. See **Appendix G** for the PIRMP.

5.3 Hazards & risks

The quantities of dangerous goods that will be stored and handled on site will be below the threshold quantities listed in the Department's *Hazardous and Offensive Development Application Guidelines – Applying SEPP 33* at all times. See **Figure 4** for the general screening threshold limits as described in the *Guidelines*.

All chemicals, fuels and oils held on site will be stored according to its Safety Data Sheet, Australian Standard AS1940-2017 *The storage and handling of flammable and combustible liquids* and in accordance with the NSW EPA's *Storing and Handling of Liquids: Environmental Protection – Participants Manual*. All chemicals etc. will be stored inside the site's workshop in an impervious bunded area with sufficient capacity to contain 110% of the largest vessel.

Bettergrow use ChemAlert to manage the storage and use of chemicals on site. This allows for tracking of quantities and appropriate PPE and first aid items to be available. ChemAlert also includes information on the safe handling, emergency response, spillage control, waste disposal and environmental considerations.

Figure 4 General Screening Threshold Quantities

Class	Screening Threshold	Description
1.2	5 tonne	or are located within 100 m of a residential area
1.3	10 tonne	or are located within 100 m of a residential area
2.1	(LPG only — not including automotive retail outlets[1])	
	10 tonne or16 m^3	if stored above ground
	40 tonne or 64 m^3	if stored underground or mounded
2.3	5 tonne	anhydrous ammonia, kept in the same manner as for liquefied flammable gases and not kept for sale
	1 tonne	chlorine and sulfur dioxide stored as liquefied gas in containers <100 kg
	2.5 tonne	chlorine and sulphur dioxide stored as liquefied gas in containers >100 kg
	100 kg	liquefied gas kept in or on premises
	100 kg	other poisonous gases
4.1	5 tonne	
4.2	1 tonne	
4.3	1 tonne	
5.1	25 tonne	ammonium nitrate — high density fertiliser grade, kept on land zoned rural where rural industry is carried out, if the depot is at least 50 metres from the site boundary
	5 tonne	ammonium nitrate — elsewhere
	2.5 tonne	dry pool chlorine — if at a dedicated
		pool supply shop, in containers <30 kg
	1 tonne	dry pool chlorine — if at a dedicated pool supply shop, in containers >30 kg
	5 tonne	any other class 5.1
5.2	10 tonne	
6.1	0.5 tonne	packing group I
	2.5 tonne	packing groups II and III
6.2	0.5 tonne	includes clinical waste
7	all	should demonstrate compliance with Australian codes
8	5 tonne	packing group I
	25 tonne	packing group II
	50 tonne	packing group III

5.4 Visual amenity

Although it is highly unlikely that any lighting associated with the development would negatively impact on any sensitive receivers or the public road network given the proximity to the Facility (see **Figure 3**), as per SSD 9418 condition of consent B38, Bettergrow will ensure that:

a) any lighting associated with the Facility will comply with the latest version of AS 4282-2019 – *Control of the obtrusive effects of outdoor lighting* (Standards Australia, 2019); and

b) is mounted, screeded and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network.

5.5 Pest, vermin & weed management

As part of the 2019 EIS, a biodiversity assessment was undertaken which concluded the presence of weeds in the form of exotic grasses over part of the subject site and though not sighted, the potential for the presence of feral animals. This assessment did not identify any declared priority weeds at the site.

The weeds that were identified in the 2019 assessment were in SSD-9418 development footprint and therefore have been removed as part of earthworks. Vegetation management is undertaken at the Facilities boundary to ensure no encroachment onto the hardstand pad area to manage the potential for any cross contamination of feedstock or composted material, to reduce the risk of the presence of snakes in the work area and also as a bushfire management strategy.

Regarding the presence of feral animals, although the biodiversity assessment concluded that there is the potential for the presence of these animals, site personnel have stated that they rarely sight any pests or vermin at the Facility. Regardless, all waste receptacles are covered at all times and general housekeeping maintained to discourage any pests or vermin on the site.

5.6 Aboriginal & Historic heritage

All staff will be made aware of their statutory obligations for heritage under the *National Parks and Wildlife Act 1974* and the *Heritage Act 1977* during their induction.

As the Facility sits within a highly disturbed area it would be very unlikely for any Aboriginal or Historic relics to be uncovered. Regardless, in the event that objects including skeletal remains are identified, the area will be immediately cordoned off and the Site Coordinator or Operations Manager notified.

Where objects are thought to be of Aboriginal origin, the Site Coordinator or Operations Manager are to notify Heritage NSW via the Environment Line 131 555 and receive instruction. If remains are identified as Aboriginal, a management plan will be developed in consultation with the relevant Aboriginal stakeholders before works recommence.

Where objects are thought to be human skeletal remains, the Site Coordinator or Operations Manager are to contact the local NSW Police who will make an assessment as to whether or not the remains are human.

6 Biosecurity Protocol

Condition B29 of SSD-9418 states the following:

> *Prior to the commencement of operation of the development, the Applicant must prepare a Biosecurity Protocol, detailing the procedures for a biosecurity emergency, to the satisfaction of the Planning Secretary. The protocol must form part of the OEMP required by condition C5 and must:*
>
> *a) Describe the notification procedures;*
> *b) Detail the measures to maintain quarantine control;*
> *c) Detail measure to prevent groundwater contamination; and*
> *d) Detail the disposal procedures and options.*

The following sections address the requirements of condition B29.

6.1 Management of Host Plant Material

The general biosecurity duty applies to the Bettergrow Ravensworth site due to the receival of potentially phylloxera impacted material, being green waste coming from the Sydney basin phylloxera infested zone shown in **Figure 2** below.

Composting phylloxera impacted material is considered appropriate treatment by the NSW Department of Primary Industries for this insect due to the temperatures reached during composting which effectively kills the insect.

A vegetation-free buffer zone will be maintained on and around the phylloxera hardstand pads, such that no vegetation is allowed to grow in close proximity to the designated phylloxera areas for unloading, mixing, composting or soil blending. A minimum 10 meter buffer distance will be maintained between any material on the pads and the edge of the respective hardstand pad at all times, including raw wastes and the compost windrows. This is shown in **Figure 1** within this OEMP.

All trucks transporting host plant material either as incoming feedstock or outgoing composted material will be accompanied with a Plant Health Assurance Certificate (PHAC), Part A for incoming and Part B for outgoing. Each truck will also contain items (i.e. shovel and broom for use in the event of an accident which results in spillage of said material) as well as the Emergency Procedure – Spill Response for Truck Drivers (see **Appendix H**).

The hardstand pad where the host plant material will be received and composted has been created to design specification. The pad has been compacted to achieve a permeability of less than 10-9 ms-1. This will ensure that there will be no impact to groundwater.

6.2 Receiving Host Plant Material

When waste delivery trucks transporting host plant material arrive at the Site, they will report to the site office upon entry to the site. The Facility employee manning the site office must ensure that all necessary documentation (i.e., filled in PHAC) is inspected and exchanged regarding the waste load including completing Record of Receipt of Host Plant Material (see **Appendix H**) and retaining a copy of the PHAC for any incoming host plant material. A PHAC original must be provided for each load of host plant material. Note that a PHAC is also required for any finished composted material that

contains host plant material when it is transported off site to either AGL mine rehabilitation sites or sold to third party customers. This will provide a record that all wastes that are composted at the Facility are subjected to the necessary pasteurisation requirements. A worked example of a PHAC is provided within **Appendix H.**

The description of the waste on any documentation must be consistent with the waste acceptance criteria for the Facility as approved by the EPA. Refer to the most current version of EPL 7654 for an accurate description. Directions must be given to the waste delivery driver to the appropriate hardstand pad for unloading as shown in **Figure 1**.

The Facility employee supervising unloading must direct the waste delivery driver to the designated unloading area of the respective hardstand pad and give any additional unloading instructions required. During unloading the load must be inspected to ensure that prohibited wastes, wastes which Bettergrow is not approved to receive, are not contained within the load. If prohibited waste is discovered during unloading, the waste must be reloaded into the waste delivery vehicle and transported (at the Transporter/Supplier's expense) to an alternative facility that can lawfully accept such waste.

The host plant material will be combined with biosolids and other feedstock materials and laid in windrows for composting. These windrows will be subject to pasteurisation in accordance with the requirements of CA-05 and AS4454. Where the appropriate temperatures are not reached (i.e. above 55°C) for the required period of time (i.e. 3 consecutive days), the material will remain in the windrows until such time that pasteurisation has been achieved to ensure weed seeds, pathogenic bacteria and microorganisms are destroyed.

6.3 Cross-contamination prevention & washdown

Employees must be aware that cross-contamination is the process by which contaminated material is unintentionally transferred from raw wastes or unpasteurised material to material which has progressed further along in the composting cycle and/or finished compost.

This occurs at composting facilities through two key mechanisms:

- raw wastes or unpasteurised material is transferred to mature composting material or finished compost in stormwater flows; and
- the use of vehicles, containers, plant and equipment contaminated with raw wastes or unpasteurised material to manage more mature composting material or finished compost without being cleaned down between uses.

Windrows must be positioned parallel to the gradient of the hardstand surface. Windrows or stockpiled material must not be positioned such that stormwater is retarded and misdirected. Further information on stormwater and leachate runoff management can be found in the site **Surface and Groundwater Management Plan (Appendix C)**.

Raw host plant material must not be added to windrows that are effectively being pasteurised or have been determined as being pasteurised.

To prevent cross-contamination, vehicles, containers, plant and equipment (including monitoring equipment) should be used to manage, move or monitor the finished compost first and then moving from the most mature to the least mature composting material. However, if the vehicle/container/plant/equipment is needed to manage raw wastes or unpasteurised compost before

more mature composting material or finished compost then the said plant or equipment must be thoroughly washed down and made free of soil and plant material between uses.

If cross-contamination does occur the contaminated material must be reclassified as raw material and constructed into a newly formed windrow(s) and subject to pasteurisation again from the start.

All trucks delivering material to the facility after unloading the material in the designated location will wash out residual waste from inside their bins and if present from the outside of vehicle at the designated wash-down bay located on the hardstand pad prior to exiting the facility. Trucks that have transported host plant material from the PIZ will be required to wash-down the outside of their trucks, containers, wheels and undercarriage etc. at the same location as where the wash-out of the container occurred. This is to stop the potential for loose host plant material being spread during transport.

Wash-down waters that have seeped through the bed of green waste must be directed to the leachate basin or be soaked up with green waste. The exterior of the truck must be washed down with a high-pressure cleaner, with particular attention being afforded to the wheel guards, the underneath and upper body of the vehicle where waste may have spilt or splashed onto the external surface. Once the truck has been inspected and made free of plant material and soil it can exit the hardstand pad and leave the facility via the same route that it entered.

To assist in mitigating against cross-contamination of host plant material and non-host plant material, a separate receival, windrow and wash-out area has been prepared and is shown in **Figure 1**.

6.4 Notification Protocol

Although a highly unlikely scenario, in the event of a discharge of host plant material from site the Site Supervisor or Operations Manager will contact the Department of Primary Industries (1800 084 881), NSW EPA (131 555) to notify and seek any advice as required. As this would constitute an environmental incident, the Planning Secretary would also be notified as per condition C10 of SSD-9418.

This is a highly unlikely scenario as the area designated for delivery and compost of host plant material, and host plant material wash down are clearly identified in **Figure 1** and is communicated to truck drivers.

In the event of a truck accident/roll over during transport of host plant material, the Transport Driver will immediately contact the Transport Coordinator (i.e. Borg Logistics) and Department of Primary Industries (1800 084 881).

Figure 5 Sydney Phylloxera Infested Zone (PIZ)

Source: Sydney Basin Phylloxera Infested Zone (Department of Primary Industries, 2006)

7 Community Enquiries & Complaints

Bettergrow is responsible for ensuring that there is a mechanism in place to keep the community updated on the Development and appropriate management response and handling procedures are instigated and carried through in the event of a complaint. All employees and contractors who receive and enquiry of complaint, either verbal or written, are to immediately notify Site Management.

Community enquiries or complaints relating to the Facility can be received via:

- Bettergrow Head Office – 1300 105 500;
- Bettergrow website – www.bettergrow.com.au/contact; and/or
- Through a government agency (i.e., Council, DPHI or EPA).

7.1 Enquiry & complaints handling process

Bettergrow's community and stakeholder management system includes procedures for recording, investigating, tracking and handling of all inquiries and complaints.

Once Bettergrow has received verbal or written enquiry and/or complaint via telephone, email or post, the Environment Manager or their nominated delegate will:

- undertake an immediate investigation into the nature/cause of the enquiry and/or complaint;
- make initial contact with the community or stakeholder representative within 48 hours to clarify the reason for the enquiry and/or complaint and to notify of the investigation process including an appropriate re-notification time;
- record the enquiry and/or complaint on the Community Complaints register. This register includes the following details:
    - Complaint date and time;
    - Site;
    - Title (i.e., complaint or enquiry);
    - Category;
    - Description;
    - Complainant details if provided, if not a note saying so;
    - Action;
    - Status;
    - Follow-up;
    - Complaint validity; and
    - Attachments.
- further investigate the enquiry and/or complaint and provide the community or stakeholder representative with an explanation of the cause and details of any actions taken to mitigate its effect where applicable.

Records of complaints will be maintained in the complaints register database for at least four years after the complaint was made.

7.2 Preventative action

For complaints, once the complaint has been suitably handled, appropriate preventative measures will be identified and implemented to negate the possibility of re-occurrence.

7.3 Dispute resolution

In the event a dispute arises between Bettergrow, Singleton Council or public authority in relation to a condition of SSD-9418 or relevant matter relating to the site, either party may refer to matter to DPHI for resolution. The Planning Secretary's determination of any such dispute will be final and binding on the parties.

In the case of a dispute between Bettergrow and a community member, either party may refer the matter to the relevant regulatory authority for consideration, advice and/or negotiation. If the matter escalates, a third-party mediator may be required.

8 Incident Management

An environmental incident management strategy has been developed to ensure that any environmental incident caused by or related to the operations of the Facility are effectively responded to, and any resulting adverse environmental and/or community impact is promptly prevented or effectively managed.

The following procedure is for general environmental incidents that have the potential to cause material harm to the environment. Material harm is harm that:

a) Involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial; or

b) Results in actual or potential loss of property damage of an amount, or amounts in aggregate, exceeding $10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment).

Upon becoming aware of an environmental incident, Site Management will undertake the actions listed in the following subsections.

8.1 Preventative action

Where possible and if it is safe to do so, immediate action should be taken to prevent, stop, contain and/or minimise the environmental impact of the incident. This may include:

- Making all efforts to control air pollutions (dust, odour) from the Facility
- Making all efforts to contain any discharge, spill or run-off from the Facility
- Making all efforts to ensure no non-conforming material is received at the Facility
- Ensure safeguards are in place to manage phylloxera (host) plant material

In the unlikely event that a pollution incident requires the evacuation of the site, actions will be competed in accordance with the Facility Pollution Incident Response Management Plan (**Appendix G)** and Site Emergency Plan (**Appendix E**). All employees and contractors will be informed of the location of emergency assembly areas through site inductions, signage and toolbox talks.

8.2 Notify

Under the provisions of the POEO Act, there is a duty to notify any incident that has caused or threatens to cause material harm to the environment, including providing all relevant information about the incident. This duty extends to the following:

- A person engaged as an employee or contractor must, immediately after becoming aware of the incident, notify the employer of the incident and all relevant information. If the employer cannot be contacted, the person is required to notify each relevant authority and provide all relevant information; and
- An employer who is notified of an incident or who otherwise becomes aware of an incident must, immediately after becoming aware of the incident, notify each relevant authority and provide all relevant information.

Under the POEO Act, the “relevant authority” means any of the following:

- The appropriate regulatory authority:
    - If the NSW EPA is not the appropriate regulatory authority – the NSW EPA
    - If the EPA is the appropriate regulatory authority – the local authority for the area in which the pollution incident occurs (i.e., Singleton Council)
- NSW Health
- SafeWork NSW
- Fire and Rescue NSW

Relevant contact details are listed in **Table 7** for the regulatory authorities that have an interest in the Facility.

Table 7 Incident Contacts

Agency/Authority	Contact Number
NSW Police	000
NSW Ambulance Service	000
NSW Fire and Rescue	02 6572 1495 (Singleton – on call) 02 6541 2846 (Muswellbrook – on call)
NSW EPA Environment Line	131 555
Department of Primary Industries (for Phylloxera plant host material)	1800 084 881
SafeWork NSW	131 050
Singleton Council	02 6578 7290

In accordance with Condition C10 of SSD-9418, immediately after becoming aware of an incident that threatens to cause or does cause material harm to the environment the Planning Secretary must be notified in writing via the Department's Major Projects portal.

A further detailed report shall be prepared and submitted following investigations of the causes and identification of necessary additional preventive measures. That report must be submitted to the Planning Secretary via the Major Projects portal no later than 7 days after the incident or potential incident.

Under EPL 7654 condition R2, the EPA will also be notified of any environmental incident by initially telephoning the Environment Line service as listed in **Table 7**. The Environmental Manager will provide written details of the notification to the EPA within 7 days from the date on which the incident occurred.

In the event of a serious incident or emergency, it is more than likely that Fire and Rescue NSW and/or EPA will take control and manage the required investigation and remedial activities. Any instructions issued by these authorities must be strictly adhered to by Facility Management and personnel.

8.3 Investigation

Undertake immediate investigation work to determine the cause of the incident. This could involve a field investigation where the incident is site activity related or in the event a rejected load of waste (contaminated waste) has been accepted to site, investigation with the waste generator as to the reason why the material has been transported to the Facility.

8.4 Remedial action

Undertake appropriate remedial activities to address the cause of the incident and mitigate any further environmental impact. In some instances, outside resources such as specialist contractors/consultants may be required.

Remedial action may include:

- Remediate and rehabilitate any exposed areas of soil and/or waste;
- Monitoring surface water leaving the premises; or
- Removal of contaminate waste by an appropriately licenced waste contractor to an appropriately licenced waste facility.

8.5 Record

An assessment of the incident will be conducted and documented to minimise the potential for similar events in the future. Every environmental incident will be recorded in DataStation, Bettergrow's electronic recording system. If the system is unavailable, then the incident will be recorded on Bettergrow's Incident Register and transferred to DataStation when it becomes available.

DataStation will be maintained by the Operations Manager or Site Coordinator with assistance from the Environmental Manager and WHS Coordinator. This register shall be made available for inspection at any time to the Department and EPA.

8.6 Review

In the instance an incident report is submitted, this incident management strategy will be reviewed as outlined under **Section 10** of this OEMP.

9 Compliance Management

9.1 Compliance tracking

Bettergrow has developed a Compliance Tracking Register which includes for all conditions of consent under SSD-9418 and EPL 7654. This is managed by the Environmental Manager in consultation with the Operations Manager and Bettergrow CEO.

9.2 Non-compliances

9.2.1 Identification

Non-compliances may be identified in a number of ways, including but not limited to:

- Through routine management of the Facility
- During targeted monitoring undertaken at the Facility
- During the preparation of or during an audit of the Facility
- Through additional site inspections undertaken by the Operations Manager, Site Coordinator or Environmental Manager
- Following a request for information from a government authority (e.g., EPA, DPHI)

9.2.2 Response

The Operations Manager should be contacted immediately following the identification of a non-compliance or potential non-compliance. In the event the Operations Manager cannot be contacted, the Environmental Manager should be contacted. The Operations Manager/Environmental Manager will be responsible for investigating the cause of the non-compliance and determine whether additional site management/mitigation measures need to be applied to address the non-compliance and prevent reoccurrence. Implementation of these measures may be delegated to the Site Coordinator however it is the responsibility of the Operations Manager and Environmental Manager to ensure that appropriate measures have been implemented and that the non-compliance has been rectified.

Where a non-compliance is identified, works in relation to the non-compliance will be stopped wherever possible. Remedial action will be undertaken which may require the engagement of consultants in some cases and/or consultation with DPHI and/or the EPA. Actions will be put in place to rectify the non-compliance immediately, with further mitigation/remedial actions to be applied following investigation into the cause of the non-compliance.

In the event of a non-compliance the Environmental Manager will notify the Planning Secretary immediately after becoming aware of the non-compliance. The notification to the Planning Secretary will include the following information:

- Identification of the Development and the Development application number
- The condition of consent that the Development is non-compliant with
- The way in which is does not comply
- The reasons for the non-compliance (if known)
- What actions have been or will be taken to address the non-compliance

Where a non-compliance may also constitute an incident, incident notification shall occur as outlined in **Section 7.2** above. If the non-compliance is notified as an incident, it does not need to be notified as a non-compliance as per condition of consent C13.

9.3 Contingency planning

In the event of an unpredicted impact resulting from either an exceedance of criteria, a valid complaint or site staff observation, the following process will be implemented:

- The Operations Manager and Environmental Manager are to be notified
- The Operations Manager and/or Environmental Manager to determine if the unpredicted impact constitutes an environmental incident that requires external reporting (**Section 7**)
- Investigate to evaluate the contributing factors to the event. The investigation may include:
    - Assessment of weather conditions
    - Visual assessment of the surrounding area
    - Review of operational activities
- Implement remedial response and/or adaptive management measures, dependent on the outcomes of the above investigation
- Implement the review component of this OEMP (**Section 10**) as required

10 Monitoring & Reporting

Environmental monitoring will be undertaken in accordance with the requirements of this OEMP and sub-plans, and EPL 7654. Where inspections and auditing determine a potential non-compliance, monitoring may then be undertaken to validate the impacts.

If ongoing environmental monitoring is deemed necessary, all environmental monitoring equipment will be maintained and calibrated according to the manufactures specifications and appropriate records kept.

Non-conformances relating to the Facility activities and the OEMP include the following:

- An incident or near miss with actual or the potential for environmental impact
- An incident or near miss with actual or the potential for environmental compliance impact with legal requirements
- A non-conformance with the OEMP requirements described in the sub-plans or other environmental directives
- Non-conformances generated from monitoring and auditing the OEMP and sub-plans
- Significant failure to implement mitigation measures
- Complaints not resolved

10.1 Ongoing recording requirements

Table 8 below lists items to be recorded onsite during the operation of the Facility. Additional recording requirements are included in the sub-plans to this OEMP.

Table 8

Condition	Item	Frequency
SSD-9418		
B1	The quantity, type and source of waste received at the site	As applicable
	The quantity, type and quality of the outputs produced	
B7	All sampling and waste classification data for the life of the development in accordance with the requirements of the EPA	As applicable
B14	Keep accurate records of the volume and type of fill imported to site	As applicable
EPL 7654		
M1	The following surface water monitoring data will be retained onsite: a) The date(s) on which the sample was taken b) The time(s) at which the sample was collected c) The point at which the sample was taken from d) The name of the person who collected the sample	Sample events for Point 1 and Point 3 are quarterly Sample events for Point 2 and Point 4 are daily during any discharge Sample records will be kept for at least 4 years after the

		monitoring or event to which they relate took place
M4	A legible record of all complaints that must include: a) The date and time of the complaint b) The method by which the complaint was made c) Any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that affect d) The nature of the complaint e) The action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant f) If no action was taken by the licensee, the reasons why no action was taken	The record of a complaint must be kept for at least 4 years after the complaint was made
M6	Record the following for each load of waste(s) received at the premises: a) The registration number of the vehicle b) The time and date of receipt of the waste c) The source of the waste d) The type(s) of waste e) The quantity of each type of waste (in tonnes)	As applicable

10.2 Continuous monitoring

10.2.1 Monitoring

The Operations Manager, Site Coordinator and Site Operators will be trained into what constitutes a non-compliance and how non-compliances are to be managed. Potential non-compliances are to be managed as outlined under **Section 8** of this OEMP.

10.2.2 Reporting

In accordance with condition C10 the Planning Secretary must be notified in writing via DPHI's Major Projects portal **immediately after becoming aware of an incident**. This notification must identify the Development (i.e., SSD-9418 Ravensworth Composting Facility Expansion) and set out the location and nature of the incident.

In accordance with Appendix 3 of SSD-9418, within 7 days after becoming aware of an incident Bettergrow is to prepare a written notification addressing the below requirements:

a) Identify the Development and application number (i.e., SSD-9418 Ravensworth Composting Facility Expansion)
b) Provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident)
c) Identify how the incident was detected
d) Identify when the applicant became aware of the incident
e) Identify any actual or potential non-compliance with conditions of consent

f) Describe what immediate steps were taken in relation to the incident
g) Identify further action(s) that will be taken in relation to the incident
h) Identify a project contact for further communication regarding the incident

This notification is to be given under this condition even if no notification was given as required under condition C10 or, having given such notification, subsequently forms the view that an incident has not occurred.

Within 30 days of the date of the incident, a detailed report must be provided to DPHI and any relevant public authority (as determined by DPHI) addressing the below requirements:

a) A summary of the incident
b) Outcomes of an incident investigation, including identification of the cause of the incident
c) Details of the corrective and preventative actions that have been or will be implemented to address the incident and prevent recurrence
d) Details of any communication with other stakeholders regarding the incident

10.3 Monthly monitoring

10.3.1 Monitoring

A monthly site inspection will be undertaken by the Site Coordinator, Environmental Manager or delegate throughout the duration of the operation of the Facility. The intent of the inspection will be to identify any potential non-compliances or potential improvements for site management that would reduce environmental impacts or aid in overall compliance of operations.

10.3.2 Reporting

Personnel undertaking monthly inspections of operations will record observations and recommendations on a site inspection sheet. See **Appendix I** for an example inspection record.

The results of the monthly inspections will be stored on the online project management system, DataStation, with observations and recommendations passed onto the Operations Manager and Environmental Manager. It will be the responsibility of the Operations Manager to ensure that any action items are completed and potential opportunities for improvement addressed following internal monthly monitoring. The Operations Manager/Environmental Manager may delegate tasks arising from monthly inspections to the Site Coordinator but remain responsible for ensuring these tasks are carried out onsite.

10.4 Controlled Leachate Discharge Monitoring

10.4.1 Monitoring

In the event a controlled discharge is required from the leachate dam (where the dam is likely to reach capacity and is likely to over top), a **HOLD POINT** will apply.

Prior to any controlled discharge the Site Coordinator or delegate must collect a grab sample from the eastern leachate dam at sample Point 2 as identified on the Site Plan (Figure 1 above) and send to a NATA accredited laboratory (such as RCA Australia) for analysis for pollutants listed in Section 5 Point 2 in environment protection licence 7654 (EPL 7654). This analysis is to be done on a 48-hour turnaround time (to be noted on the Chain of Custody form) and therefore can only be sampled Monday to Wednesday. The results will be reviewed by the Environmental Manager and if they meet

the EPA approved discharge limits, the Site Coordinator will be advised, the HOLD POINT will be released, and discharge can commence. If pollutants have exceeded the approved discharge limits treatment actions will be identified and implemented, and retesting of the dam will occur.

Where discharge can occur, a pump will be set up with a float attached to the inlet pipe to ensure this does not pick up sediment from the base of the basin. The outlet pipe is to be placed on the rock rip rap spillway. The pump is to be turned off at the end of each day.

It is a requirement of EPL 7654 that sampling is to be done **daily during any discharge** therefore, if discharge is to continue sampling will again need to be undertaken.

10.4.2 Reporting

The results from any controlled discharge event will be reported in EPL 7654 Annual Return by the Environmental Manager and will be made publicly available on the Bettergrow Company website.

10.5 Compliance Report

10.5.1 Monitoring

In accordance with condition C14, in consultation with the Operations Manager, the Environmental Manager will annually review the environmental performance of the development to the satisfaction of the Planning Secretary (DPHI). This review will be undertaken within the first year of commencement of operations under SSD-9418, and in the same month each subsequent year thereafter and reported in the Compliance Report.

Annual monitoring will include an assessment of the operational compliance and feasibility of controls listed under this OEMP and within the environmental sub-plans. The intent will be to identify possible opportunities for improvement in site management as well as identifying management controls that are not practical for implementation for the Facility. Any updates to management plans will require DPHI approval.

10.5.2 Reporting

Annual monitoring will inform the preparation of the annual Compliance Report that will:

- Describe the development that was carried out in the previous 12 months, and the development that is proposed to be carried out over the next year
- Include a comprehensive review of the monitoring results and complaints records of the Development over the previous 12 months, which includes a comparison of these against the:
    - Relevant statutory requirements, limits or performance measures/criteria;
    - Requirements of any plan or program required under this consent;
    - Monitoring results of previous years; and
    - Relevant predictions in the EIS.
- Identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance
- Identify any trends in the monitoring data over the life of the Development
- Identify any discrepancies between the predicted and actual impacts of the Development, and analyse the potential cause of any significant discrepancies
- Describe what measures will be implemented over the next year to improve the environmental performance of the Development

Compliance Reports will be prepared in accordance with the *Compliance Reporting Post Approval Requirements (DPIE, 2020).*

In order to fulfil the requirements of C14, each Compliance Report will be submitted to the Planning Secretary of DPHI for acceptance. All actions and recommendations identified in the Compliance Report will be undertaken as soon as practicable.

10.6 NSW Environment Protection Authority (NSW EPA)

10.6.1 Annual return

EPL 7654 defines the licence reporting period as "*….the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue of last renewal of the licence following the commencement of the Act."*

EPL 7654 was issued on 22 June, as such the relevant reporting period is between 22 June each year. The Annual Return, available on the EPA portal eConnect, will be completed by the Environmental Manager within 60 days from 22 June each year.

The Annual Return requires the following:

- A Statement of Compliance
- A Monitoring and Complaints Summary
- A Statement of Compliance – Licence Conditions
- A Statement of Compliance – Requirement to Prepare Pollution Incident Response Management Plan
- A Statement of Compliance – Requirement to Publish Pollution Monitoring Data
- A Statement of Compliance – Environmental Management Systems and Practices

Copies of the Annual Return will be retained by Bettergrow for at least 4 years in accordance with EPL 7654 condition R1.6.

10.6.2 Written report

Condition R3 (R3.1-3.4) of EPL 7654 outlines the methodology that will be followed in the event that the EPA requests a written report to address possible pollution.

10.6.3 Other reporting conditions

Condition R4.1 states that Bettergrow is to maintain a daily log and record the following data of fires at the site:

a) Time and date when the fire was observed, started or reported
b) Whether the fire was authorised by the licensee, and, if not, the circumstances which ignited the fire
c) The time and date that the fire ceased and whether it burnt out or was extinguished
d) The location of the fire (e.g., clean timber stockpile, putrescible garbage cell, etc)
e) Prevailing weather conditions
f) Observations made in regard to smoke direction and dispersion
g) The amount of waste that was combusted by the fire
h) Action taken to extinguish the fire

Bettergrow will notify the EPA in accordance with EPL 7654 conditions R2.1 and R2.2 of all fires at the Facility as soon as practical after becoming aware of the fire.

Condition R4.3 and R4.4 relate to the requirement to submit an Annual Waste Summary Report each financial year. This Report will be submitted via EPA's Waste and Resource Reporting Portal (WARRP) within 60 days of the end of the financial year by the Environmental Manager or delegate.

10.7 Independent environmental audits

In accordance with SSD-9418 condition C16, Independent Environmental Audits (IEA) are to be commissioned by Bettergrow and conducted within one year of the commencement of operation and every three years thereafter. Audits must:

- be prepared in accordance with the *Independent Audit Post Approval Requirements (DPIE, 2020)*
- be led and conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Planning Secretary
- be submitted to the satisfaction of the Planning Secretary within three months of commissioning the audit (or within another timeframe agreed by the Planning Secretary)

10.8 Facility website

In accordance with condition C19, copies of the following documents will be maintained on the Bettergrow website:

- The document s referred to in condition A2 of SSD-9418
- All current statutory approvals for the Development
- All approved strategies, plans and programs required under the conditions of SSD-9418
- The proposed staging plans for the Development if the construction, operation or decommissioning if the Development is to be staged
- Regular reporting on the environmental performance of the Development in accordance with the reporting requirements in any plans or programs approved under the conditions of SSD-9418 consent
- A comprehensive summary of the monitoring results of the Development, reported in accordance with the specifications in any conditions of SSD-9418, or any approved plans and programs
- A summary of the current stage and progress of the Development
- Contact details to enquire about the Development or to make a complaint
- A Complaints Register, updated monthly
- The Compliance Report of the Development
- Audit reports prepared as part of any Independent Audit of the Development and Bettergrow's response to the recommendations in any audit report
- Any other matter required by the Planning Secretary

11 OEMP Updates

This OEMP is an operational document and as such, ongoing maintenance of this OEMP is essential to ensure that management procedures remain current and feasible to implement. The below processes have been established to facilitate improvement of the OEMP through periodic reviews and discussion of the OEMP performance to determine whether the OEMP remains suitable, adequate and effective for the Facility.

11.1 Required updates

In accordance with condition C8, this OEMP will be reviewed and updated where necessary within three months of the following events:

- The submission of a Compliance Report under condition C14
- The submission of an incident report under condition C10
- The submission of an Independent Audit under condition C16
- The approval of any modification of the conditions of SSD-9418
- The issue of a direction of the Planning Secretary under condition A2(b) which requires a review

Where strategies, plans and programs are required to undergo a revision, they must be done to the satisfaction of the Planning Secretary. As such, where any of the above listed events require an update to this OEMP and/or supporting documents, communication with DPHI will be required. Communications will occur in two ways:

1. DPHI will be provided updated documents for endorsement of the Planning Secretary in the event that updates relate to a change in operation or management of the Facility; and
2. Minor amendments such as administrative changes may not required endorsement from the Planning Secretary. DPHI will be notified of minor changes, seeking feedback as to whether approval of the updated document is required by the Planning Secretary.

Where the OEMP or sub-plan is revised, submission will be provided to the Planning Secretary within six weeks of the review required under condition C8, or such other timing as agreed by the Planning Secretary.

11.2 Management review

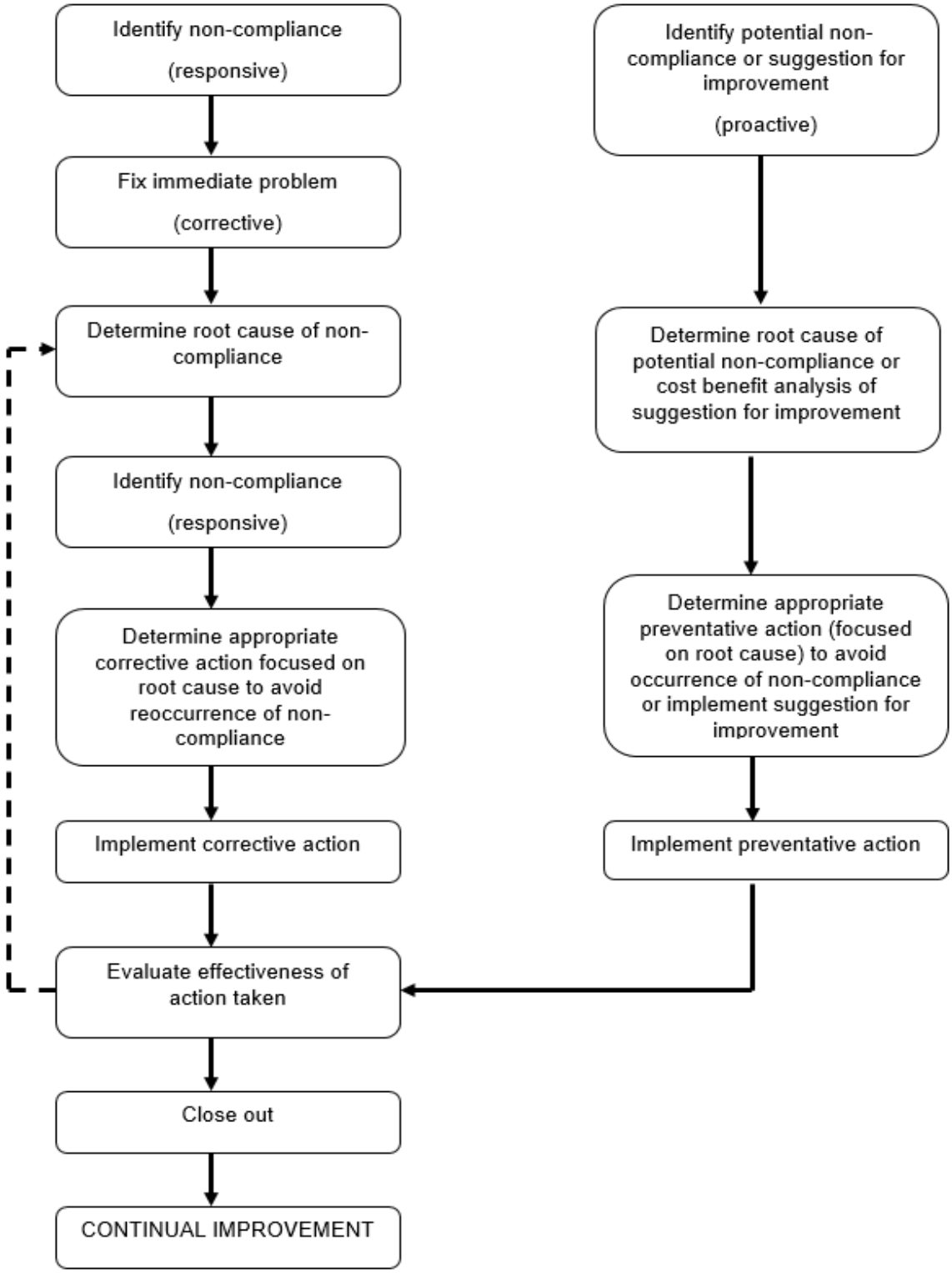
In addition to the above, routine monitoring and/or management review of the Facility may identify the need for updating this OEMP. The management review is facilitated by the Operations Manager or Environmental Manager, ensuring the recommendations of the review are implemented. Under condition C14, compliance of the Facility is to be assessed and reported on a yearly basis (see **Section 9.4**), however additional management reviews may be undertaken at any time at the discretion of the Operations Manager of Environmental Manager to assess compliance of operations and to determine whether the OEMP is suitable, adequate and effective for the Facility.

11.3 Continuous improvement

Bettergrow are committed to the concept of continual improvement in both the application and management of operations at the Facility. Audits and consultation may advise improvements or

modifications to site management and practices. **Figure 5** below outlines the methods to be applied in the event that an incident occurs onsite, actual or potential non-compliances are identified, or following audits undertaken at the Facility.

Figure 5 Continuous Improvement Process



Appendix A
Waste Management Plan

Waste Management Plan

Bettergrow Ravensworth Composting Facility

74 Lemington Road Ravensworth NSW

Revision History

Rev No.	Revision Date	Author / Position	Details	Authorised Name / Position
A	6/02/2023	J Blomberg Environmental Manager	Draft	
1	10/11/2023	J Blomberg Environmental Manager	For submission to DPE (conditions B1-B3)	J Blomberg Environmental Manager
2	26/07/2024	J Blomberg Environmental Manager	Review as per SSD-9418 condition C8(b) No change required	J Blomberg Environmental Manager

This document should be read in conjunction with Bettergrow Ravensworth Operational Environmental Management Plan

When printed this document is an uncontrolled version and should be checked against the electronic version for validity

Table of Contents

1 Introduction

1.1 Background

Bettergrow operates an outdoor windrow composting facility incorporating biosolids, garden organics and other 'waste' materials as approved in Environment Protection Licence 7654 to produce a suitable compost product. The premises is located on Lot 10 DP1204457, also known as 74 Lemington Road Ravensworth, in the Singleton local government area.

Bettergrow are contracted by AGL Macquarie (the Landowner) to supply manufactured soil ameliorant and rehabilitation products for use, in part, for approved rehabilitation works at the AGL Macquarie sites such as Ravensworth Mine sites, Liddell Ash Dam, Liddell Power Station and Bayswater Power Station. Bettergrow also sell a portion of the composted material to third parties.

The waste types and materials to be accepted for composting at the site include those listed on Environment Protection Licence 7654 and State Significant Development 9418. This list may be updated from time to time as new materials suitable for resource recovery at the Facility become available.

This Waste Management Plan (WMP) forms part of the Operational Environmental Management Plan (OEMP) and has been prepared for the Bettergrow resource recovery facility (the Facility) in accordance with State Significant Development 9418 (SSD-9418).

Consent for SSD-9418 was granted on 31 August 2022 by the Department of Planning and Environment (DPE) and permits the expansion of the existing resource recovery facility to process up to 200,000 tonnes per annum of organic material, including water drainage and leachate works, hardstand areas and associated infrastructure.

A modification to SSD-9418 was submitted to DPE on 17 August 2023 requesting the removal of the site weighbridge as this data is already captured on the incoming weighbridge dockets and for outgoing material on the loader or truck digital scales, and to also allow for greater flexibility in receiving new resource recovered materials onto site for the purpose of composting.

This WMP has been prepared to satisfy the requirements of conditions B1 and B2 of *Schedule 2 Part B Specific Environmental Controls* in SSD 9418. See below section 2.2 Conditions of Consent for detail.

Note that this Plan does not include for host plant material, being garden organics/waste that is sourced from within the Sydney Phylloxera Infested Zone, which may contain some phylloxera contaminated plant material. Refer to the Biosecurity Protocol within the OEMP for procedures on biosecurity management.

1.2 Purpose & objective

The purpose of this WMP is to provide the management and performance requirements related to waste at the Facility and includes:

- Requirements for management of waste for operations at the Facility as stipulated by regulatory approvals for the Development;
- Description of potential sources of wastes and risks related to waste management;
- Detail the waste materials to be reused/recycled either on or off-site;
- Detail procedures for handling, accepting, storing and disposing of waste materials;
- Detail waste materials to be received at the site;

- Detail the outputs produced at the site;
- Detail the waste tracking system to manage site acceptance of materials;
- Description of the environmental controls to meet objectives and regulatory approval requirements; and
- Overview of the environmental monitoring programs associated with environmental controls and management actions.

The objectives of the WMP are to:

- Advise site personnel of their responsibilities in managing waste generated at the site;
- Advise site personnel of their responsibilities in handling, storing and accepting waste that will be reused on site in the composting process;
- Ensure compliance with the conditions of approval related to waste management; and
- Ensure suitable monitoring of waste received at the site and product produced.

1.3 Structure of this Waste Management Plan

This WMP has been developed to manage wastes accepted and generated by the Facility and to satisfy the requirements set out in conditions of Development Consent SSD-9418, and includes information on the following:

- Section 2 – Legislative & Regulatory Compliances
- Section 3 – Process Overview
- Section 4 - Waste Monitoring Program
- Section 5 – Inductions & Training
- Section 6 – Mitigation Measures
- Section 7 – Complaints and Incidents
- Section 8 – Monitoring & Review

1.4 Approval of this Waste Management Plan

The WMP will be submitted to the Planning Secretary of the Department of Planning and Environment (DPE) prior to commencement of operations.

Any subsequent versions of the WMP will be submitted to DPE for approval as per SSD-9418 condition C9.

2 Legislative & Regulatory Compliance

2.1 Relevant legislation

Key environmental legislation relating to waste management for the Facility includes:

- *Protection of the Environment Operations Act 1997*
- Protection of the Environment Operations (Waste) Regulation 2014
- *Waste Avoidance and Resource Recovery Act 2001*
- *Contaminated Land Management Act 2021*
- *Biosecurity Act 2015*
- *National Parks and Wildlife Act 1974*

2.2 Conditions of consent

The operations at Ravensworth are subject to the conditions contained in Development Consent 9418.

The specific requirement for a WMP (*Schedule 2 Part B Specific Environmental Conditions* B2 and B3) and a Waste Monitoring Program (Condition B1) and general requirements for environmental management plans (*Schedule 2 Part C Environmental Management, Reporting and Auditing* C1, C8 and C9) are detailed in **Table 1**.

Table 1 Development Consent Conditions

No.	Requirement	Document Reference
WASTE MANAGEMENT		
Waste Monitoring Program		
B1	From the commencement of operation of the development, the Applicant must implement a Waste Monitoring Program for the development. The Program must:	Section 4
	(a) Be prepared by a suitably qualified and experienced person(s) prior to the commencement of operation;	
	(b) Include suitable provision to monitor the: (i) Quantity, type and source of waste received on site; and (ii) Quantity, type and quality of the outputs produced on site; and	
	(c) Ensure that: (i) All waste that is controlled under a tracking system has the appropriate documentation prior to acceptance at the site; and (ii) Staff receive adequate training in order to be able to recognise and handle any hazardous or other prohibited waste including asbestos.	
Waste Management Plan		
B2	Prior to the commencement of operation of the development, the Applicant must prepare a Waste Management Plan for the development to the satisfaction of the Planning Secretary. The Waste Management Plan must form part of the OEMP and be prepared in accordance with condition C5. The Plan must:	This Plan

	(a) Detail the type and quantity of waste to be generated during operation of the development;	Section 3.6 Section 4.2
	(b) Describe the handling, storage and disposal of all waste streams generated on site, consistent with the *Protection of the Environment Operations Act 1997*, Protection of the Environment Operations (Waste) Regulation 2014 and the Waste Classification Guideline (EPA, 2014);	Section 3
	(c) Detail the materials to be reused or recycled, either on or off-site; and	Section 3
	(d) Include the Management and Mitigation Measures included in Appendix 2 [of SSD 9418].	Section 2.3
B3	The Applicant must:	
	(a) Not commence operation until the Waste Management Plan is approved by the Planning Secretary; and	This Plan
	(b) Implement the most recent version of the Waste Management Plan approved by the Planning Secretary.	This Plan
ENVIRONMENTAL MANAGEMENT		
Management Plan Requirements		
C1	Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:	This Plan
	(a) Details of baseline data;	N/A
	(b) Details of: (i) The relevant statutory requirements (including any relevant approval, licence or lease conditions); (ii) Any relevant limits or performance measures and criteria; and (iii) The specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of the development or any management measures;	Section 2
	(c) A description of the measures to be implemented to comply with the relevant statutory requirements, limits or performance measures and criteria;	Section 6
	(d) A program to monitor and report on the: (i) Impacts and environmental performance of the development; and (ii) The effectiveness of the management measures set out pursuant to paragraph (c) above:	Section 8
	(e) A contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;	Section 7
	(f) A program to investigate and implement ways to improve the environmental performance of the development over time;	Section 8
	(g) A protocol for managing and reporting any: (i) Incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria); (ii) Complaint; and	Section 7

	(iii) Failure to comply with statutory requirements; and	
	(h) A protocol for periodic review of the Plan.	Section 8
Note: The Planning Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.		

2.3 Development consent mitigation measures

Appendix 2 Applicants Management and Mitigation Measures to SSD-9418 details the reasonable and practical measures to avoid or minimise impacts to the environment that may arise as a result of the Development. The following mitigation and management measures will be applied during operation of the Facility:

- Plant and equipment should be regularly maintained
- Ordering should be limited to only the required amount of materials
- Materials should be segregated to maximise reuse and recycling
- Routine checks should be undertaken of waste sorting and storage areas for cleanliness, hygiene and OH&S issues, and contaminated waste materials
- Separate skips and recycling bins should be provided for effective waste segregation and recycling purposes, or separation will occur at the waste contractors facility
- Training and awareness of the requirements of the WMP and specific waste management strategies will be undertaken
- Contaminated waste will be managed, transported and disposed of in accordance with licensing requirements
- Assessment of suspicious potentially contaminated materials, hazardous materials and liquid wastes should be undertaken
- Regular monitoring, inspection and reporting requirements should be undertaken, and findings implemented

2.4 Environmental Protection Licence

Environment Protection Licence 7654 (EPL 7654) specifies waste that may be received at the premises and use of that waste during operation at the Facility.

Condition L3 Waste of EPL 7654 states:

L3.1 The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled "Waste" and meeting the definition, if any, in the column titles "Description" in the table below.

Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled "Activity" in the table below.

Any waste receives at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled "Other Limits" in the table below.

This condition does not limit any other conditions in this licence.

Code	Waste	Description	Activity	Other Limits
NA	*General solid waste (non-putrescible)*	*Recovered plasterboard (as defined in 'The Bettergrow compost order 2023' or as in force from time to time)*	*Composting*	*NA*
NA	*General solid waste (non-putrescible)*	*Spent Bleaching Clay (as defined in 'The Bettergrow compost order 2023' or as in force from time to time)*	*Composting*	*NA*
NA	*General solid waste (non-putrescible)*	*Paper crumble (as defined in 'The Bettergrow compost order 2023' or as in force from time to time)*	*Composting*	*NA*
NA	*General solid waste (non-putrescible)*	*Urban wood residues (as defined in 'The compost order 2016)*	*Composting*	*NA*
NA	*Liquid waste*	*Bayswater Mine Water (as defined in 'The Bettergrow compost order 2023' or as in force from time to time)*	*Composting*	*NA*
NA	*General solid waste (non-putrescible)*	*Natural organic fibrous material (as defined in Schedule 1 of the POEO Act)*	*Composting*	*NA*
NA	*General solid waste (non-putrescible)*	*Coal ash which meets the conditions of 'The coal ash order 2014'*	*Composting*	*NA*
NA	*General solid waste (non-putrescible)*	*Biosolids categorised as unrestricted use, or restricted use 1 ,2 or 3 in accordance with the criteria in the Biosolids Guidelines (EPA 2000)*	*Composting*	*Contamination and stabilisation grades A, B and C only. Biosolids classified as 'Not Suitable For Use' (Grade E) are not to be accepted at the premises*
NA	*General solid waste (non-putrescible)*	*Garden waste (as defined in Schedule 1 of the POEO Act)*	*Composting*	*NA*

Condition O6 Waste Management of EPL 7654 states:

O6.1 Waste is only permitted to be received, stored and processed in areas at the premises where leachate barrier has been installed and the barrier is to EPA satisfaction.

O6.2 Leachate collection and storage facilities must be maintained so as to collect and impound all leachate generated by a storm events of less than 1 in 25-year recurrence interval of one day duration.

O6.3 Leachate must not be permitted to mix with stormwater or any stormwater infrastructure at the premises.

O6.4 The licensee must not cause or permit any leachate to pool at the premises (except within designated leachate dams/sumps).

O6.5 Leachate may be irrigated over active compost windrows only, within the premises.

O6.6 No leachate is permitted to be discharged from the operating area of the premises.

O6.7 The licensee shall install a level marker in the leachate dam/s to indicate the volume of leachate in each dam.

Note that from time to time EPL 7654 may be updated to include additional resource recovered materials as new potential feedstocks become available therefore, the electronic version should always be checked for validity which is available on the EPA website Public registers (nsw.gov.au).

3 Process Overview

Prior to accepting any resource recovered material on site, the Bettergrow Environmental Manager or delegate will review any Characterisation Reports (or similar) to ensure that the material complies with the description provided in section L3.1 of EPL 7654 and any contamination limits set in Regulatory documents including Resource Recovery Orders. Where material does not meet the characterisation requirements, it will not be allowed on site.

3.1 Weighing loads & data recording

All vehicles transporting material to the Facility for use in the composting process are required to be accompanied with a weighbridge docket. In the unlikely event a load arrives to the Facility without a weighbridge docket, the driver will be instructed to attend a public weighbridge before returning to site and unloading. The Site Coordinator or delegate will inspect the loads for obvious contamination. Contaminated loads will be rejected and instructed to leave the site without unloading. All rejected loads will be recorded on the Rejected Load Register.

See **Section 4** Waste Monitoring Program for further information regarding details to be recorded for the tracking of materials being transported to and from the Facility.

Accepted vehicles are directed to the appropriate waste tipping area on the hardstand processing pad (see **Figure 1 Site Plan**). Once tipping is complete the vehicle will proceed to the truck wash out area for cleaning and reloaded if required. Where trucks are transporting material off site, the following is recorded by the Site Coordinator or delegate from either the loader bucket scales or truck scales:

- Waste quantity
- Waste type
- Waste stream (where waste is a rejected load)
- Date
- Vehicle registration number
- Drivers signature
- Name and address of where the material is transported to and the code or number of any environment protection licence number(s) for that place, if applicable

All delivery docket information is provided to the Bettergrow Administration Officer on a monthly basis for record keeping.

BetterGROW

Figure 1 Site Plan

NOTES:

EPA ID NO	Type of Monitoring Point	Easting	Northing	Location Description
1	Leachate Dam Characterisation			TO BE CONFIRMED
2	Leachate Dam Emergency Spillway			TO BE CONFIRMED
3	Process Water Tank	315785.80	6410375.50	Center of Water Tank
4	Sediment Basin	316012.50	6409733.60	Star Picket at Basin Outlet

TOTAL LEASE AREA: 630,000m²

BetterGROW CROSSMULLER CONSTRUCTION

PROJECT: BETTERGROW COMPOSTING FACILITY

DRAWING: EXISTING INFRASTRUCTURE PLAN

LOCATION: PART OF LOT 10 DP1204457 RAVENSWORTH

SCALE: 1:750 @ A1 or 1:1500 @ A3

STAGE: DA

PROJECT NUMBER: 007326-01T

DRAWING NUMBER: 0011

ISSUE: F

3.2 Tipping & inspection of waste

Waste materials to be accepted at the site as listed in SSD-9418 and as described in either the POEO Act or within an EPA issued Resource Recovery Order includes the following:

- Urban wood residues meaning untreated, unpainted and uncontaminated urban derived timber and wood material that is collected as a separate material stream for processing. Urban wood residues include materials such as off-cuts, saw dust, wood shavings, packaging crates and pallets;
- Paper crumble meaning solid waste with a particle size less than 4 mm, comprising of long cellulose fibres, fibre bundles and minor quantities of sand, mud and fine grit, which results from the continuous processing of wastepaper pulping and screening at Orora Packaging Australia Pty Ltd Botany Mill, 1891 Botany Road, Matraville;
- Wastewater from Bayswater Power Station;
- Drill mud process water;
- Natural organic fibrous composting material meaning bagasse, peat, seed hulls and husks, straw and the like, and including any mixture of those materials;
- Biosolids meaning the organic product that results from sewage treatment processes (sometimes referred to as sewage sludge);
- Garden waste meaning waste that consists of branches, grass, leaves, plants, loppings, tree trunks, tree stumps and similar materials, and includes any mixture of those materials;
- Animal waste includes dead animals and animal parts and any mixture of dead animals and animal parts; and
- Other material as approved by the EPA from time to time.

Note that drill mud process water and animal waste are not listed on EPL 7654 and will therefore not be permitted to site until approved by the EPA.

Other materials approved previously for inclusion in the compost process are listed in the above **Section 2.4** Environment Protection Licence. As noted in **Section 2.4**, other recourse recovered material may be brought to site as approved by the EPA from time to time.

All material will initially be visually inspected before unloading for any obvious contaminants. Where contaminants are identified, the load will be rejected and turned away. Any rejected loads will be recorded on the Reject Loads Register including truck and supply company details. The supplier will be contacted and advised of the contaminated load. Where no contaminants identified, the truck will be instructed to proceed to the load receival hardstand area.

The material will be inspected again by a Bettergrow employee who has been appropriately trained in identifying any hazardous or non-conforming waste including physical contaminants and asbestos as it is being tipped onto the hardstand. If contaminants are found the truck is to be reloaded and returned to the supplier. The supplier will be contacted and advised of the contaminated load and the load recorded on the Reject Loads Register.

3.3 Storage

Each material type will have a designated tipping area on the hardstand pad shown in **Figure 1**. Material will remain at this area until such time that sufficient volume has been aggregated and it is blended in the agitation stockpile in preparation for composting.

When the compositing process is complete, the material is screened and stockpiled in the area shown on **Figure 1** until such time that it is land applied to AGL Macquarie mine sites for the purpose of mine rehabilitation or sold to other third parties.

3.4 Loading & transfer of material off-site

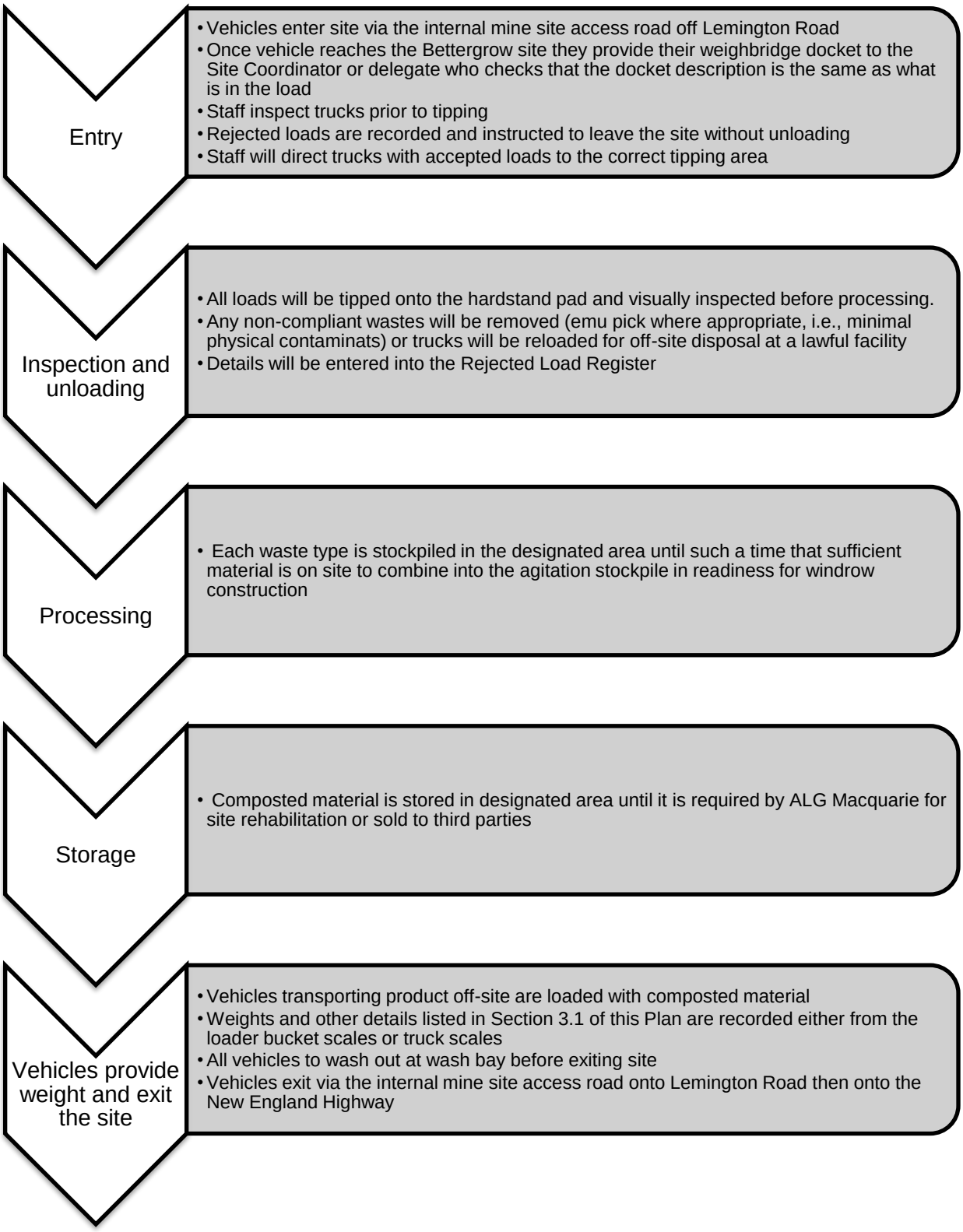
It is intended that the final compost product will either be used for mine rehabilitation at AGL Macquarie sites such as Ravensworth Mine sites, Liddell Ash Dam, Liddell Power Station and Bayswater Power Station or sold to other third parties. All loads that leave the site will be tracked to the customer or mine and the following details will be recorded using either the loader bucket electronic scales or truck electronic scales:

- Weight quantity
- Waste type
- Waste stream (where waste is a rejected load)
- Date
- Vehicle registration number
- Drivers signature
- Name and address of where the material is transported to and the code or number of any environment protection licence number(s) for that place, if applicable

All composted material will be received at the receiver site under The Bettergrow compost exemption 2023 (or as in force from time to time) as issued by the NSW EPA. See **Figure 2** below for the process diagram.

All delivery docket information is provided to the Bettergrow Administration Officer on a monthly basis for record keeping.

Figure 2 Process flow chart for the operation of the Ravensworth compost facility



3.5 Waste generated during operations

Table 2 below lists the potential waste types that may be generated during operations at the site. This Table also shows proposed on site storage and waste destination. Quantities will vary depending on the number of employees on site, resources required and reject product received.

Table 2 Potential waste streams generated during operation

Type of Waste to be Generated	Proposed Onsite Storage	Destination
Cardboard packaging / Office paper	Paper and Cardboard to be separated for recycling at source. Paper and Cardboard to be reused where possible, or compacted for recycling	Recycling contractor for recycling
Plastic packaging	Bale up on-site. Store in waste storage and recycling area(s)	Recycling contractor for recycling Non-recyclable plastics to be disposed as general waste
Waste/reject product	Store within waste storage area, quarantine area will be established to ensure no cross contamination	Returned to supplier or where reject compost, disposed of to a licensed facility approved to accept this material
Recyclable glass, aluminium, metal, and plastic containers	To be separated at source as far as practicable for recycling by contractor	Recycling contractor for recycling
Used Toner Cartridges	To be stored on site for collection by toner supplier	Toner supplier for recycling
General waste	To be stored inside site office or machine storage area	Disposed to licenced waste disposal facility
Portaloo wastes	Pump out by waste contractor	Disposed of by waste contractor to licenced facility approved to accept untreated effluent
Waste storage and recycling receptacles are to be located nearby all generation sources. Waste storage and recycling bins to be clearly labelled. The site manager or representative would be responsible for maintaining the waste storage area(s), for ensuring bins are emptied and collected as required, and for ensuring that no contamination of waste streams is occurring.		

4 Waste Monitoring Program

This Section has been prepared to address the requirement for a Waste Monitoring Program as outlined under Condition B1 of SSD-9418 and specifically includes suitable provision to monitor the:

(i) Quantity, type and source of waste received on site; and

(j) Quantity, type and quality of the outputs produced on site

to ensure that:

(i) All waste that is controlled under a tracking system has the appropriate documentation prior to acceptance at the site; and

(ii) Staff receive adequate training in order to be able to recognise and handle any hazardous or other prohibited waste including asbestos.

4.1 Waste received at the Facility

Only waste types that are approved under SSD-9418 and EPL 7654 will be received at the Facility for the purpose of composting. These are listed in above **Section 2.4** Environment Protection Licence and **Section 3.2** Tipping & inspection of waste of this WMP.

Where an approved waste type is subject to a Resource Recovery Order/Exemption the Generator is required to undertake characterisation sampling and provide the results to Bettergrow to gain approval to bring the material to site. Where this is not the case, the material must meet the description provided in EPL 7654.

When the waste arrives to site, the truck carting the waste will provide the Site Coordinator or delegate their weighbridge docket. The waste will be inspected to ensure that it meets the description provided on the docket. To ensure compliance with the mandatory requirements for record keeping as set out in clauses 27 to 30 and 32 of the *Protection of the Environment (Waste) Regulation 2014* and the *NSW EPA Waste Levy Guidelines*, the docket will contain the following information:

- Source of the waste/Generator
- Quantity of waste being delivered
- Waste type
- Date of delivery
- Vehicle registration number
- Drivers signature
- If waste is transported from another waste facility, the name and address of that Facility and the code or number of any environment protection licence(s) for the supplier Facility

Due to being located within the phylloxera infested zone (PIZ) loads of green waste that are received from within the Sydney Basin area will need to be accompanied by the **original yellow copy of a Plant Health Assurance Certificate (PHAC) for *each* load.** A photocopy of a PHAC will not be accepted. See Appendix I of the OEMP for an example of a PHAC.

All weighbridge dockets are provided to the Bettergrow Administration Officer on a monthly basis for record keeping.

4.2 Waste transported from the Facility

Composted material is sampled and analysed at NATA accredited laboratories to confirm the outputs produced meet the requirements set in the *Biosolids Guidelines* (NSW EPA) for Unrestricted Use,

Restricted Use 1, Restricted Use 2 or Restricted Use 3. This material is not released from site until the lab results are received to ensure the correct land application method is applied.

Bettergrow's compost meets the definition of waste as described in the *Protection of the Environment Operations Act 1997* being:

> *"Any processed, recycled, re-used or recovered substance produced wholly or partly from waste that is applied to land"*

Therefore, along with any rejected loads, the composted material will have the following information recorded on the delivery docket for each load transported from the Facility, including onto AGL Macquarie site(s):

- Quantity of material being transported
- Waste type
- Waste stream (where waste is a rejected load)
- Date and time the load is transported from the Facility
- Vehicle registration number
- Drivers signature
- Name and address of where the material is transported to and the code or number of any environment protection licence number(s) for that place, if applicable

The Site Coordinator or delegate will ensure that as a minimum this information is recorded on the delivery docket. All delivery dockets are provided to the Bettergrow Administration Officer on a monthly basis for record keeping.

4.3 Waste classification procedure

In the event waste cannot be avoided, reused or recycled it will be classified and appropriate disposal will then occur. The classification of waste is undertaken in accordance with the EPA's *Waste Classification Guidelines Part 1: Classifying Waste* (2014). This document identifies six classes of waste: Special, Liquid, Hazardous, Restricted Solid, General Solid (putrescible) and General Solid (non-putrescible) and describes a six-step process to classifying waste. That process is described below:

Step 1: Is it 'special waste'?

Establish if the waste should be classified as special waste. Special wastes include clinical and related, asbestos, waste tyres. Definitions are provided in the *Guidelines*.

Note: Asbestos and clinical wastes must be managed in accordance with the requirements of Part 7 and Clause 113 of the Protection of the Environment Operations (Waste) Regulation 2014.

Step 2: If not special, is it 'liquid waste'?

If it is established that the waste is not special waste, it must be decided whether it is 'liquid waste'. Liquid waste means any waste that: has an angle of repose of less than 5° above horizontal becomes free flowing at or below 60° Celsius or when it is transported is generally not capable of being picked up by a spade or shovel.

Liquid wastes are sub-classified into:

- Sewer and stormwater effluent;
- Trackable liquid waste, being category 1 trackable waste and wastes stated under the *Protection of the Environment Operations (Waste) Regulation 2014, Schedule 1 Waste to which waste tracking requirements apply*; and
- Non-trackable liquid waste.

Step 3: If not liquid, has the waste already been pre-classified by the NSW EPA?

The EPA has pre-classified several commonly generated wastes in the categories of hazardous, general solid waste (putrescibles) and general solid waste (non-putrescibles). If a waste is listed as 'pre-classified', no further assessment is required.

Step 4: If not pre-classified, is the waste hazardous?

If the waste is not special waste (other than asbestos waste), liquid waste or pre-classified, establish if it has certain hazardous characteristics and can therefore be classified as hazardous waste.

Hazardous waste includes items such as explosives, flammable solids, substances liable to spontaneous combustion, oxidizing agents, toxic substances and corrosive substances.

Step 5: If the waste does not have hazardous characteristics, undertake chemical assessment to determine classification.

If the waste does not possess hazardous characteristics, it needs to be chemically assessed to determine whether it is hazardous, restricted solid or general solid waste (putrescible and non-putrescible). If the waste is not chemically assessed, it must be treated as hazardous.

Waste is assessed by comparing Specific Contaminant Concentrations (SCC) of each chemical contaminant, and where required the leachable concentration using the Toxicity Characteristics Leaching Procedure (TCLP), against Contaminant Thresholds (CT).

Step 6: Is the general solid waste putrescible or non-putrescible?

If the waste is chemically assessed as general solid waste, a further assessment is available to determine whether the waste is putrescible or non-putrescible. The assessment determines whether the waste is capable of significant biological transformation. If this assessment is not undertaken, the waste must be managed as general solid waste (putrescible).

4.4 Reuse & recycling

Waste separation and segregation will be promoted on-site to facilitate reuse and recycling as a priority of the waste management program as follows:

- Waste segregation onsite – Waste materials will be separated onsite into dedicated bins/areas for either reuse onsite or collection by a waste contractor and transport to off-site facilities; and
- Waste separation off-site – Wastes to be deposited into one bin where space is not available for placement of multiple bins, and the waste is to be sorted off-site by a waste contractor.

Where materials cannot be reused and recycled, all waste would be handled and disposed in accordance with the *Protection of the Environment Operations Act 1997*.

4.5 Resource Recovery Orders

The receival and processing of materials will be undertaken in accordance with the requirements set out in the relevant Resource Recovery Order (RRO) as issued by the EPA, and in accordance with EPL 7654.

Composted material produced will meet the requirements outlined under *The Bettergrow compost order 2022* before it is either applied to AGL Macquarie lands for mine site rehabilitation or sold to off-site third-party consumers.

Testing and recording requirements under the relevant RRO will be required in order for that RRO to remain applicable for site operations.

4.6 Waste handling & storage

Where waste is required to be handled and stored onsite prior to onsite reuse or off-site recycling/disposal, the following measures apply:

- Liquid wastes (other than wastewater) - to be stored in appropriate containers in bunded areas until transported off-site. Bunded areas will have the capacity to hold 110 per cent of the liquid waste volume for bulk storage or 120 per cent of the volume of the largest container for smaller packaged storage.
- All other recyclable or non-recyclable wastes - to be stored in appropriate covered receptacles (e.g., bins or skips) in appropriate locations onsite and contractors commissioned to regularly remove/empty the bins to approved disposal or recycling facilities
- Wastes intended for on-site reuse (i.e., in compost) will be stored in its designated area on the hardstand pad as shown in **Figure 1**

4.7 Waste disposal

Waste in this section consists of waste generated from the operations of the site as identified in **Section 3.5** above.

Waste disposal will be in accordance with the *Protection of the Environment Operations Act 1997* and the *Waste Avoidance and Resource Recovery Act 2001*. Wastes that are unable to be reused or recycled will be disposed off-site to an EPA approved waste management facility following classification.

Licensed waste contractors and licensed waste management facilities that may be available for off-site waste disposal are included in **Table 3**. Details of waste types, volumes and destinations are to be recorded on the delivery docket.

Table 3 Waste contractors and licenced facilities

Name	Details	Contact Details	Waste Accepted
Central Waste Station	Resource recovery EPL 13013	8 Styles Street Kurri Kurri, NSW Ph. 1800 180 180	General solid waste (non-putrescible) including concrete, timber, soils and steel
Muswellbrook Waste & Recycling Facility	Resource recovery and landfill EPL 5980	Coal Road Muswellbrook, NSW Ph. 02 6549 3852	Batteries, asbestos, paper and cardboard, E-waste, hazardous waste, metal, plastic, tyres, iron, steel, motor oil & grease, chemical drums, cardboard, mixed paper, oil filters and concrete
Hunter Septics	Waste contractor	2 Button Close Darlington, NSW 2330 Ph. 0428 818 915	Portaloo waste

4.8 Waste levy

The Facility is required to record waste inputs and outputs and submit an Annual Waste Report to the NSW EPA via the Waste and Resource Reporting Portal (WARRP) to determine whether a waste levy payment is required. The Facility will use the weighbridge dockets/delivery dockets procedure described in **Section 3.2 and 3.4** above for recording and reporting of waste transfer as described in this WMP.

4.9 Waste recording & reporting

Waste related recording requirements are outlined under **Section 4.1** Waste received at the Facility and **Section 4.2** Waste transported from the Facility. Waste reporting requirements are covered under **Section 4.8** Waste levy.

5 Inductions and Training

Bettergrow management will ensure that all employees and contractors involved with the operations of the Facility are suitably inducted and trained prior to commencing any work on site. Training in relation to environmental responsibilities and implementation of this WMP will take place initially through a site induction and then on an on-going basis through toolbox talks.

5.1 General site induction

All personnel will undertake a compulsory site induction prior to commencing work on site. The site induction will include an environmental component which will address the following as a minimum:

- Relevant details of the Facility OEMP and this WMP including purpose and objectives
- Key environmental issues
- Environmental licenses, permits and approval conditions
- Relevant legislation
- Environmental management requirements and responsibilities
- Mitigation measures for the control of environmental issues
- Environmental incident response and reporting requirements
- Information relating to the location of environmental constraints
- Environmental personnel and key contacts
- Appropriate response and management of complaints received from the public, government agencies or other stakeholders in accordance with the protocol
- Appropriate response and management of environmental incidents in accordance with the strategy

5.2 Works specific induction

The induction is general training that incorporates the environmental and WHS requirements for the site. All personnel including contractor personnel are required to undertake this training. The induction training is delivered via the Bettergrow online platform and facilitated by either the Site Coordinator with the assistance of the Environmental Manager and/or the WHS Coordinator.

The induction is to include but not be limited to:

- Safety and operating procedures and the correct identification of environmental hazardous or other prohibited waste including asbestos
- Correct operation of plant and equipment
- Identification of approved waste streams for inclusion in compost
- Incident and emergency response procedures
- Reporting requirements
- Pollution Incident Response Management Plan

In addition to the Bettergrow induction, there is an AGL Macquarie induction requirement. The Site Coordinator will manage all AGL inductions.

5.3 Toolbox talks

All personnel will attend toolbox talks on a daily basis at pre-start meetings. Toolbox talks may include the following topics:

- Noise and dust control
- Erosion and sediment control
- Water management

- Operation hours
- Waste management including the identification of any hazardous
- Spill control
- Environmental incidents
- Predicted weather and associated hazards (e.g., flooding, high winds, bushfire)

5.4 Training records

Records of all training will be recorded and maintained and will include information on:

- Who was trained
- When the person was trained
- The name of the trainer
- A general description of the training content

Training records for the Facility will be stored on the internal management system DataStation.

Training review

The ongoing competency and training requirements will be reviewed on a routine basis depending on staffing and operations at the site. Potential triggers for a review of training methodology under this WMP include:

- Changes in procedures
- Changes in regulations
- Equipment upgrades or changes in equipment
- Errors or deficiencies in job performance
- Errors in data reporting

6 Mitigation Measures

In addition to procedural items stated in the preceding Sections of this WMP, mitigation measures stated under **Table 4** below will be applied for the duration of operation for the Facility.

Table 2: Waste related management and mitigation measures to be applied to the Facility

Control	Responsibility	Timing / Frequency
No materials or waste (as defined by the POEO Act) generated outside the Facility will be received at the Facility for storage, treatment, processing or reprocessing except as expressly permitted by the EPL.	Operations Management	On-going
The Facility will not receive or process more than 200,000 tonnes per annum (tpa), consisting of: a) urban wood residues; b) paper crumble; c) wastewater from Bayswater Power Station; d) drill mud process water; e) natural organic fibrous composting material; f) biosolids; g) garden waste; h) animal waste; and i) other material as approved by the EPA from time to time	Operations Management	On-going
The Facility will not receive or process food organic waste.	Operations Management	On-going
Plant and equipment shall be regularly maintained	Operations Management Site Coordinator	On-going
Ordering will be limited to only the required amounts of material	Operations Management Biosolids Manager	On-going
Materials shall be segregated to maximise reuse and recycling	Operations Management Site Coordinator	On-going
Routine checks will be taken of waste storage and sorting areas for cleanliness, hygiene and OH&S issues, and contaminated waste materials	Operations Management Site Coordinator	On-going
Separate skips and recycling bins maybe provided for effective waste segregation and recycling purposes, where not available, the waste contractor will separate at their Facility	Operations Management Contractor	On-going
Training and awareness of the requirements of the WMP and specific waste management strategies will be undertaken	Operations Management Environment Manager	On-going

Contaminated waste will be managed, transported and disposed of in accordance with legal requirements	Operations Management	On-going
Off-site waste disposal should be transported and disposed of in accordance with licensing requirements	Operations Management	On-going
Assessment of suspicious potentially contaminated materials, hazardous materials and liquid wastes will be undertaken	Operations Management Site Coordinator	On-going
Regular monitoring, inspection and reporting requirements will be undertaken, and findings implemented	Operations Management Site Coordinator	On-going
All waste materials (not including compost) removed from the site will only be directed to a waste management facility or premises lawfully permitted to accept the materials.	Operations Management Site Coordinator	On-going
All waste will be: (a) stored wholly within the designated waste storage areas; and (b) loaded and unloaded within the designated loading and unloading areas.	Operations Management Site Coordinator	On-going
Subcontractors will be informed of site waste management procedures.	Operations Management	On-going
All contractors and staff will receive a site specific environmental induction at the commencement of their employment at the development.	Operations Management Environmental Manager	On-going

7 Complaints and Incidents

7.1 Complaints management

A community complaints handling process has been developed to ensure all environmental complaints related to the operation of the Facility are promptly and effectively received, handled, and addressed. The complaints handling procedure is detailed within Section 7 of the OEMP.

7.2 Incident management

The management of environmental incidents, including potential pollution incidents, will be undertaken as outlined under Section 7 Incident Management in the Facility OEMP. See Section 7 of the OEMP for further detail on incident management procedure.

In accordance with Condition C10 of SSD-9418, immediately after becoming aware of an incident that threatens to cause or does cause material harm to the environment the Planning Secretary must be notified in writing via the Major Project website. Material harm is harm that:

a) Involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial; or

b) Results in actual or potential loss of property damage of an amount, or amounts in aggregate, exceeding $10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment).

A further detailed report shall be prepared and submitted following investigations of the causes and identification of necessary additional preventive measures. That report must be submitted to the Planning Secretary via the Major Projects website no later than seven days after the incident or potential incident.

7.3 Non-compliances

In the event it is determined that a non-compliance with waste legislation, EPL 7654 or SSD 9418 has occurred, notification procedures will be as per the described within Section 8 Compliance Management of the OEMP.

The notification to the Planning Secretary will include the following information:

- Identification of the development and the development application number
- The condition of consent that the development is non-compliant with
- The way in which is does not comply
- The reasons for the non-compliance (if known)
- What actions have been or will be taken to address the non-compliance

7.4 Contingency planning

If any unclassified waste material is encountered, it is to be classified in accordance with the NSW EPA *Waste Classification Guideline* prior to off-site disposal by a licensed waste contractor, to a licensed waster facility. A site investigation will commence to determine how/why the non-conforming material was received at site with appropriate actions identified to prevent a recurrence.

8 Monitoring and Reviewing

8.1 Inspections

The Site Coordinator and/or Operations Manager will be responsible for managing waste on a daily basis at the Facility. Daily inspections are undertaken to ensure feedstock material is located in its designated area of the hardstand pad and that the material being composted is done so in accordance with the Facilities *Compost Management Plan*.

8.2 Waste tracking & recording

In accordance with Clauses 27-33 of the *Protection of the Environment Operations (Waste) Regulation 2014*) and the NSW EPA *Waste Levy Guidelines* (2018) (as applicable), the following information shall be recorded and held electronically for the Facility operations for a minimum of six years:

- Incoming records
- Outgoing records
- Weighbridge records
- Waste classification/Resource Recovery Order of waste materials received onsite
- Waste classification/Resource Recovery Exemption/SESL Results Report (specifically for composted material) of waste materials transported from site
- Data from sampling and classification of wastes / materials onsite
- Records from sampling and classification of materials/wastes as relevant under a Resource Recovery Order and/or exemption

Records will be made available to the NSW EPA (or another authorised officer) upon request.

8.3 Reporting

Ongoing monitoring and reporting will be used to inform Facility compliance and will be summarised in the annual Compliance Report as per SSD 9418 condition C14. This Report will also inform Bettergrow on environmental performance and identify areas for improvement.

All reporting requirements for the Facility are detailed in Section 9 Monitoring & Reporting of the OEMP.

8.4 Review & auditing of this Plan

In accordance with SSD 9418 condition C8, this WMP will be reviewed and if necessary revised within 3 months of:

a) The submission of a Compliance Report under condition C14;
b) The submission of an incident report under condition C10;
c) The submission of an Independent Audit under condition C16;
d) The approval or any modification of the condition s of this consent; or
e) The issue of a direction of the Planning Secretary under condition A2(b) which requires a review.

Revisions will be submitted to the Planning Secretary for approval within six weeks of a review required under condition C8.

Appendix B
Air Quality Management Plan

AIR QUALITY MANAGEMENT PLAN

BETTERGROW NUTRIENT RECYCLING FACILITY, RAVENSWORTH

Bettergrow Pty Ltd

25 July 2024

Job Number 23051582

Prepared by
Todoroski Air Sciences Pty Ltd
Suite 2B, 14 Glen Street
Eastwood, NSW 2122
Phone: (02) 9874 2123
Fax: (02) 9874 2125
Email: info@airsciences.com.au

Air Quality Management Plan

Bettergrow Nutrient Recycling Facility Ravensworth

Rev no	Rev date	Author/Position	Details
2	25/07/2024	Jacqueline Blomberg Borg Environmental Manager	Review as per SSD-9418 condition C8(b) No change required

DOCUMENT CONTROL

Prepared by	Reviewed by
K Trahair	P Henschke

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1 INTRODUCTION

The Bettergrow Nutrient Recycling Facility (hereafter referred to as the Project) is located at Ravensworth No. 2 mine and is formally described as Lot 10 DP1204457 at 74 Lemington Road, Ravensworth, New South Wales (NSW). The Project is situated in the Upper Hunter Region, approximately 20 kilometres northwest of Singleton and 7km northwest of Camberwell. It is located on part of a capped open cut mining void which has been filled.

Figure 1-1 presents the Project setting and **Figure 1-2** presents the site layout. The area's identified in **Figure 1-2** as Detention Basin, Stage 1 and Stage 2 are the subject of this AQMP.

The activities at the Project include operating a composting facility to process up to 200,000 tonnes per annum (tpa) of materials.

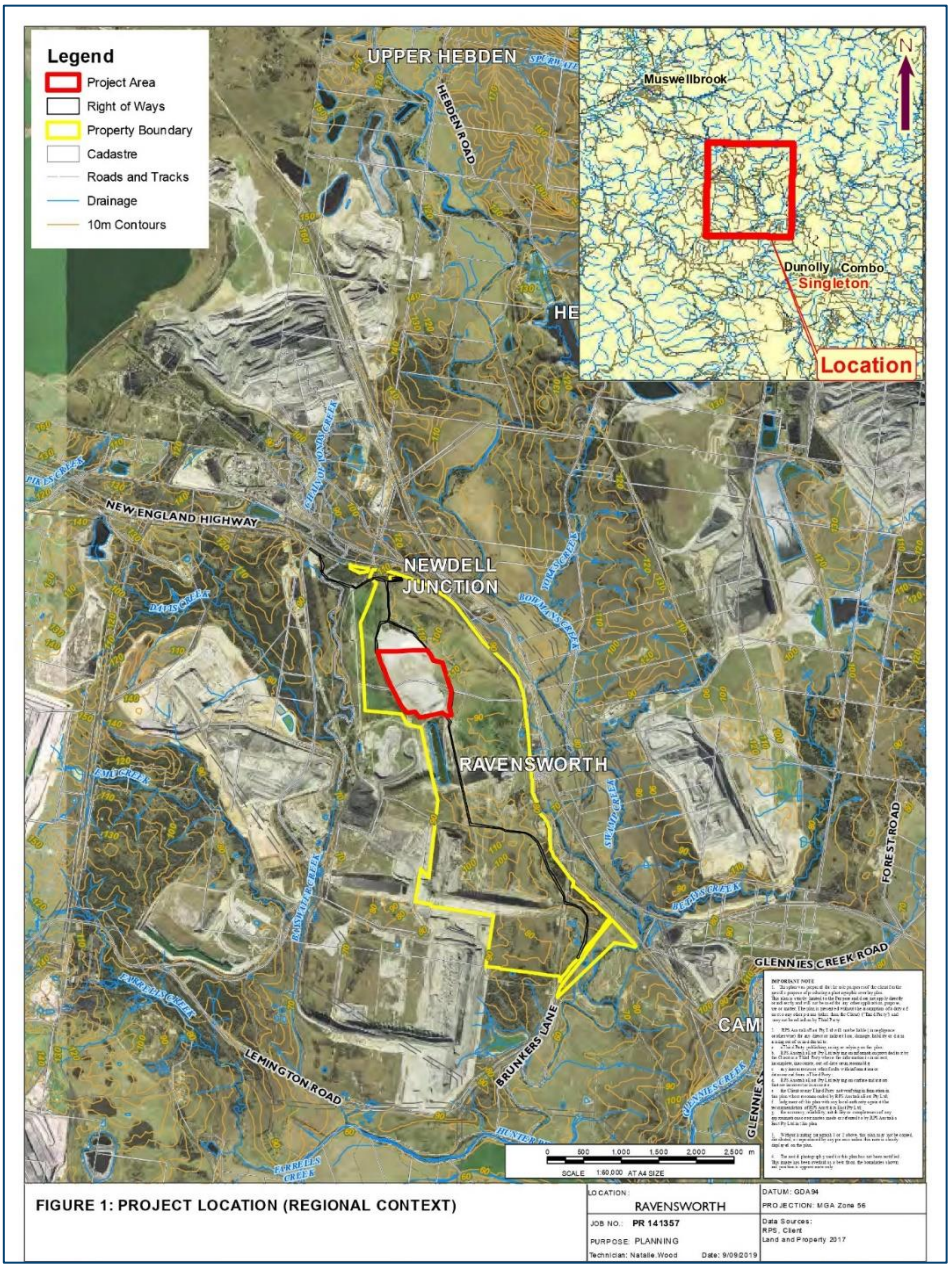


Figure 1-1: Project setting

Figure 1-2: Indicative site layout

1.1 Preamble

This Air Quality Management Plan (AQMP) has been prepared by Todoroski Air Sciences on behalf of Bettergrow Pty Ltd.

Todoroski Air Sciences is a specialist air quality and environmental consultancy whose personnel are members of the Clean Air Society of Australia and New Zealand.

This AQMP forms part of the Operational Environmental Management Plan (OEMP). This AQMP should be read in conjunction with the OEMP.

1.2 Purpose and objectives

This AQMP defines the best management practices applicable to the operation and details the management framework and mitigation actions to be taken when operating the Project to minimise the generation of air emissions.

The key objective of this AQMP is to ensure that any air quality impacts are minimised and managed in accordance with the site's Development Consent (SSD-9418).

1.3 Structure of this AQMP

This AQMP is structured as follows:

Section 2: Outlines the applicable statutory requirements.
Section 3: Provides baseline data.
Section 4: Outlines the applicable air quality criteria and performance indicators.
Section 5: Outlines the air quality management and control measures.
Section 6: Outlines the environmental performance.
Section 7: Outlines the review and improvement of the environmental performance.
Section 8: Provides references.

2 STATUTORY REQUIREMENTS

2.1 Development Consent

This AQMP has been prepared in accordance with the development consent for SSD-9418. **Table 2-1** presents the consent conditions relative to the air quality management plan.

Table 2-1: Relevant consent conditions

Development Consent (SSD-9418)	AQMP Section
Dust Minimisation	
B8. The Applicant must take all reasonable steps to minimise dust generated during all works authorised by this consent.	5.2
B9. During construction and operation of the development, the Applicant must ensure that: (a) exposed surfaces and stockpiles are suppressed by regular watering; (b) all trucks entering or leaving the site with loads have their loads covered; (c) trucks associated with the development do not track dirt onto the public road network; (d) public roads used by these trucks are kept clean; and (e) land stabilisation works are carried out progressively on site to minimise exposed surfaces.	5.2
Air Quality Discharges	
B10. The Applicant must install and operate equipment in line with best practice to ensure that the development complies with all load limits, air quality criteria/air emission limits and air quality monitoring requirements as specified in the EPL applicable to the site.	5.2
Air Quality Management Plan	
B11. Prior to the commencement of operation of the development, the Applicant must prepare an Air Quality Management Plan (AQMP) to the satisfaction of the Planning Secretary. The AQMP must form part of the OEMP required by condition C5. The AQMP must:	This plan
(a) be prepared by a suitably qualified and experienced person(s);	1.1
(b) include the Management and Mitigation Measures included in Appendix 2;	5.2
(c) identify potential emissions from all sources of the development;	5.1
(d) identify the control measures that will be implemented for each emission source; and	5.2
(e) describe the following:	-
(i) record keeping;	6.1, 6.5 & 6.6
(ii) complaints register; and	6.6
(iii) response procedures.	5.3
B12. The Applicant must: (a) not commence operation until the Air Quality Management Plan required by condition B11 is approved by the Planning Secretary; and (b) implement the most recent version of the Air Quality Management Plan approved by the Planning Secretary for the duration of the development.	7.1
Odour Management	
B13. The Applicant must ensure the development does not cause or permit the emission of any offensive odour (as defined in the POEO Act).	5.2
Management Plan Requirements	
C1. Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:	-
(a) detailed baseline data;	3
(b) details of: (i) the relevant statutory requirements (including any relevant approval, licence or lease conditions); (ii) any relevant limits or performance measures and criteria; and (iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;	2, 4.1 & 6.2
(c) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;	5.2
(d) a program to monitor and report on the: (i) impacts and environmental performance of the development; and (ii) effectiveness of the management measures set out pursuant to paragraph (c) above;	6
(e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;	5.3

Development Consent (SSD-9418)	AQMP Section
(f) a program to investigate and implement ways to improve the environmental performance of the development over time;	7
(g) a protocol for managing and reporting any: (i) incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria); (ii) complaint; (iii) failure to comply with statutory requirements; and	5.3, 6.4, 6.5 & 6.6
(h) a protocol for periodic review of the plan.	7.1
Revision of Strategies, Plans and Programs	
C8. Within three months of: (a) the submission of a Compliance Report under condition C14; (b) the submission of an incident report under condition C10; (c) the submission of an Independent Audit under condition C16; (d) the approval of any modification of the conditions of this consent; or (e) the issue of a direction of the Planning Secretary under condition A2(b) which requires a review, the strategies, plans and programs required under this consent must be reviewed, and the Planning Secretary must be notified in writing of the outcomes of any review. C9. If necessary to either improve the environmental performance of the development, cater for a modification or comply with a direction, the strategies, plans and programs required under this consent must be revised, to the satisfaction of the Planning Secretary. Where revisions are required, the revised document must be submitted to the Planning Secretary for approval within six weeks of the review required under condition C8, or such other timing as agreed by the Planning Secretary.	7.1
Incident Notification, Reporting and Response	
C10. The Planning Secretary must be notified in writing via the Major Projects website immediately after the Applicant becomes aware of an incident. The notification must identify the development (including the development application number and the name of the development if it has one) and set out the location and nature of the incident. Subsequent notification requirements must be given, and reports submitted in accordance with the requirements set out in Appendix 3.	6.5
Non-Compliance Notification	
C11. The Planning Secretary must be notified in writing via the Major Projects website within seven days after the Applicant becomes aware of any non-compliance. C12. A non-compliance notification must identify the development and the application number for it, set out the condition of consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance. C13. A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.	6.4
Compliance Reporting	
C14. Within the first year of commencement of operation of the development, and in the same month each subsequent year (or such other timing as agreed by the Planning Secretary), the Applicant must submit a Compliance Report to the Planning Secretary reviewing the environmental performance of the development to the satisfaction of the Planning Secretary. Compliance Reports must be prepared in accordance with the Compliance Reporting Post Approval Requirements (Department 2020) and must also: (a) identify any trends in the monitoring data over the life of the development; (b) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and (c) describe what measures will be implemented over the next year to improve the environmental performance of the development. C15. The Applicant must make each Compliance Report publicly available no later than 60 days after submitting it to the Planning Secretary and notify the Planning Secretary in writing at least seven days before this is done.	6.3
Independent Audit	

Development Consent (SSD-9418)	AQMP Section
C16. Within one year of the commencement of operation of the development, and every three years after, unless the Planning Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit (Audit) of the development. Audits must: (a) be prepared in accordance with the Independent Audit Post Approval Requirements (Department 2020) (b) be led and conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Planning Secretary; and (c) be submitted to the satisfaction of the Planning Secretary within three months of commissioning the Audit (or within another timeframe agreed by the Planning Secretary). C17. In accordance with the specific requirements in the Independent Audit Post Approval Requirements (Department 2020), the Applicant must: (a) review and respond to each Independent Audit Report prepared under condition C16 of this consent; (b) submit the response to the Planning Secretary and any other NSW agency that requests it, together with a timetable for the implementation of the recommendations; (c) implement the recommendations to the satisfaction of the Planning Secretary; and (d) make each Independent Audit Report and response to it publicly available no later than 60 days after submission to the Planning Secretary and notify the Planning Secretary in writing at least 7 days before this is done.	7.2

2.2 Environment Protection Licence

At the time of writing, an application for a variation to the existing Environment Protection Licence (EPL) 7654 for the processing of 200,000 tonnes of material per annum has not yet been submitted/approved. This management plan is to be updated in accordance with any relevant requirements of the latest EPL once received.

At the time of writing, EPL 7654 contains the following conditions which specifically relate to air quality:

Condition L5 Potentially Offensive Odour

- *L5.1 No condition of this licence identifies a potentially offensive odour for the purposes of section 129 of the Protection of the Environment Operations Act 1997.*

Note: Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.

Condition O3 Dust

- *O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.*
- *O3.2 Trucks entering and leaving the premises that are carrying loads must be covered at all times except during loading and unloading.*
- *O3.3 Leachate is not to be used for dust suppression on haul roads.*
- *O3.4 The licensee must ensure that no material, including sediment or oil, is tracked from the premises.*

3 BASELINE DATA

This section describes the existing baseline environment including the climate, meteorology and ambient air quality in the area surrounding the Project.

3.1 Local climatic conditions

Long-term climatic data from the closest Bureau of Meteorology (BoM) weather station at Cessnock Airport (Site No. 061260) were analysed to characterise the local climate in the proximity of the Project. Cessnock Airport is located approximately 48km southeast of the Project.

Table 3-1 and **Figure 3-1** present a summary of data from the Cessnock Airport collected over a 13 to 32 year period for the various meteorological parameters.

The data indicate that January is the hottest month with a mean maximum temperature of 30.4 degrees Celsius (°C) and July is the coldest month with a mean minimum temperature of 4.1°C.

Rainfall decreases during the cooler months, with an annual average rainfall of 757.8 millimetres (mm) over 74.9 days. The data indicate that February is the wettest month with an average rainfall of 102.1mm over 8.1 days and August is the driest month with an average rainfall of 34.2mm over 4.4 days.

Relative humidity levels exhibit variability over the day and seasonal fluctuations. Mean 9am relative humidity ranges from 60% in October to 80% in March and June. Mean 3pm relative humidity levels range from 42% in August and September to 55% in June.

Wind speeds exhibit seasonal variations with lower wind speed records for 9am and higher observations for 3pm conditions. Mean 9am wind speeds range from 8.7 kilometres per hour (km/h) in March to 14.0km/h in September. Mean 3pm wind speeds range from 14.2km/h in May to 19.1km/h in September.

Table 3-1: Monthly climate statistics summary – Cessnock Airport

Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann.
Temperature													
Mean max. temp. (°C)	30.4	29.3	27.2	24.3	20.8	17.9	17.5	19.5	22.6	25.3	26.9	29.0	24.2
Mean min. temp. (°C)	17.1	16.9	14.9	10.7	7.5	5.7	4.1	4.5	7.1	10.0	13.0	15.1	10.5
Rainfall													
Rainfall (mm)	75.5	102.1	88.5	54.1	38.3	55.0	36.5	34.2	44.0	56.0	76.0	80.1	757.8
No. of rain days (≥1mm)	6.6	8.1	8.2	5.7	5.2	5.6	4.3	4.4	5.7	6.6	7.1	7.4	74.9
9am conditions													
Mean temp. (°C)	23.2	22.2	20.2	17.8	14.1	11.0	10.1	12.2	16.2	19.1	20.2	22.2	17.4
Mean R.H. (%)	68	76	80	76	79	80	76	69	63	60	65	65	71
Mean W.S. (km/h)	11.5	10.2	8.7	10.1	10.4	11.5	11.5	13.0	14.0	13.7	12.7	11.8	11.6
3pm conditions													
Mean temp. (°C)	28.7	27.3	25.7	23.0	19.6	16.8	16.4	18.6	21.2	23.4	25.0	27.3	22.8
Mean R.H. (%)	46	53	53	52	54	55	49	42	42	44	47	46	49
Mean W.S. (km/h)	18.5	17.3	15.7	14.6	14.2	15.1	15.3	17.3	19.1	18.7	18.6	18.3	16.9

Source: **Bureau of Meteorology, 2023**

R.H. – Relative Humidity, W.S. – wind speed

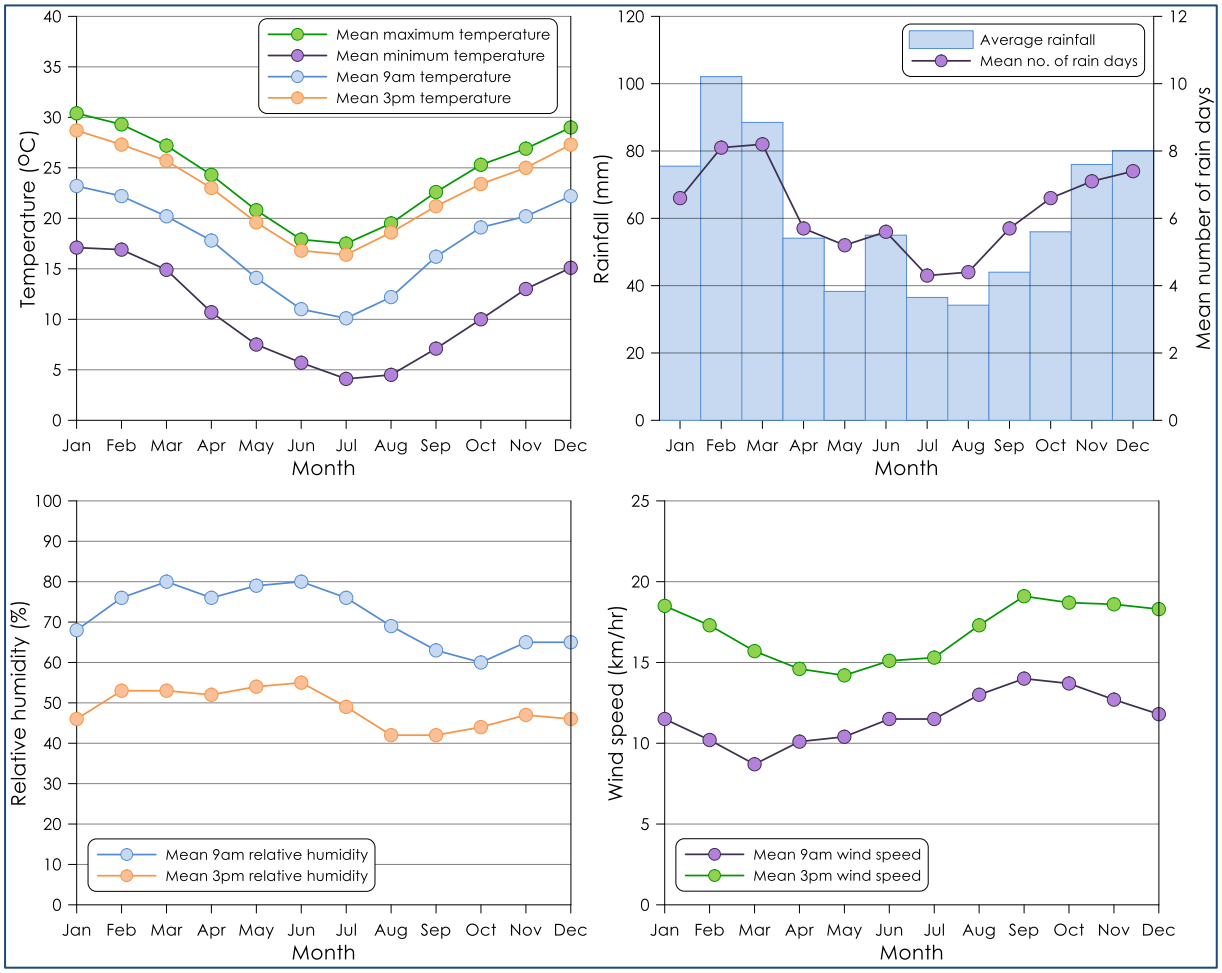


Figure 3-1: Monthly climate statistics summary – Cessnock Airport

3.2 Local meteorological conditions

Annual and seasonal windroses for the NSW Department of Planning and Environment (DPE) monitoring station at Camberwell during the 2015 to 2022 period are presented in **Figure 3-2**. The Camberwell monitoring station is located approximately 6km to the southeast of the Project.

Analysis of the windroses shows that the winds typically flow along a northwest to a southeast axis, with very few winds arising from the north-east and south-west quadrants. In summer, winds from the southeast and east-southeast are most frequent. During winter, winds from the northwest and west-northwest are most frequent. Autumn and spring have a similar distribution pattern as the annual windrose with winds greatest from the southeast, east-southeast, northwest and west-northwest.

Figure 3-2 : Annual and seasonal windroses – Camberwell (2015 to 2022)

3.3 Local air quality monitoring

The main sources of air pollutants in the area surrounding the Project are emissions from surrounding mining operations and from other anthropogenic activities such as wood heaters and motor vehicle exhaust.

Data from the nearest air quality monitors operated by the NSW DPE at Camberwell are used to characterise the baseline background pollutant levels in the vicinity of the Project.

3.3.1 PM_{10} monitoring

A summary of the available PM_{10} monitoring data from 2015 to 2022 for the Camberwell monitoring station is presented in **Table 3-2**. Recorded 24-hour average PM_{10} concentrations are presented in **Figure 3-3.**

The data indicate that annual average PM_{10} levels were generally below the National Environmental Protection (Ambient Air Quality) Measure (NEPM) standard of 25µg/m^3. Elevated annual levels were recorded in 2017, 2018 and 2019. The 24-hour average NEPM standard of 50µg/m^3 was exceeded on occasion. It is noted that the elevated PM_{10} concentrations recorded in late 2019 and early 2020 are attributed to the "Black Summer" NSW bushfires.

Table 3-2: Summary of PM_{10} levels from Camberwell DPE station (µg/m^3)

Year	Annual average
NEPM standard 25µg/m^3	
2015	22.0
2016	24.5
2017	**27.4**
2018	**31.1**
2019	**39.9**
2020	24.3
2021	20.6
2022	16.0
Year	**Maximum 24-hour average**
NEPM standard 50µg/m^3	
2015	**86.7**
2016	**65.7**
2017	**101.5**
2018	**243.9**
2019	**294.4**
2020	**103.3**
2021	**75.5**
2022	42.4

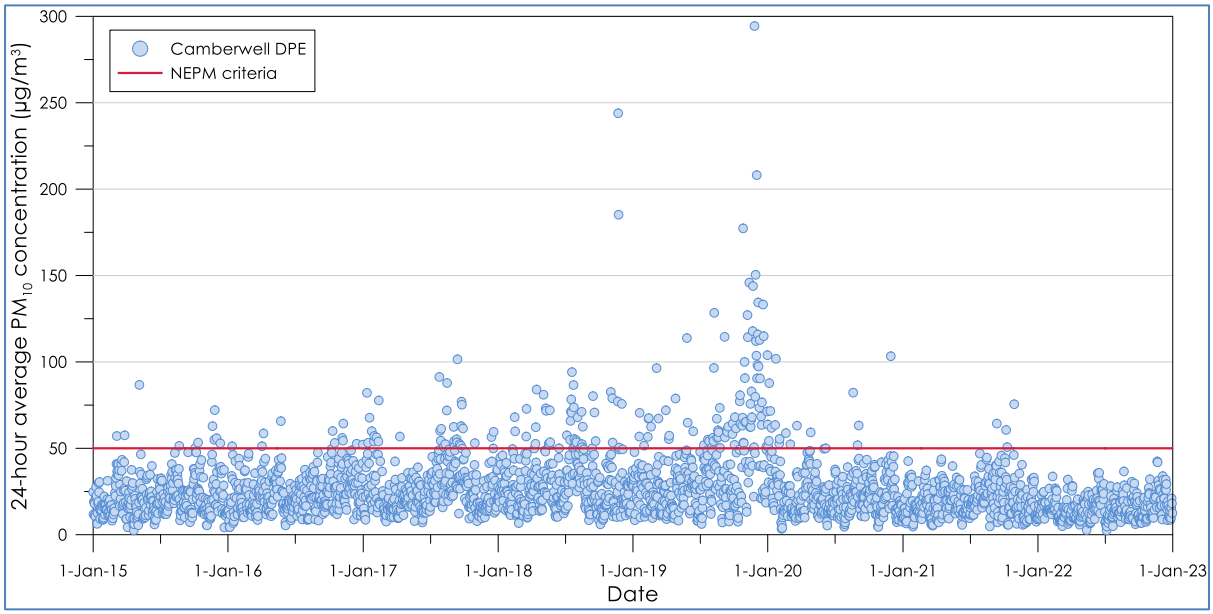


Figure 3-3: 24-hour average PM_{10} concentrations

3.3.2 $PM_{2.5}$ monitoring

A summary of the available from 2015 to 2022 for the Camberwell monitoring station is presented in **Table 3-3**. Recorded 24-hour average $PM_{2.5}$ concentrations are presented in **Figure 3-4**.

The data indicate that annual average $PM_{2.5}$ levels were generally below the NEPM standard of 8µg/m^3. The 24-hour average NEPM standard of 25µg/m^3 was exceeded in 2019 and 2020. Similar to the PM_{10} monitoring data, the elevated $PM_{2.5}$ concentrations recorded in late 2019 and early 2020 can be attributed to the "Black Summer" NSW bushfires.

Table 3-3: Summary of $PM_{2.5}$ levels from Camberwell DPE station (µg/m^3)

Year	Annual average
NEPM standard 8µg/m^3	
2015	7.8
2016	7.2
2017	7.5
2018	7.4
2019	**8.4**
2020	**10.5**
2021	7.5
2022	5.7
Year	**Maximum 24-hour average**
NEPM standard 25µg/m^3	
2015	23.9
2016	21.1
2017	24.7
2018	22.6
2019	**80.0**
2020	**44.1**
2021	19.6
2022	13.1

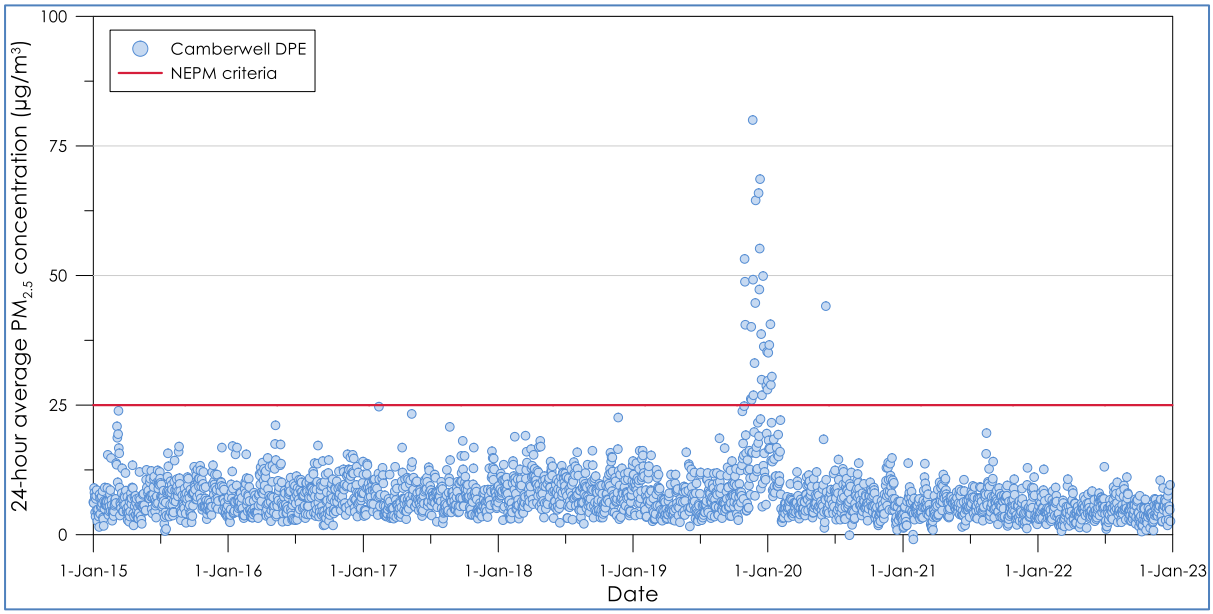


Figure 3-4: 24-hour average $PM_{2.5}$ concentrations

4 AIR QUALITY CRITERIA AND PERFORMANCE INDICATORS

There are no load limits, air quality criteria or air emission limits specified for the facility in the EPL and development consent conditions.

4.1 Performance indicators

Table 4-1 presents the air quality related key performance indicators that will be used to assess the air quality performance of the Project.

Table 4-1: Key performance indicators

Measure	Key performance indicator
Training	All site personnel have completed air quality training
Implementation of the management practices	Annual compliance checklist shows that all management practices listed in this plan were implemented
Visual monitoring	No excessive dust visible beyond boundary
Field odour surveys	No offensive odour detected beyond the boundary
Validated air quality and odour complaints are minimised and appropriate management actions are implemented following receipt of a complaint	No validated air quality complaints

5 AIR QUALITY MANAGEMENT AND CONTROL MEASURES

The activities at the site will generate some amount of odour and dust, therefore it is prudent to take reasonable and practicable measures to prevent and minimise excessive generation of emissions which may affect the surrounding environment.

The effectiveness of air quality management and control measures will be assessed and continually improved through the plan review (**Section 7.1**).

5.1 Air pollutant sources

The most significant pollutants generated from the Project operation are odour and dust as identified in the Project Air Quality Impact Assessment (AQIA) (**Advanced Environmental Dynamics, 2019**) and Response to Submissions (RtS) (**Space Urban, 2022**).

The following potential sources of odour are identified in the AQIA and RtS:

- Material composting windrows;
- Finished product; and
- Leachate water contained in the storage dam.

The key source of dust emissions identified in the AQIA and RtS is from vehicle movements on unsealed haul roads.

In addition, wind erosion of exposed surfaces and stockpiles are considered to be potential sources of dust emissions.

Greenhouse gas (GHG) emissions were considered in the AQIA and were verified via direct measurement. Results of the GHG assessment concluded that emissions associated with the facility will be immaterial.

5.2 Control measures and management practices

The operational air quality management system includes a range proactive and reactive control measures and management practices.

Bettergrow will install and operate equipment in line with best practice to minimise the generation of air emissions and ensure compliance with all air quality requirements.

All reasonable steps are undertaken to minimise dust generated by the Project and to ensure that the Project does not cause emission of any offensive odour.

Table 5-1 presents the operational air quality control measures and management practices implemented for the Project. Bettergrow is to keep an annual compliance checklist of control measures and management practices to confirm they are being implemented.

Table 5-1: Operational air quality control measures and management practices

Activity	Control measures and management practice
General	Training is provided to all site personnel on appropriate odour and dust control practices and the requirements per this plan.
	The weather forecast is checked daily, and appropriate management measures are implemented prior to adverse weather to minimise particulate emissions from the site.
	If adverse weather conditions occur during operations, activities are assessed and modified as required.
	Staff will undertake visual inspections of dust generation to ensure dust is not spreading beyond the site boundary.
	The site maintains a Complaints Register, which includes air quality and odour.
	Odour monitoring will be undertaken as required should an issue be identified at a sensitive receiver.
	Recycled materials will be incorporated into the Project where possible.
Plant and equipment	All vehicles/plant and machinery will be turned off when not in use.
	Plant and equipment are maintained and operated according to manufacturer's specifications.
	The energy efficiency and related carbon emissions will be considered in the selection of vehicle and plant equipment.
	All vehicles and machinery will be fitted with OEM exhaust systems to ensure exhaust emissions are within accepted standards.
	The use of alternative fuels and power sources for construction plant and equipment will be investigated and implemented, where appropriate.
Hauling	Trucks entering and leaving the premises that are carrying loads must be covered at all times except during loading and unloading.
	Loads leaving the site will be watered as required to prevent dust generation.
	Leachate is not to be used for dust suppression on haul roads.
	Public roads used by trucks associated with the site are to be kept clean. Bettergrow must ensure that no material, including sediment or oil, is tracked from the premises onto the public road network.
	Truck travel speeds on unpaved areas are capped at 40km.
	Hardstand pads and the internal roadways will be regularly watered to suppress dust using site water carts.
	Wherever practicable, vehicles to leave site with full loads to reduce the number of traffic movements and diesel consumption.
Material handling	Only approved wastes will be accepted onsite.
	All odorous wastes are to be mixed immediately with less odorous wastes to reduce odour generation. Where this is not possible odorous wastes will be covered temporarily with green waste or saw dust.
	Homogeneous mixing will be undertaken.
	Compost materials will be watered to a moisture content such as not to create an anaerobic environment.
	Onsite dams, stormwater, and leachate to be suitably managed through separation, reuse, and sampling.
Exposed areas/stockpiles	The extent of exposed surfaces and stockpiles is kept to a minimum.
	Land stabilisation works are carried out progressively on site to minimise exposed surfaces.
	Exposed surfaces and stockpiles are suppressed by regular watering.
	Windrows will be managed in accordance with site operational procedure for windrow construction and maintenance.
	Windrows and stockpiles will be maintained by water cart and will have a minimum moisture content of 45%, with increased watering to occur prior to adverse weather conditions.
	Gravel or mulch will be spread to better contain fine soil particles.

5.3 Contingency plan response procedure

In the event that a performance indicator (refer to **Section 4.1**) has not been met, Bettergrow will implement the following contingency plan to manage any unpredicted impacts and their consequences to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible:

- Notify the Operations Manager and Environmental Manager;
- Determine if the unpredicted impact constitutes a non-compliance or incident that requires external reporting per **Sections 6.4** and **6.5** respectively;
- Investigate and identify the cause and contributing factors to the event;
- Consider remedial response and/or adaptive management options to manage the identified impacts;
- Implement the appropriate course of action to ensure that the exceedance/incident ceases and does not reoccur; and
- Review this AQMP per **Section 7.1**, as required.

5.4 Training

All employees and contractors working on-site will undergo training relating to air quality management issues. Training will take place initially through a site induction and then on an on-going basis through toolbox talks.

The training will address elements related to air quality management including:

- General environmental awareness;
- The requirements of this AQMP;
- Relevant legislation;
- Roles and responsibilities for air quality management;
- Air quality mitigation and management measures; and
- Procedure to be implemented in the event of an incident/ non-compliance.

Any change to this management plan and its implementation will be communicated to all staff as required through toolbox talks.

Training records will be stored on the electronic management system DataStation.

6 ENVIRONMENTAL PERFORMANCE

6.1 Monitoring

6.1.1 Visual dust monitoring

Visual dust monitoring is to be undertaken continually during operation. **Table 6-1** presents the visual dust trigger action response plan (TARP). If a visible dust plume generated by Bettergrow is observed with the potential to cross or having already crossed the facility boundary, an immediate investigation of any dust sources must be undertaken together with appropriate actions to eliminate any identified excessive dust.

Table 6-1: Visual dust TARP

Alert level	Trigger	Action
Green	No visible dust leaving the site	Continue visual monitoring
Amber	Visible dust plume observed with potential to cross facility boundary	Review and investigate activities and respective control measures. Where appropriate, implement additional remedial measures.
Red	Visible dust plume observed crossing the facility boundary	Undertake an investigation of dust generating activities and if necessary, modify or cease dust generating activities.

A site visual dust log is to be kept by Bettergrow recording any observation of excessive dust generated by the Project. Records are to include the following details where relevant:

- the date, time, duration and location of the observation;
- meteorological conditions at the time of observation (obtained from the nearest/most suitably representative weather station with available data);
- whether the visual dust plume travelled off-site;
- any source/s of dust specifically identified as contributing to the visual dust plume; and
- the action taken by Bettergrow to minimise dust levels and prevent the issue from recurring.

Records of visual dust monitoring are to be kept for at least 4 years after the monitoring to which they relate took place.

6.1.2 Field odour surveys

Field odour surveys are to be conducted as required, should an issue be identified at a sensitive receptor.

Field odour surveys can be conducted by Bettergrow personnel. A suitable assessor should not be overly or underly sensitive to odour and must not be suffering from any illness or allergy which impairs the olfactometry sense.

Field odour surveys should be conducted when the identified receptor(s) is downwind of the Project, wind speeds are less than 5m/s, and there is no rainfall. Monitoring locations for each survey should be selected with consideration of publicly/privately accessible areas in the vicinity of the identified receptor(s).

The field odour survey methodology is based on a simplified version of the German Standard VDI 3940 "Determination of Odorants in Ambient Air by Field Inspections". This prescribes a methodology for the quantification of odour by field observers (assessors) in relation to odour frequency, intensity and character.

During the field odour survey, a measurement is taken at each location over a period of 10 minutes. Over the ten-minute interval, the assessor tests the ambient air at 10-second intervals and records their observation of the intensity of the odour and the odour characteristic every 10 seconds.

Table 6-2 and **Table 6-3** present the odour intensity rating scale and suggested odour characteristic descriptors, respectively, suitable to be applied for the field odour surveys. Note that additional odour type codes may be used in the event that there is a distinct other such odour present. Observations of odour character which relate to the Project are to be noted.

Records of field odour surveys are to be kept for at least 4 years after the monitoring to which they relate took place.

Table 6-2: Odour intensity rating scale

Rating	Intensity description
0	No odour
1	Very slight
2	Slight
3	Distinct
4	Strong
5	Very strong
6	Extremely strong

Table 6-3: Odour characteristic descriptors

Odour type code	Odour characteristic descriptor	Odour type code	Odour characteristic descriptor
1	Fragrant	9	Faecal, manure, sewer
2	Household gas	10	Fishy
3	Burnt smoky	11	Diesel/car fumes
4	Herbal, green, cut grass	12	Seaweed, mangroves
5	Oily, fatty	**13**	**Compost**
6	Rotten eggs, sulfide	14	Musty, earthy, mouldy
7	Sour, body odour	15	Other
8	Meaty		

6.2 Performance evaluation

There are no load limits, air quality criteria or air emission limits specified in the SSD-9418 consent conditions or EPL 7654.

Table 6-4 indicates the evaluation schedule for each key performance indicator.

Where performance indicators are not being met, the contingency plan per **Section 5.3** is to be implemented.

Table 6-4: Key performance indicators

Key performance indicator	Performance evaluation schedule
All site personnel have completed air quality training	Monthly
Annual compliance checklist shows that all management practices listed in this plan were implemented	Annual
No excessive dust visible beyond boundary	Continuous
No offensive odour detected beyond the boundary	As required
No validated air quality complaints	As required

6.3 Compliance reporting

Within the first year of commencement of operation of the development, and in the same month each subsequent year (or such other timing as agreed by the Planning Secretary), the Applicant must submit a Compliance Report to the Planning Secretary reviewing the environmental performance of the development to the satisfaction of the Planning Secretary. Compliance Reports must be prepared in accordance with the Compliance Reporting Post Approval Requirements (Department 2020) and must also:

- identify any trends in the monitoring data over the life of the development;
- identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and
- describe what measures will be implemented over the next year to improve the environmental performance of the development.

The Applicant must make each Compliance Report publicly available no later than 60 days after submitting it to the Planning Secretary and notify the Planning Secretary in writing at least seven days before this is done.

6.4 Non-compliance

The Planning Secretary must be notified in writing via the Major Projects website within seven days after the Applicant becomes aware of any non-compliance.

A non-compliance notification is to set out the condition of consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

Compliance management is detailed further in the OEMP.

6.5 Incident reporting

The Planning Secretary must be notified in writing via the Major Projects website immediately after the Applicant becomes aware of an incident. The notification must identify the development (including the development application number and the name of the development if it has one) and set out the location and nature of the incident. Subsequent notification requirements must be given, and reports

submitted in accordance with the requirements set out in Appendix 3 Incident Notification and Reporting Requirements of SSD-9418.

A record of Environmental incidents will be kept in Bettergrow's DataStation electronic recording system.

Incident management is detailed further in the OEMP.

6.6 Complaints protocol

Complaints relating to the Facility can be received via:

- Bettergrow Head Office – 1300 105 500;
- Bettergrow website – www.bettergrow.com.au/contact; and/or
- Through a government agency (i.e., Council, DPE or EPA).

All employees and contractors who receive a complaint, either verbal or written, are to immediately notify the Site Management.

Once Bettergrow has received a verbal or written complaint, the Environment Manager or their nominated delegate will:

- Undertake an immediate investigation into the nature/cause of the enquiry and/or complaint;
- Make initial contact with the community or stakeholder representative within 48 hours to clarify the reason for the enquiry and/or complaint and to notify of the investigation process including an appropriate re-notification time;
- Record the complaint on the Community Complaints register.
- Further investigate the enquiry and/or complaint and provide the community or stakeholder representative with an explanation of the cause and details of any actions taken to mitigate its effect where applicable.

The Community Complaints Register will include the following details where available:

- the date and time of the complaint;
- the method by which the complaint was made;
- any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
- the nature of the complaint;
- the action taken by Bettergrow in relation to the complaint, including any follow-up contact with the complainant; and
- if no action was taken by Bettergrow, the reasons why no action was taken.

The record of a complaint must be kept for at least 4 years after the complaint was made.

Further details on the complaints management process can be found in the OEMP.

7 REVIEW AND IMPROVEMENT OF ENVIRONMENTAL PERFORMANCE

7.1 Plan review and continuous improvement

This plan will be reviewed within three months of:

- the submission of a Compliance Report;
- the submission of an incident report;
- the submission of an Independent Audit;
- the approval of any modification of the conditions of this consent; or
- the issue of a direction of the Planning Secretary which requires a review,

This review includes where relevant:

- Any changes to site operations with the potential for air quality impacts;
- Monitoring data trends;
- Incidents and non-compliances;
- Complaints records;
- Measures to be implemented to improve the environmental performance of the Project.

The Planning Secretary must be notified in writing of the outcomes of any review.

The most recent approved version of this AQMP as approved by the Planning Secretary is to be implemented.

7.2 Independent audits

Within one year of the commencement of operation of the development, and every three years after, unless the Planning Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit (Audit) of the development. Audits must:

- be prepared in accordance with the Independent Audit Post Approval Requirements (Department 2020)
- be led and conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Planning Secretary; and
- be submitted to the satisfaction of the Planning Secretary within three months of commissioning the Audit (or within another timeframe agreed by the Planning Secretary).

The Applicant must:

- review and respond to each Independent Audit Report prepared under condition C16 of the SSD-9418 consent;

- submit the response to the Planning Secretary and any other NSW agency that requests it, together with a timetable for the implementation of the recommendations;
- implement the recommendations to the satisfaction of the Planning Secretary; and
- make each Independent Audit Report and response to it publicly available no later than 60 days after submission to the Planning Secretary and notify the Planning Secretary in writing at least 7 days before this is done.

8 REFERENCES

Advanced Environmental Dynamics (2019)

"Greenspot Ravensworth Greenhouse Gas, odour and Dust Assessments", prepared by Advanced Environmental Dynamics Pty Ltd, August 2019.

Bureau of Meteorology (2023)

Climate statistics for Australian locations, Bureau of Meteorology website, accessed May 2023. http://www.bom.gov.au/climate/averages

Space Urban (2022)

"Greenspot Hunter Valley Nutrient Recycling Facility Response to Submissions", prepared by Space Urban, June 2022.

Appendix C
Surface & Groundwater Management Plan

Surface and Groundwater Management Plan

Ravensworth Composting Facility, 74 Lemington Road, Ravensworth NSW

22 May 2025

Document Information

Surface and Groundwater Management Plan
Ravensworth Composting Facility - 74 Lemington Road, Ravensworth NSW

Document Control Table

Revision	Date	Prepared By	Author	Reviewed	Approved	Detail
0	23/06/2023	Senversa	Matthew Beasley	Colin Stapleton Andrei Woinarski	Colin Stapleton Andrei Woinarski	DRAFT
1	06/07/2023	Senversa	Matthew Beasley	Colin Stapleton	Colin Stapleton	Final
2	12/08/2024	Borg	Jacqueline Blomberg		Jacqueline Blomberg	Review and update as per SSD-9418 condition C8(b) (incident at the western leachate dam) Update to reflect current site operations Add ERSED Control Plan at Appendix B, Forms now Appendix C
3	1/10/2024	Borg	Jacqueline Blomberg	Victor Bendevski	Victor Bendevski	Reviewed and updated as per SSD-9418 condition C8(c) Updates to Section 5.2, Table 5.2 and Table 5.3
4	22/05/2025	Borg	Jacqueline Blomberg	Victor Bendevski	Victor Bendevski	Update Tables 1.1, 2.2, 2.3 and 5.3, Sections 4.3.1 and 5.1 to reflect current site conditions and Appendix A

Project Manager: Matthew Beasley

Project Director: Emma Walsh

Disclaimer and Limitations:

Contents

Tables in Text

Appendices

List of Acronyms

Acronym	Definition
AEP	Annual Exceedance Probability
AS	Australian Standard
AST	Aboveground storage tank
BoM	Bureau of Meteorology
CMP	Composting Management Plan
COC	Conditions of Consent
DO	Dissolved oxygen
DP	Deposited Plan
EC	Electrical conductivity
EIS	Environmental Impact Statement
EPA	Environment Protection Authority
EPL	Environmental Protection Licence
FGO	Food and garden organics
GDE	Groundwater dependent ecosystems
m	Metre
m^2	Square metres
mm	millimetres
m AHD	Metres Australian Height Datum
m bgl	Metres below ground level
mg/L	Milligrams per litre
mL	millilitres
ML	Megalitres
MW	Monitoring well
NATA	National Association of Testing Authorities
NEPC	National Environment Protection Council
NSW	New South Wales
OEMP	Operational Environmental Management Plan
POEO Act	Protection of the Environment Operations Act 1997
ppm	Parts per million
QA	Quality assurance
QC	Quality control
SEE	Statement of Environmental Effects
SGWMP	Surface and Groundwater Management Plan
SSD	State Significant Development
TDS	Total dissolved solids
TOC	Total organic carbon
TPH	Total petroleum hydrocarbons
TSS	Total suspended solids

1.0 Introduction and Objectives

1.1 General

Senversa Pty Ltd (Senversa) was engaged by Borg, on behalf of Bettergrow Pty Ltd (Bettergrow), to prepare a Surface water and Groundwater Management Plan (SGWMP) for the operation of the Ravensworth Composting Facility located at 74 Lemington Road, Ravensworth, New South Wales (NSW) 2330 (the site).

The SGWMP is required as a subordinate plan within the Operational Environmental Management Plan (OEMP), prepared by Bettergrow, for the operation of the upgraded Ravensworth Composting Facility (the Facility) under the State Significant Development 9418 (SSD-9418).

The site location is presented on Figure 3 (RPS, Sept 2019) and site layout (post redevelopment) in shown in Bettergrow's Infrastructure Plan 0011 (refer to **Appendix A)**.

1.2 Document Context

Bettergrow has redeveloped the site to expand the existing resource recovery facility to process up to 200,000 tonnes per annum of organic waste.

An Environmental Impact Statement (EIS) (RPS, Nov 2019) was developed to assess, and propose mitigation measures for the environmental and social implications of proceeding with the development to meet the Secretary's Environmental Assessment Requirements (SEARs) for the proposed facility, issued by the Department of Planning and Environment (DP&E) on 11 July 2018.

Consent for SSD-9418 was granted on 31 August 2022 by the DP&E and permits the expansion of the existing resource recovery facility on the basis that consent conditions are met. That includes development of this SGWMP in accordance with C1 of the consent conditions (refer to **Section 1.5** below).

The Development Consent was modified (MOD 1) on 6 December 2023 to remove the requirement for a weighbridge and changes to limits of consent waste condition to allow Bettergrow more flexibility around the types of materials that can be brought onto site for inclusion in compost.

1.3 Key Development Approvals

Approval for SSD-9418 permitted redevelopment of the site, with the key works approved for the site comprising:

- Receiving and processing up to 200,000 tonnes per annum of organic waste.
- Water drainage and leachate works.
- Construction of hardstand areas and associated infrastructure.

1.4 SGWMP Scope and Objectives

The objective of this SGWMP is to document the minimum management controls, procedures, and monitoring requirements for surface water, groundwater and leachate in relation to the operations of the site in line with the requirements outlined in the conditions of the consent (COC) C1, B18, B19 and B20, and Appendix 2 – Surface Water and Groundwater of the SSD-9418 Development Consent.

1.5 Performance Objectives

The SGWMP was prepared prior to commencement of operating the upgraded facility.

In addition to meeting the COC, site operations will continue to meet their regulatory obligations under EPL 7654 issued by the NSW EPA under the *Protection of the Environment Operations Act 1997* (POEO Act). The EPL regulates the composting scheduled activity of up to 200,000 tonnes of resource recovered material received at the site annually.

The conditions of the relevant SSD approval and current EPL approval and reference to where the conditions are addressed in this SGWMP are provided in **Table 1.1** below.

It is noted that conditions within the EPL may be amended as part of future variations to the licence. New revisions of the EPL will require review and the new requirements updated in this plan as necessary. To view the most current version of EPL 7654, visit Environment & Heritage | PRPOEO (nsw.gov.au).

Table 1.1 Development Consent and Licence Conditions

Approval / Licence	Conditions	Section Addressed in SGWMP
SSD-9418 Development Consent	Condition C1 sets out that *management plans required under this consent must be prepared in accordance with relevant guidelines, and include:*	
	(a) *detailed baseline data*	Section 4.2 Section 6.2
	(b) (i) *details of the relevant statutory requirements (including any relevant approval, licence or lease conditions)*	This summary table
	(b) (ii) *details of any relevant limits or performance measures and criteria* (iii) *details of the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures* (c) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria (d) (i) *a program to monitor and report on the impacts and environmental performance of the development* (ii) *a program to monitor and report on the effectiveness of the management measures set out pursuant to paragraph (c) above*	**Section 4.3** **Section 4.4** **Section 5.2** **Section 5.3** **Section 6.3** **Section 6.3**
	(e) *a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible*	**Section 3.3** **Section 3.4** **Section 3.5** **Section 3.7** **Section 4.4** **Section 5.2** **Section 6.3**

Approval / Licence	Conditions	Section Addressed in SGWMP
	(f) *a program to investigate and implement ways to improve the environmental performance of the development over time*	**Section 3.3** **Section 3.4** **Section 3.5** **Section 3.7** **Section 4.3** **Section 5.2** **Section 6.3**
	(g) (i) *a protocol for managing and reporting any incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria)*	**Section 3.3** **Section 3.4** **Section 3.5** **Section 3.6** **Section4.3** **Section 5.2** **Section 6.3**
	(g) (ii) *a protocol for managing and reporting any complaint* (iii) *a protocol for managing and reporting any failure to comply with statutory requirements*	**Section 3.6**
	(h) *a protocol for periodic review of the plan*. *Note: The Planning Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.*	**Section 3.7**
	Condition B18 states that *prior to the commencement of operation, the Applicant must prepare a Surface and Groundwater Management Plan the satisfaction of the Planning Secretary. The Surface and Groundwater Management Plan must form part of the OEMP required by Condition C5 and must:* (a) *be prepared by a suitably qualified and experienced person(s)*	Document Information
	(b) *Include the Management and Mitigation Measures included in Appendix 2 (of the consent)*	**Section 4.0** **Section 5.0** **Section 6.0**
	(c) (i) *provide details of detail water use and management on-site*	**Section 2.4**
	(d) (ii) *provide details of the water licence requirements for the development, if any*	**Section 2.5.4**
	(e) (iii) *provide details of the management of wastewater streams on-site*	**Section 2.4.3**
	(f) contain a Surface Water Management Plan, including; *(i) a program to monitor surface water flows, quality, storage and use* *(ii) sediment and erosion control plans* *(iii) surface water impact assessment criteria, including trigger levels for investigating any potential adverse surface water impacts* *(iv) a protocol for the investigation and mitigation of identified exceedances of the surface water impact assessment criteria*	**Section 4.0**
	(g) *contain a Groundwater Management Plan*	**Section 6.0**
	(h) *contain a Leachate Management Plan*	**Section 5.0**

Approval / Licence	Conditions	Section Addressed in SGWMP
	(i) *detail how leachate, stormwater and wastewater would be managed, including how any changes approved by modification applications have been addressed*	**Section 4.0** **Section 5.0** **Section 6.0**
	(j) *detail any trigger levels to ensure overflow of wastewater and leachate at the site does not occur.*	**Section 4.3.2**
	Condition B19 states that *the Applicant must:* *(a) not commence operation until the Surface and Groundwater Management Plan required by condition B18 is approved by the Planning Secretary* (b) *implement the most recent version of the Surface and Groundwater Management Plan approved by the Planning Secretary for the duration of the development.*	This plan
	Condition B20 states that *the Applicant must obtain relevant water access licence/s in accordance with the Water Management Act 2000, if the development will intercept groundwater.*	**Section 2.5.4**
EPL7654	Condition L1 addresses pollution of waters, this ensures that except where outlined in other conditions of the licence, the licensee must comply with section 120 of the POEO Act.	**Section 4.4** **Section 5.3** **Section 6.4**
	Condition L2 addresses water and/or land concentration limits for each monitoring/discharge point or utilisation area specified in the licence.	**Section 4.4** **Section 5.3**
	Condition L3 sets out the waste types and quantities permitted to be accepted at the premises and associated scheduled activity to be carried out at the premises.	**Section 2.3**
	Condition O3 sets out that leachate is not to be used for dust suppression on haul roads, and that no material, including sediment or oil is tracked from the premises.	**Section 4.3**
	Condition O5 sets out that clean stormwater must be diverted around waste and leachate catchments at the premises.	**Section 4.3**
	Condition O6 addresses waste and leachate management conditions, as follows: • *Waste is only permitted to be received, stored and processed in areas at the premises where leachate barrier has been installed and the barrier is to EPA satisfaction.* • *Leachate collection and storage facilities must be maintained so as to collect and impound all leachate generated by a storm events of less than 1 in 25 year recurrence interval of one day duration.* • *Leachate must not be permitted to mix with stormwater or any stormwater infrastructure at the premises.* • *The licensee must not cause or permit any leachate to pool at the premises (except within designated leachate dams/sumps).* • *Leachate may be irrigated over active compost windrows only, within the premises.* • *No leachate is permitted to be discharged from the operating area of the premises.* • *The Licensee shall install a level marker in the leachate dam/s to indicate the volume of leachate in each dam*.	**Section 4.3** **Section 5.2** **Section 5.3**

Approval / Licence	Conditions	Section Addressed in SGWMP
	Condition O7 sets out other operating conditions, including spray from leachate irrigation must not drift beyond active compost rows.	**Section 4.3**
	Condition M1 sets out monitoring records requirements, including records of monitoring results, conditions of the records keeping, and required information to be documented.	**Section 3.0** While the EPL requires some control and monitoring of noise and odour at the premises, it does not stipulate any environmental monitoring requirements for groundwater, incoming wastesor final products
	Conditions M2 and M3 set out monitoring requirements for the concentration of discharged pollutants.	**Section 4.4** **Section 5.3**
	Condition R2 outlines the requirements for notifying the NSW Environment Protection Authority (EPA) of potential incidents of environmental harm.	**Section 3.0**

1.6 SGWMP Structure

The SGWMP documents environmental management controls, procedures and monitoring in relation to any wastewater, surface water, groundwater and leachate generated or received at the site. This SGWMP comprises the following key components:

- Background information (**Section 2.0).**
- Environmental management overview (**Section 3.0**).
- Surface Water Management Plan (**Section 4.0**).
- Leachate Management Plan (**Section 6.0**).
- Groundwater Management Plan (**Section 5.0**).

1.7 Exclusions

This SGWMP does not address the following aspects:

- Use and management of fire water.
- Use of drill water imported to site from other Bettergrow facilities.
- Management of Void 4.
- General environmental management.
- Validation that the completed development meets design requirements.

1.8 Relevant Legislation, Policy and Guidelines

Relevant legislation, subordinate regulation and guidelines considered applicable to the SGWMP at the site include, but are not necessarily limited to, the following:

- Department of Environment and Conservation (Environmental Guidelines), Composting and Related Organics Processing Facilities (DEC, 2004).
- *Environmental Planning and Assessment Act 1979* (principally, development consent conditions).
- *Protection of the Environment Operations Act 1997* (POEO Act) and subordinate regulations:
  - Protection of the Environment Operations (General) Regulation 2009.
  - Protection of the Environment Operations (Waste) Regulation 2014.
- *Contaminated Land Management Act 1997*.
- *Water Management Act 2000*.
- National Environmental Protection (Assessment of Site Contamination) Measure, National Environment Protection Council 1999 (as amended May 2013) (NEPC, 2013).

2.0 Site Overview

2.1 Site Identification

Table 2.1 below provides relevant site information. The project area and property boundary are illustrated on **Appendix A**.

Table 2.1 Site Identification

Item	Relevant Site Information
Site Address	74 Lemington Road, Ravensworth NSW 2330
Title and Lot/Plan Identifiers	Part Lot 10 on Deposited Plan (DP) 1204457
The project area	Approximately 57 hectares (ha)
Development Applicant	Bettergrow
Site Operator	Bettergrow
Landowner	AGL Macquarie Pty Ltd
Local Government Area	Singleton Council
Current Land Use Zoning	Primary Production (RU1)

2.2 Background

Bettergrow operates an outdoor windrow composting facility authorised to receive a range of biosolids, garden organics and other organic waste materials as approved in Environment Protection Licence 7654 to produce a suitable compost product for mine site rehabilitation and agricultural uses. The premises is located on Lot 10 DP1204457 in the Singleton local government area.

Bettergrow are contracted by AGL Macquarie (the landowner) to supply manufactured soil ameliorant and rehabilitation products for use, in part, for approved rehabilitation works at the AGL Macquarie sites such as the Ravensworth Mine sites, Liddell Ash Dam, Liddell Power Station and Bayswater Power Station. Bettergrow also sell a portion of the composted material to third parties.

2.3 Received Waste Types

In accordance with the development consent for SSD-9418 granted on 31 August 2022, the approved waste streams to be received at the site are the following:

- Up to 200,000 tonnes per annum of EPA approved waste which includes but may not be limited to:
  - urban wood residues for composting.
  - paper crumble for composting.

- wastewater from Bayswater Power Station.
- drill mud process water.
- natural organic fibrous composting material.
- Biosolids.
- garden waste, and
- animal waste.

Modification 1 (MOD 1) of SSD-9418 issued on 6 December 2023 also allows for materials for the purpose of composting that are subject to a general or site specific resource recovery order and exemption as issued by the EPA from time to time.

In addition to the development consent, Bettergrow must ensure that the EPL also provides consent for receipt of the above waste types.

2.4 Site Operations

2.4.1 Site Features

Key features of the site are outlined in **Table 2.2**.and illustrated on Bettergrow's Infrastructure Plan 0011 (**Appendix A)**. Actual site conditions and features should be reviewed and updated within this plan as required. Part of this review should include validating that key design features meet the required specifications prescribed by DA COC and/or relevant guidance (particularly design of compost processing pads, associated drainage and leachate dams).

Table 2.2 Key Site Features

Site Feature	Description
Site Office/Amenities	• The site office is located on the western boundary of the site. • Potable water for staff amenities is currently trucked to site and stored in 2 x 1,000 litre tanks
Compost Processing Pads	• Processing pads constructed from compacted earth materials to required specifications that limits penetration of leachate into the subsurface • The Stage 1 (western) and Stage 2 (eastern) processing pads comprise storage of feedstock stockpiles as well as comprise composting windrows. The total processing pad area is approximately 202,000 m^2. • Drainage lines within the processing pads are generally made of compacted earth materials. Rock drains at the southern boundary of the processing pads directs leachate to the dams.
Leachate Dams (Monitor**ing point 1 and 2 in the EPL)**	• Two leachate dams located in the southern portion of the site have a combined capacity of 50 megalitres (ML). The bed and banks of the leachate required construction from approved materials, compacted to achieve a permeability of less than 10-9 ms-1. • Sediment removed from the leachate dams periodically is reused within compost materials. • Monitoring point 1 of the EPL for leachate dam characterisation • Monitoring point 2 of the EPL is the emergency spillway (if discharge occurs). • The leachate dams are sometimes referred to as sediment control dams in other documents developed for the site.
Stormwater Discharge Area (Lower Basin) (Monitoring point 4 in the EPL)	• Lower basin (of approximately2 ML capacity) located in the southeast corner of the site. • Rock structures and rip rap are present within the current flow path towards the lower basin to slow the velocity. • Referred to as stormwater infiltration area or sediment basin in some reports developed for the site.
AGL Tank (Monitoring point 3 in the EPL)	• Located in the northeastern portion of the site. The tank is filled with water from Void 4 and has a capacity of 300,000 L.

Site Feature	Description
Truck wash	• Located in the northeastern corner of the Stage 1 treatment pad. Water is pumped from the AGL pit via a diesel-powered pump to the truck wash area. • Wastewater from the truck wash is captured in a dirty water pit, which directs water to the leachate dam. Sediment from the dirty water pit is mixed into composting materials.
Machinery Storage	• Machinery storage area comprises an undercover concrete pad for machinery storage and maintenance. Small volumes of oils and lubricant are stored here. • A 5,000L above-ground storage tank (AST) containing diesel is located within a bunded area. • COC require that refuelling of vehicles or machinery is undertaken within a containment or hardstand area.
Void 4	• Void 4 is located south of the leachate dams. • Void 4 is one of five decommissioned mine voids owned by AGL and is used as a water storage dam and provides additional capacity for surface water runoff during significant rainfall events.

2.4.2 Site Processes Overview

The process of site composting operations is summarised in Figure 2 from the OEMP below.

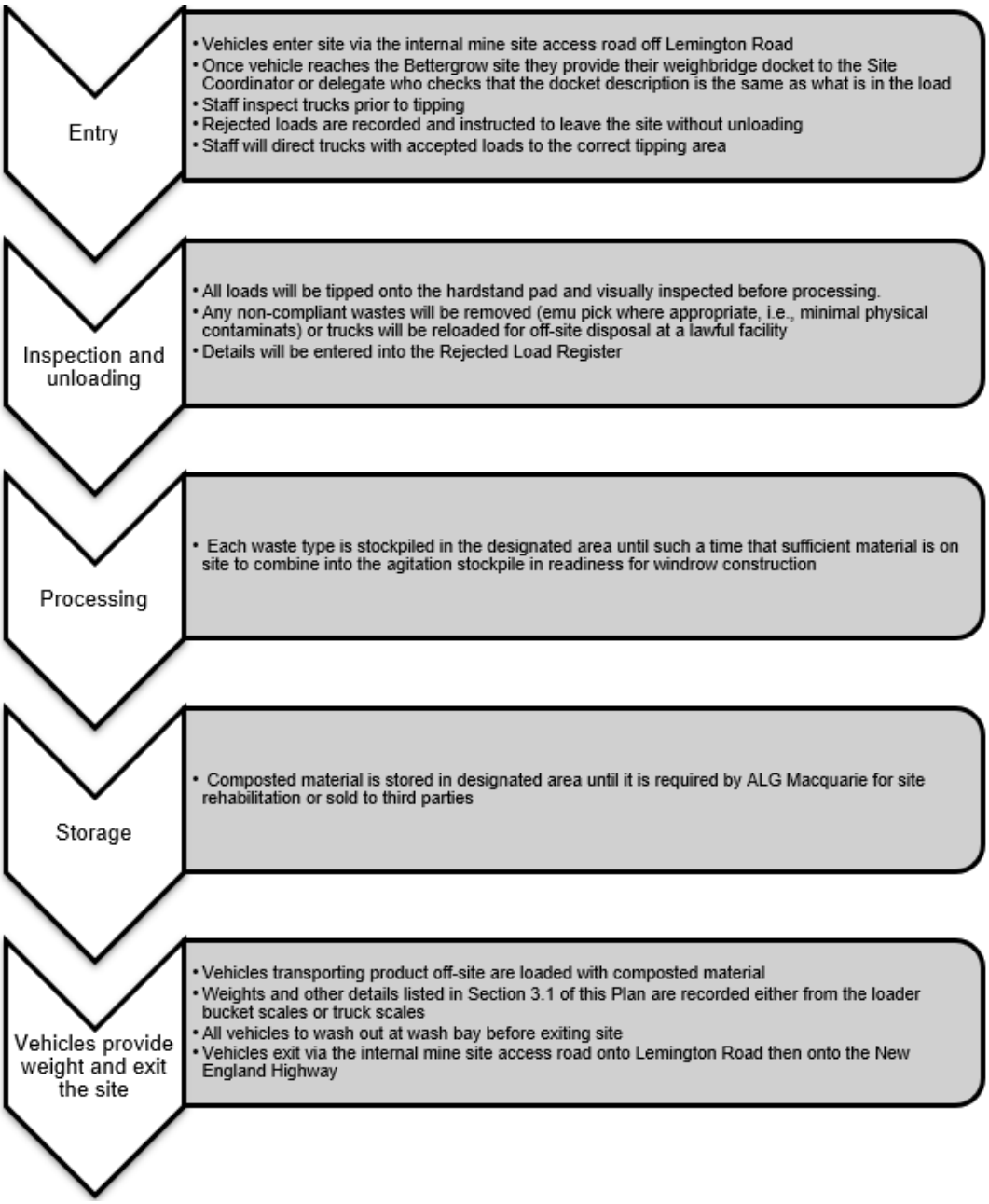


Figure 2 – OEMP's Process Flowchart for the operation of the Ravensworth compost facility.

2.4.3 Water inputs, storage and use

Bettergrow operates on a closed water management system, whereby leachate from the composting pad is captured and reused from the onsite leachate dams. Process water is sourced from the Void 4 mine water storage (located south of the leachate dams). Bettergrow access water from Void 4 via the AGL storage tank identified in **Table 2.2** above. The water inputs, storage and use further outlined in **Table 2.3** below.

Table 2.3 Water inputs, storage and use

Water System	Water Source	Water Storage	Water Usage and losses
Potable Water	• Off-site source, trucked into site.	• Potable water for staff amenities is stored in 2 x 1,000 litre tanks	• General use by staff. • Not used for toilets. Site toilets are porterloos that are pumped out by a licensed contractor and the waste disposed offsite.
Process Water	• Water from Void 4, which receives recycled water from Bayswater PowerStation.	• AGL water storage tank (1 x 300,000 L).	• Truck wash • Dust suppression on haul roads • Composting activities
Leachate	• Any Liquids captured by processing pads and associated drainage lines. This includes: ▪ Liquids leaching from compost piles. ▪ Rainwater captured by processing pads. ▪ Process water captured by processing pads and associated drainage.	• Leachate Storage • (50ML)	• Leachate (collected from leachate dam) reused for composting activities. • Any leachate water that does overflow via the spillway, resulting from a rainfall event less frequent than the 1% AEP, 24-hour event, is able to be captured in the lower basin.
Runoff / stormwater	• Rainwater diverted away from processing pads by site bunding.	• Lower basin (2 ML) • Surrounding voids.	• Water not utilised. • In the exceedingly rare event that the lower basin fills, water can overflow into Void 4, which has in excess of 40 metres depth of available airspace above its normal operating level (i.e. in excess of 500 ML).

Consent for SSD-9418 also includes provision for 2 x 25,000 drill water receival pits. This recycled water will be trucked from one of Bettergrow's existing drill mud processing facilities at either Vineyard or Wetherill Park in NSW and used in the organics composting process and for dust suppression on roads onsite.

These pits are not proposed for immediate construction and use but are likely to be constructed in the future. The proposed location is adjacent to the truck wash as illustrated in Bettergrow's Infrastructure Plan 0011 (**Appendix A**). The EPL would need to be updated to include approval to receive drill water and any change in EPL conditions or monitoring requirements would need to be included in this plan. Management of water associated with drill water receival pits is currently excluded from the SGWMP.

2.5 Environmental Setting

The site's natural setting has been summarised by Senversa, based on review of the EIS (RPS Group, Nov 2019) and the supporting groundwater and surface water impact assessments contained in the

EIS. A summary of this information is presented in this section and the EIS should be considered for full details.

2.5.1 Climate

Rainfall at this site has been recorded by a nearby Bureau of Meteorology (BoM) station (No. 061270) located 20 kilometres (km) from the site at Bowmans Creek (Grenell) since 1969. The mean annual rainfall recorded for the area is 864.7 millimetres (mm).

2.5.2 Topography

The site is located on the capped Void 3 of the former Ravensworth No. 2 mine owned by AGL Macquarie Pty Ltd (AGL). The Ravensworth No. 2 mine was decommissioned in 1993 following the completion of coal mining. Void 3 has been filled with fly ash from the AGL Bayswater Power Station and rehabilitated as part of the decommissioning works. The site sits atop a 40-metre-high ridge that runs approximately north south in between Bayswater Creek, 600 metres (m) west and Bowmans Creek, 1,200 m east of the site.

The topography of the site and surroundings is influenced by the underlying geology which is comprised of sedimentary coal measures overlain by alluvial sediments in low-lying flood plains. Topographic elevations range from RL 130 m within the north to RL 90 m within the south of the broader area.

2.5.3 Geology and Soils

The site is located on a capped open cut mining void (Void 3) which has been filled with fly ash from the AGL Bayswater Power Station and rehabilitated.

The surrounding area is situated within the Liddell Soil Landscape characterised by Yellow Soloths on slopes and yellow Solodic Soils on concave slopes. Earthy and Siliceous Sands occur on mid to lower slopes where the parent material is sand. Red Soloths, Red Solodic Soils and Red Podzolic Soils may also occur. Soloth soils are acidic soils usually typical of humid regions. Solodic soils have a strong contrast between A and B horizon textures, with A horizons being often acidic and B horizons often alkaline. Podosol soils are characterised by B horizons dominated by the accumulation of organic compounds, aluminium and/or iron. Minor to severe sheet erosion and low to moderate flood hazard are common within the Liddell Soil Landscape.

2.5.4 Hydrology

Regional

The site and its surrounds are located within the Hunter River catchment, with the Hunter River located 6 km to the south and Lake Liddell approximately 5 km to the north. The Hunter River drains the largest coastal catchment in NSW, covering some 22,000 kilometres squared (km^2).

The site is located atop a 40-m-high ridge that runs approximately north-south in between Bayswater Creek, 600 metres (m) west and Bowmans Creek, 1,200 m east of the site. Bayswater Creek and Bowmans Creek are highly modified due to mining and power generation activities and exhibit elevated salinity levels and generally low flows. Both creeks flow from north to south to discharge into the Hunter River. The Hunter River alluvium to the south of the site is at RL 62m and falls to approximately RL 60m further to the east. Similarly, the bed of the Hunter River falls form RL 54m to approximately RL 50m. Bayswater Creek is ephemeral and flows in a southerly directly to the west of the development footprint, while Bowmans Creek flows in a southerly directly to the east of the site.

Site Drainage

As a result of the natural topography, and due to modification from mining and power generation activities, there is little upstream catchment draining toward the site and no waterways running through the site. Diversion bunds are in place to exclude minor upstream catchment flows from entering the

site. Any runoff generated upstream of the site is diverted to the stormwater discharge and infiltration area on-site or surrounding land.

Any rainfall captured by the compost processing pads is considered to be leachate and managed as such. There is no surface water discharge from the site into local waterways due to the highly modified nature of the site from historical mining operations. All site runoff is managed and captured in the site's surface water and leachate management system (**Section 4.3.1**) and ultimately Void 4 for extreme events.

Void 4

Void 4 is located approximately 100 m south of the leachate dams. In a letter dated 26 July 2022, the Department of Planning and Environment Water (DPEW) confirmed that the Ravensworth composting facility under SSD-9418 does not require a water access licence to use the water from Void 4, because the source of the water is not groundwater but is sourced from a tailings and ash dam which are above the natural groundwater table.

Fly ash from AGL's power stations is placed into remaining voids across the Ravensworth No. 2 and Ravensworth South mine sites as part of the approved rehabilitation of the site. This fly ash is pumped as a thick slurry from the Bayswater Power Station and is currently deposited into Void 5. As a result of this process, water from the fly ash seeps from Void 5 into Void 4 and is pumped from Void 4 back to the Bayswater Power Station for further re-use. Void 3, which has also been subject of filling from fly ash, also seeps water into Void 4.

2.5.5 Hydrogeology

Groundwater depth is more than 40 metres below the site surface level.

The site is located within the Hunter subregion, part of the Northern Sydney Basin bioregion. Aquifers in the Hunter subregion can be broadly classed into three hydrogeological types: alluvial, coastal sands and fractured (including porous) rock aquifers. The site is located above the fractured and porous rock across the subregion, where the deeper, more extensive aquifer systems occur. Alluvial aquifers are concentrated around the Hunter River valley, around Maitland, Singleton, between Muswellbrook and Scone and between Muswellbrook and the junction with the Goulburn River.

Shallow regolith aquifers overlying the coal measures are generally unreliable, exhibit slow recharge rates from rainfall and are usually depleted during dry periods. Coal seam aquifers are generally confined, above and below, by massive and relatively impermeable conglomerates which also limits rainfall recharge. Alluvial aquifers at the site are the Hunter River Alluvium, Bowmans Creek Alluvium and Bayswater Creek Alluvium and recharge rates vary from very good to poor, depending on the aquifer material.

Alluvial aquifers are highly connected to surface water, supporting most of the consumptive use for urban and agricultural water supply in the local area. As such, these water sources are controlled by the NSW Water Sharing Plan for the *Hunter Unregulated and Alluvial Water Sources 2009*. The regolith aquifers and coal seam aquifers are less reliable for water supply and consumptive use is limited; these aquifers are obviously intercepted by coal mining activities in and around the site.

Groundwater vulnerability maps have been prepared by the NSW Department of Industry for some catchments in NSW. A groundwater vulnerability map has not been prepared for the Hunter River catchment, which includes the site. Given that the site and surrounding areas have historically been used for open cut and underground mining, the groundwater in the area is not considered to be vulnerable.

A search of the Groundwater Dependent Ecosystem Atlas from the BoM indicated that there are no aquatic or terrestrial Groundwater Dependent Ecosystems (GDEs) within or immediately adjacent to the site. The site is highly modified and disturbed by mining and power generation activities. There is no evidence of GDEs on or nearby to the site.

The outcomes of the groundwater impact assessment (Fifteen50 Consulting, 2019b) indicated that the operation of the Facility poses a low risk of significantly impacting groundwater quality, considering the site setting and implementation of the management measures outlined in the OEMP and this SGWMP.

Further description of the groundwater quality at the site is presented in the Groundwater Management Plan (**Section 6.0**).

2.6 Surrounding Land Use and Receptors

The site is located approximately 20 km north of the township of Singleton, within the Singleton Local Government Area (LGA) and 25 km south of the township of Muswellbrook within the Muswellbrook LGA. It is located within an area that is dominated by coal mining and heavy industrial activities, including power generation and related activities. As such the site is within a highly altered environment, and operation of a composting activity is considered generally compatible with surrounding land uses for the site which include:

- North: Liddell and Bayswater Power Station, Liddell Coal Operations, Hunter River and Lake Liddell.
- South: Integra Coal Mine, Loop Organics Compost Facility.
- East: New England Highway.
- West: Ravensworth North Open-cut Coal Mine.

Based on this, a summary of the possible receptors of potentially impacted water derived from the site includes the following:

- Off-site recreational users of Hunter River and Liddell Creek – considering the site surface water management system (**Section 4.3.1**) and additional management measures implemented on site (detailed in the following Sections), the risk of site activities impacting Hunter River or Liddell Creek is low.
- On-site workers have the potential to come into direct contact with stormwater – site workers are subject to occupational health and safety controls and procedures to manage these and are not considered receptors for the purposes of this SGWMP.

3.0 Environmental Management Overview

The overall Environmental Management System (EMS) for the site is described in the OEMP. This SGWMP is part of the overall EMS. The OEMP includes the elements and expectations relevant to this SGWMP, including:

- Roles and responsibilities.
- Legal and other requirements.
- Risk management.
- Internal and external communication.
- Training and competency.
- Contractor relationships.
- Incident management.
- Emergency planning and response.
- Document and record management.
- Auditing, review and improvement.

This SGWMP is intended to be implemented in conjunction other OEMP subordinate plans that document environmental management of other aspects of site activities, including:

- OEMP
- Waste Management Plan.
- Air Quality Management Plan.
- Traffic Management Plan.
- Pollution Incident Response Management Plan.
- Site Emergency Plan and Emergency Response Procedure.

To implement this SGWMP, the following forms and documents shall be used:

- Daily Running Sheet.
- Stormwater Performance Form.
- Daily Weather Conditions Form.
- Emergency Release Notification Form.
- Erosion and Sediment Control Checklist.
- Environmental monitoring records should be maintained in accordance with the EPL.

3.1 Roles and Responsibilities

All staff and contactors have an obligation to ensure the appropriate implementation of the SGWMP. **Table 3.1** below outlines the primary roles and responsibilities of all key personnel involved in the implementation of the SGWMP and compliance with its requirements. Roles and responsibilities shall be reviewed and refined if required and appropriately qualified staff shall undertake any works or inspections associated with this SGWMP.

Table 3.1 Roles and Responsibilities

Entity / Role	Responsibility
Managing Director/CEO	• Establish and promote environmental policy that forms part of the organisations culture, values, performance standards and corporate citizenship. • Communicate environmental responsibilities throughout the organisation. • Communicate with Operations Manager, Biosolids Manager and Environmental Manager.
Operations Manager	• Oversee the environmental performance of the Facility. • Ensure adequate resources are available to implement the SGWMP. • Notify pollution incidents that causes or threatens material harm to the environment to Environmental Manager and relevant authorities as required. • Respond to community complaints. • Report to Managing Director/CEO. • Communicate with Site Coordinator, Environmental Manager and Biosolids Manager.
Site Coordinator	• Oversee the day-to-day management of the Facility. • Ensure that all activities carried out on-site comply with relevant regulatory and operational requirements. • Ensure that the requirements of the SGWMP are fully implemented and effective. • Ensure all employees and contractors are aware of the requirements of the SGWMP and their responsibilities, including incident reporting. • Ensure the implementation of the SGWMP. • Record and report environmental incidents and complaints. • Report all environmental incidents to Operations Manager and Environmental Manager. • Report to Operations Manager. • Communicate with Operational staff.
Environmental Manager	• Oversee the environmental performance of the site operation and compliance with legislative and regulatory requirements. • Assist in ensuring the implementation of the SGWMP. • Ensure the SGWMP remains relevant and up to date. • Conduct environmental site inspections, reporting, monitoring, auditing, incident investigation and assess environmental performance against the SGWMP, and environmental complaints. • Identify corrective actions from incidents, site inspections or other environmental surveillance. • Maintain site records related to the implementation of the SGWMP. • Notify pollution incidents that causes or threatens material harm to the NSW EPA. • Respond to community complaints. • Report to Managing Director/CEO and Operations Manager. • Communicate with Site Coordinator, Biosolids Manager and Operations Manager.
Biosolids Manager	• Provide advice on the composting process including specification and land application. • Manage the delivery of the various organic services and compliance with contract and SGWMP requirements. • Notify Operations Manager of any deficiencies or potential problems with site procedures. • Report to Managing Director/CEO. • Communicate with Operations Manager, Site Coordinator and Environmental Manager.
Operations Staff, Including Contractors	• Manage operations in an environmentally responsible manner and report any incidents or take action to minimise impacts from site operations. • Report any observed environmental incidents, including spills and discharges, immediately after becoming aware of it to Site Coordinator or Operations Manager. • Undertake environmental training through site induction process. • Communicate with Site Coordinator and Operations Manager.

Entity / Role	Responsibility
Environmental Consultant (where required)	• Carry out required sampling in accordance with the relevant management plan.
Suitably Qualified/ Experienced Person	• Review/update SGWMP, inclusive of the Surface Water Management Plan, Groundwater Management Plan and Leachate Management Plan, as required. • Undertake monitoring and inspections specified within the SGWMP.

3.2 Training

Bettergrow must ensure that, prior to commencing any work on-site, all employees and contractors engaged in the implementation of nominated tasks within the SGWMP have been provided with adequate training and are capable of performing the work to an adequate standard. Toolbox talks and targeted training relating to the requirements and implementation of the SGWMP shall be delivered for employees and contractors on an on-going basis at pre-start meetings.

Training records must be recorded and maintained in accordance with the OEMP.

3.3 Reporting, Review and Auditing

Reporting and notifications must be conducted in accordance with the OEMP and the EPL.

In accordance with the OEMP, review and auditing of the SGWMP and activities conducted under the SGWMP shall be undertaken by Independent Environmental Auditors within one year of the commencement of operations and at least every three years thereafter or upon significant change to process or waste management practices.

Although not specifically stated for surface water, groundwater or leachate, the EPL states that monitoring data, including the below details, must be retained in a legible form for at least four years after the event takes place. This requirement will also be adopted for stormwater, groundwater and leachate data:

- The date(s) on which the sample was taken.
- The time(s) at which the sample was taken.
- The point at which the sample was taken.
- The name of the person who collected the sample.

3.4 Performance Indicators

The Environmental Manager will undertake annual environmental audits of the site to:

- Assess compliance against SGWMP Objectives (refer Section 1.4) and performance Objectives (refer Section 1.5).
- Review pollution incidents and status of incident closure.
- Review progress implementing the SGWMP.
- Review status of corrective actions
- Review monitoring data to assess change and compliance with required standards.

3.5 Emergency Contacts and Response

Pollution Incidents shall be managed in accordance with:

- Emergency Response Procedures.
- Pollution Incident Response Management Plan.

3.6 Community Complaints, Non-compliances and Exceedances.

Community complaints, non-compliances and exceedances will be handled in line with the processes outlined the OEMP.

Non-compliances and exceedances will be reported in line with the EPL and any exceedances will be included in the annual return and annual environmental management review.

3.7 Review and Revision of the SGWMP

This SGWMP is a working document, it is expected that it will require review, revision and/or amendment to accommodate any relevant Development Consent, EPL or legislation changes and to continually improve the effectiveness of the current and future SGWMPs.

Bettergrow, as the owner of this document, is responsible for the review and revision of this SGWMP document. The review and any updates of this SGWMP shall be conducted by a suitably qualified and experienced person, and tracked via a version control record (e.g. in the Document Control Table on page ii).

The review process may consider:

- Construction of additional infrastructure such as the drill water receival pits.
- Changes to the approved COC.
- Changes to EPL control and monitoring requirements.
- Changes in legislation or regulatory requirements.
- Inputs or responses from regulatory agencies.
- Monitoring outcomes.
- Incident investigations and non-conformances.
- Audit and inspection findings.
- Changes in organisational structure and/or responsibilities.
- Changes in voluntary obligations and compliance obligations.

4.0 Surface Water Management Plan

This Section addresses surface water management and monitoring measures to be implemented on-site.

For the purposes of this SGWMP, stormwater is considered clean water run-off diverted away from the compost processing pads and associated drainage. Water captured by the processing pads and associated drainage will be managed as leachate under the Leachate Management Plan (**Section 5.0**).

During development of this management plan, monitoring requirements in the NSW DEC (2004) *Environmental Guidelines for Composting and Related Organics Processing Facilities*, were considered.

4.1 Surface Water Risks

The Surface Water Impact Assessment (Fifteen50, August 2019) developed as part of the EIS notes the combined storage capacity of the site (including Void 4) means that the risk of discharge to the surface water environment is very low.

The potential risks the operation poses to surface water quality relate to:

- Chemical spill and/or leak entering stormwater discharge and infiltration area.
- Leachate from treatment pads entering stormwater drain or stormwater discharge and infiltration area.
- Rainfall resulting in an extreme flooding event and/or accumulating in bunded areas.
- Obstructed stormwater drain preventing system free-flow.
- Poor maintenance of the bed or banks of drains and/or leachate dam resulting in the release of leachate or wastewater through embankment failure and/or erosion/sedimentation.
- Chemicals, leachate or wastewater being discharged to stormwater drain by operations staff or contractors.

4.2 Baseline Conditions

Bayswater Creek, which is the nearest surface water body 600 m down gradient of the site and is considered highly modified due to mining and power generation activities and exhibit elevated salinity levels. (Fifteen50, August 2019). The creek generally flows from north to south to discharge into the Hunter River six kilometres to the south of the site.

Bayswater Creek is saline with median electrical conductivity (EC) measurements above 3,000 µS/cm (Bayswater Creek 210110 Station; NSW EPA, 2013) which is well in excess of the ANZECC water quality trigger values for upland/lowland southeastern Australian streams (upland 30-350 µS/cm; lowland 125-220 µS/cm).

Void 4 water quality is regularly tested by Bettergrow under the EPL (Monitoring Point 3). The Surface Water Impact Assessment (Fifteen50, August 2019) included testing results from Void 4 (February, August & November 2018). The results indicated the following:

- Electrical conductivity: range 4,520-7,580 µS/cm (brackish to saline).
- Total suspended solids: <5 - 40 mg/L.
- pH: 8.35-8.36 (alkaline).

4.3 Surface Water Management

This section details the surface water management measures to prevent or mitigate (as far as is reasonably practicable) the risk to the receiving environment from site activities – this includes protection of receiving surface water environments and groundwater. Primary management measures include:

- Maximise segregation of stormwater from process water, leachate or wastewater.
- Mitigate off-site migration of sediments and suspended solids in stormwater runoff.
- Manage and monitor discharges from the site.
- Appropriate storage of materials and liquids.
- Ongoing inspection and maintenance of surface water and leachate management system and controls.
- Employees and contractors awareness of, and implementation of procedures relating to waste and chemicals management, spill response and incident reporting.

In this regard, key management areas are addressed in the following Sections, including:

- Surface water and leachate management system and associated infrastructure.
- Surface water storage, use and discharge.
- Sediment and erosion.
- Materials storage and handling.

4.3.1 Surface Water and Leachate Management System

All site runoff is managed and captured in the site's surface water and leachate management system. Key components of the surface water management system include:

- Processing pads comprising compacted earth to achieve low permeability (1x10-9 m/s) to control leachate generated from the composting process. Processing pads have been designed to capture runoffs from the site in excess of the minimum EPL requirement (i.e. 4% Annual Exceedance Probability - AEP - 24-hour storm event).
- Leachate dams collect leachate from the processing pads. The leachate dams have been designed in accordance with AS 3798-2007 – Guidance on Earthworks for Commercial and Residential Development. It has been engineered to achieve low permeability. The leachate dam has enough storage volume to capture runoffs up to the 1% AEP, 24-hour storm event without any uncontrolled discharges off-site. In an exceedingly rare event, overflown water from the leachate dam is captured in the stormwater discharge and infiltration area (Fifteen50, Aug 2019).
- Rock drains/channels connecting the processing pads to the leachate dam, and the leachate dam to the stormwater basin (to provide a spillway in an of overflow event). The channels have enough design capacity to discharge the peak flow during a 1% AEP, 24-hour storm event (Fifteen50, Aug 2019).
- Stormwater (clean water) diversion and sediment bunds located around the processing pads.
- Stormwater (clean water) diversion located along the western side of the site, directing water to surrounding land.
- Diversion wall and channel directing stormwater from the eastern side of the site into the stormwater basin.

The key components of the surface water management system, including bunding, drains, spillways, and leachate dam have been designed to prevent surface water from mixing with the organic waste received and processed, and the final products, process residuals and contaminated materials stored at the site.

4.3.2 Leachate Management

Leachate should be managed in accordance with the Leachate Management Plan (Refer to **Section 5.0)** to mitigate risk of leachate migrating beyond compost processing pads and associated leachate drains and dams described in **Section 4.3.1.**

4.3.3 Surface Water Storage, Use and Discharge Management

Management measures for surface water storage, use and discharge to be implemented on-site include:

- Divert clean surface water around processing pads and leachate dam through the installation of clean water catch drains and diversion bunds. Diversion system includes:
  - Stormwater basin collecting surface water diverted from the processing pads.
  - Stormwater (clean water) diversion and sediment bunds located around the processing pads.
  - Stormwater (clean water) diversion located along the western side of the site.
  - Diversion wall and channel directing surface water runoff from the eastern side of the site into the stormwater basin.
- Ensure that leachate is not mixed with clean water and do not enter any stormwater infrastructure.
- Ensure that only Void 4 water is reused for dust suppression and truck wash, i.e. no leachate is to be used for dust suppression or truck wash.
- Ensure that no off-site discharges occur, except where a significant rainfall event has occurred and triggered a flood event that exceeds the site basin design capacity to contain water
- Ensure drains and surface water gradients are free of excess vegetation and debris so that the slow of stormwater or leachate is not impeded, and the moisture/compaction levels achieved in embankment construction are maintained.
- Ensure that waste is received, stored, and/or processed within the processing pads, in areas where the leachate barrier has been installed.
- Ensure integrity of on-site infrastructure and structural integrity of drains, hardstand areas, leachate dam and stormwater basin.
- Repair and maintain any cracks observed in the base and side walls of the leachate dam using clay, preferably bentonite or bentonite clay mixture.
- Implement surface water/stormwater monitoring program (for details refer to **Section 4.4**).

4.3.4 Sediment and Erosion Control

Sediment and erosion controls must be implemented to mitigate migration of sediments and fines into drains and minimise risk to the surrounding off-site environment. General controls include those in Landcom (2004) *Managing Urban Stormwater: Soils and construction* - Volume 1, 4th edition. Key controls are illustrated on Bettergrow's Stage 2 Sediment and Erosion Control Plan (**Appendix B**).

Specific sediment and erosion controls to be implemented on-site include:

- Stabilise trafficable areas to minimise erosion, dust and tracking of dirt off-site. Measures could include water spraying for dust suppression and/or installation of crushed rocks.
- Minimise exposed bare earth areas within the site. Measures could include grassing or installation of sediment socks or fibre logs on the ground surface.
- Revegetate unused areas within the site.
- Ensure integrity of on-site infrastructure and structural integrity of drains, bunding, hardstand areas, leachate dam and stormwater basin.
- Maintain integrity of hardstand pads by repairs to areas damaged by plant and machinery movements. Fill any depressions by using screened or sieved overburden.

- Repair and maintain any cracks observed in the base and side walls of the leachate dam using clay, preferably bentonite or bentonite clay mixture.
- Manage windrows and gradients to ensure no water ponding or pooling occurs.
- Public roads should be kept clean of mud as far as reasonably practicable. Ensure that erosion and sediment controls are effective, otherwise rectify controls as required, and complete Erosion and Sediment Checklist.
- Check Singleton BoM weather monitoring station to inform of weather conditions, in particular rain events, including completion of Daily Weather Conditions Form. During excessive rain events, additional or revised erosion and sediment controls may be required.
- Implement surface water monitoring program (for details refer to **Section 4.3**).

4.3.5 Material Storage and Handling

Material storage and handling shall be undertaken in a manner to mitigate risk of spilling, leaking, entrainment of products to un-bunded areas and runoff into the surface water system. This is principally achieved by keeping raw material receipt, storage and composting activities on the composting treatment pads. Process water from the truck wash area is also captured within the treatment pad drainage system and managed as leachate as identified in **Table 2.2** above.

The machinery storage and associated diesel refuelling area is located outside of the compost treatment pads, as such careful management in accordance with the OEMP is required, including:

- Limit fuels and chemicals stored on-site to a minimum.
- Locate all required chemicals and fuels within a bunded enclosure located away from surface water system.
- Regularly inspect and service plant and equipment to limit risk of oil loss.
- Refuel vehicles or machinery within a containment or hardstand area designed to prevent the escape of spilled substances.
- Ensure that wash down areas are capturing and treating all wastewater, with collected solid material reused within the composting process.
- Maintain a high standard of site housekeeping to limit risk of gross pollutants (i.e. waste, litter, chemicals, leachate or wastewater) entering surface water system.
- Implement all reasonable and practicable measures to prevent pollution of any existing waterways as a result of silt or untreated leachate runoff, and oil or grease spills from any machinery.
- Check Singleton BoM weather monitoring station to inform of weather conditions, in particular consider wind conditions to ensure spray from leachate irrigation does not drift beyond active compost rows.
- Ensure that process water for cleaning equipment is not (indirectly) discharged to any watercourses or surface water system.
- Ensure all Operations staff and contractors are appropriately trained in the spill response procedures for the minimisation and management of unintended spills.
- Ensure that spill kits are deployed throughout the site.

4.4 Surface Water Monitoring

4.4.1 Monitoring Objectives

The objectives of surface water monitoring are to:

- Ensure surface water controls are adequately maintained and performing to meet the performance targets set out in the SSD COC.
- Assess storm water with respect to Condition L1, L2 and M2 of the EPL.

4.4.2 Monitoring Network

The relevant surface water monitoring points identified in the EPL are presented below and the locations illustrated on Bettergrow's Infrastructure Plan 0011 **(Appendix A)**. In addition to the EPA monitoring points identified below, the drainage lines form an important part of the stormwater network that requires monitoring.

It is noted that water from Point 3 is sourced from Void 4 and is not representative solely of stormwater diverted away from the site or surrounding land but also comprises water seepage from surrounding land, including Void 5 (refer **Section 2.5.4)**.

Table 4.1 Surface Water Sampling Network

EPA Identification Number	Type of Monitoring Point	Type of Discharge Point	Sample Location Description
3	Process water tank	-	Centre of water tank, eastern edge of premises.
4	Sediment Basin	Sediment Basin	Sediment Basin outlet – star picket at Basin outlet.

4.4.3 Monitoring Requirements

The monitoring program shall broadly comprise regular site inspections and checks of stormwater control systems, and periodic sampling of surface water quality. Additional monitoring is triggered by changes in site activities, environmental incidents or unexpected finds. A surface water monitoring program is outlined in Error! Reference source not found.**2** in accordance with Condition L2 of EPL, w ith triggers and actions presented in **Section 0**.

Table 4.2 Surface Water Monitoring Program

Monitoring Type	Frequency	Locations	Inspection Sample Analytical Schedule	Reporting Schedule
Visual Inspection	Weekly	General site areas (e.g. driveway, car park, truck wash area, machinery storage shelter) and controlled processing pads	No gross pollutants observed or waste materials stored or accumulated at ground surface or in surface runoff.	Annual report (refer to **Section 4.4.7)** and also reported in EPL 7654 Annual Return Trend analysis to be undertaken after each sampling event (e.g. update a trend graph with latest results to visualise data and identify results outside historical range).
	Following a rainfall event	Sediment basin and drains	Refer **Table 4.4**. Stormwater control devices maintained and operating as designed. No significant sediment accumulated in drains.	
Periodic Sampling	Daily during any discharge	Sediment basin (Monitoring Point 4)	Ammonia, electrical conductivity, nitrogen (total), pH, total organic carbon (TOC), total petroleum hydrocarbons (TPH), and total suspended solids (TSS). Record level in stormwater basin as appropriate.	
	Quarterly	Process water tank (Monitoring Point 3)	Boron, cadmium, copper, electrical conductivity, iron, molybdenum, nickel, pH, silver and TSS.	

Monitoring Type	Frequency	Locations	Inspection Sample Analytical Schedule	Reporting Schedule
Triggered Event (e.g. environmental incident or unexpected find)*	Event based	Inspection and sampling of downstream areas as required by event	As required – default is ammonia, electrical conductivity, nitrogen (total), pH, TOC, TPH, metals and TSS.	Per event

* The required inspection, sampling and analytical schedule should be assessed by a suitable qualified and experienced person at the time of the trigger response.

4.4.4 Sampling Methodology

Sampling must be undertaken by a suitably qualified and experienced person consistent with guidance in:

- DEC (2004). *Approved Methods for Sampling and Analysis of Water Pollutants in NSW*. March 2004. NSW Department of Environment and Conservation.
- Australian Standard/New Zealand Standard (AS/NZS) 5667.1:1998, *Water Quality – Sampling* series.
- NEPC (2013). National Environment Protection (Assessment of Site Contamination) Measure 1999 (amended 2013), Schedule B (2) Guideline on Site Characterisation.

Records of sampling time/date, sampler, and observations (colour, odour, sheen, turbidity) shall be recorded.

Appropriate data quality assurance (QA) and quality control (QC) procedures consistent with the above guidance shall be implemented and assessed as part of the program.

All analyses shall be conducted by a National Association of Testing Authorities (NATA) accredited laboratory.

4.4.5 Assessment Criteria

EPL

Condition L1 of the EPL states that the licensee must comply with section 120 of the POEO Act, which prohibits the pollution of waters. Stormwater quality must also meet discharge requirements outlined in Condition M2 of the EPL to monitor concentration of pollutants discharged. The EPL concentration limits are summarised in **Table 4.2** below and apply to monitoring Point 4 only.

Table 4.3 Surface Water Assessment Criteria – Monitoring Point 4

Pollutant	Units of Measure	Within Range of	100 Percentile Concentration Limit
pH	pH	6.5 – 8.5	
Total Suspended Solids (TSS)	mg/L		50

Internal Quality Assessment - Process Water

As noted in **Section 4.4.2**, water from Point 3 is sourced from Void 4, which receives water stormwater surrounding land, and seepage from Void 5. On this basis, sources of potential impact to water quality in void 4 extend beyond operational controls and water quality should be assessed for:

- Significant changes to Void 4 quality that may indicate a source of significant impact.

It is assumed that potential health risks that may be posed by process water (if any) are managed via implementation of workplace health and safety procedures as part of facility operation.

Table 4.4 Surface Water Assessment Criteria – Monitoring Point 3

Aspect	Adopted Assessment Criteria
Change to baseline conditions	No statistically significant increasing trend or 20% increase over historical range for the sampling point.

4.4.6 Trigger Levels and Action Responses

Trigger levels and action responses to be applied to the surface water monitoring program are presented in **Table 4.5.**

Table 4.5 Surface Water Management Plan Trigger Level and Action Responses

Aspect	Trigger	Actions
Surface Water Monitoring	Assessment criteria outlined in Section 4.4.5 exceeded.	Consider re-sampling or increased sampling frequency to confirm results. Assess possible sources of contamination – i.e. change in site operations, change in neighbouring site operations or spills. Refer to the Groundwater Management Plan (Section 6.0) regarding changes in Void 4 water quality. Assess the significance of associated environmental risk – where a potentially unacceptable risk is identified, a suitably qualified and experienced professional should assess whether the monitoring program is adequate to assess potential contamination risks and recommend program changes (if necessary) (e.g., additional sampling locations, more frequent monitoring or different contaminants of concern). Implement the amended monitoring program. Develop and implement management/remedial actions if necessary.
Site Activities	Incident (e.g. spill or release of a material or liquid) that could result in impact to surface or groundwater. Surface water discharge point and associate flow path contaminated with litter, debris or other visual indicators of contamination.	Assess whether monitoring program is adequate to assess potential impact associated with the incident. This assessment should be undertaken by a suitable qualified and experienced professional and documented in a report with clear conclusions and recommendations for amendments (if necessary). Implement program changes – these may include increased monitoring frequency, inclusion of additional monitoring locations, installation and monitoring of additional monitoring locations, broader analytical suite to assess the chemicals of concern.

Additionally, the stormwater system should be inspected and maintenance activities undertaken to maximise the performance of the system. Supplementary monitoring and maintenance actions are listed in **Table 4.6.**

Table 4.6 Supplementary Monitoring and Maintenance Actions

Item being monitored	Monitoring Task	Purpose of Monitoring	Maintenance Action
General			
Sediment Build Up	Check for excessive build-up of sediment in stormwater system including channels and stormwater basin.	If sediment accumulates in stormwater systems, capacity reduction can occur. Erosion and sedimentation of stored waste and finished products may contribute to increased transport of pollutants.	Once sediment source has been identified, remove accumulated sediment and address source issue. Removed sediment can be recycled into compost materials.
Litter (anthropogenic)	Check for litter in and around stormwater system.	Litter can potentially block inlet and outlet drains resulting in flooding, as well as detract from the system's visual amenity.	Address source of litter with appropriate action. Remove litter.
Litter (organic)	Check for organic litter including leaves and sticks.	Organic litter can increase nutrients to the stormwater basin. Accumulated organic matter can also create offensive odours and can reduce percolation of water in the stormwater basin.	Identify and address sources of organic litter with appropriate action. Remove litter.
Inlet and Outlet Channels	Ensure inflow areas and channels are clear of litter and in good condition. Check for dislodged or damaged channels and ensure safety and general structural integrity.	If channels become blocked it will significantly reduce the amount of stormwater entering the system.	Remove debris, repair damage.
Devices			
Stormwater Basin	Monitor water levels of the basin. Ensure general structural integrity of the basin/dam.	If basin has less than 500 mm of free board or structures are damaged, then off-site discharge/runoff to Void 4 may occur.	Repair any structural damage using clay, preferably bentonite or bentonite clay mixture. Reduce water levels where feasible.
Truck Wash & Inground Dirty Water Pit	Ensure channels/pipes are unblocked and are operating correctly. Regularly check the structural integrity of the pit. Check for any accumulated litter, sediment, or debris on or within the pit.	If any fixtures are not operating correctly, it is likely that sediment and debris will accumulate in the pit and reduce water quality. If the pit is not sound, it is likely to fail.	Remove any litter, settlement or debris from the devices. Repair or replace any damaged components. If any accumulation is found within the pit, excavate the material out and place within the feedstock material for composting.
Drainage Channels	Ensure general structural integrity of drainage channels. Ensure channels are unblocked and are operating correctly.	Failure of the channels to perform as designed may result in local overflows, sediment and nutrient deposit downstream and/or off-site runoffs or discharges.	Remove deposited sediment, vegetation or any blockage from the channels. Repair any structural damage placing crushed rocks.

4.4.7 Reporting

Table 4.7 presents reporting requirements under the SGWMP. In addition, reporting conditions under the EPL must be met.

Table 4.7 SGWMP Reporting Requirements

Report Type	Content
Quarterly Data Review	No report required, however, inspection and monitoring data should be consolidated and reviewed to assess whether any actions are triggered.
Annual Report (in accordance with SSD 9418 condition C14)	Interpretive annual reports shall document: • Details of monitoring scope and methods, including non-conformances with this program. • A plan showing monitoring locations. • Field and inspection records and laboratory analytical certificates. • Tabulated sampling analytical results. • Review of exceedances of performance criteria against trigger and action levels or significant changes, including root cause and whether changes to the monitoring program are warranted. • Review of QA/QC. Reporting shall be conducted by a suitable qualified and experienced person. Periodic review of the trigger-response plan and monitoring program by a suitable qualified and experienced person.

5.0 Leachate Management Plan

This Section addresses leachate management and monitoring measures to be implemented on-site.

During development of this management plan, monitoring in NSW DEC (2004) *Environmental Guidelines for Composting and Related Organics Processing Facilities*, were considered.

5.1 Leachate Risks

The Surface Water Impact Assessment (Fifteen50, August 2019a) developed as part of the EIS notes that the risk of discharge of leachate water from the site to the surface water environment is negligible on the basis that the combined storage capacity of the leachate dams, stormwater discharge basin and Void 4 is thousands of megalitres.

Given the groundwater depth (greater than 40 m below the site) and the site comprises a surface water and leachate management system (refer **Section 4.3.1**) the risk of leachate infiltration to groundwater aquifers beneath the site has been assessed as minor (Fifteen50, Aug 2019b). This is addressed in the Groundwater Management Plan (**Section 6.0**) however protection of groundwater quality ultimately relies on sound leachate and surface water management.

Leachate quality could also impact compost product quality if concentrations of contaminants exceed typical concentrations. This could be due to contaminated feedstock being imported to site or chemical or fuel spills draining to the leachate dams.

In June 2024 there was an incident at the western leachate dam where an earth fissure in the base of the dam saw leachate discharge vertically into the substrate (i.e., fly ash filled Void 3). This incident was not as a result of any activity by Bettergrow rather, it is believed that there had been movement/settlement in the below substrate which had been a section of an underground longwall mine which was filled by AGL Macquarie in the early 2000's. This incident caused the western dam to be off-line with all leachate water being diverted, through a series of swales, to the eastern leachate dam. Rectification works to the western dam were completed in April 2025. The diversion swales were removed to allow leachate from the western pad enter this basin.

5.2 Leachate Management

Leachate at the site is managed via design of infrastructure to required specification to contain runoff and minimise infiltration and seepage through the processing pads and leachate dam as described in **Section 4.3.1**. Leachate volumes are managed via frequent application of leachate to compost windrows. Specific management controls relating to leachate include:

- Ensure that solid wastes are not directly discharged to the leachate dam.
- Ensure that toxic or hazardous substances do not enter the leachate dam.
- Ensure that once the capacity of the leachate dam is reduced by >30%, excess sediment/sludge is removed and stockpiled/re-incorporated into compost.
- Ensure a minimum 500 mm freeboard is maintained in the leachate dam at all times, and that it is reinstated promptly after rainfall events. A level marker within the leachate dam is required under the EPL.
- **HOLD POINT**. In the event the 500mm minimum freeboard may be breached (i.e., where the water level is nearing the 1m mark on the water level meter), a controlled discharge event can occur. For this to occur, the Site Coordinator or delegate must take a grab sample at Point 2 as identified on the Site Plan (see **Appendix A**) and in accordance with EPL 7654. This sampling can only be done Monday to Friday (due to lab opening hours), on a 48hr turn around time with a

NATA accredited laboratory. This will allow sufficient time for analysis to be received and reviewed by the Environmental Manager. Only when the results meet with the discharge limits approved by the EPA will the **HOLD POINT** be lifted by the Environmental Manager. The Site Coordinator will be advised discharge can commence. If pollutants have exceeded the discharge limits, treatment actions will be identified and once implemented, retesting of the dam will occur.

- Where controlled discharge can occur, a pump will be set up with a float device attached to the inlet pipe to ensure that this does not pick up any sediment from the base of the basin. The outlet pipe is to be placed on the rick rip rap spillway. The pump is to be turned off at the end of each day.
- It is a requirement of EPL 7654 that sampling is to be done **daily during any discharge** therefore, if discharge is to continue, sampling will need to be undertaken for each subsequent day.
- Ensure use of leachate water only occurs within the treatment pad areas. Leachate should not be used for dust suppression on haul roads.
- Check Singleton BoM weather monitoring station to inform of weather conditions, in particular consider wind conditions to ensure spray from leachate irrigation does not drift beyond active compost rows.
- Ensure that the top half of the leachate dam is aerobic (i.e. > 4 ppm dissolved oxygen).
- Ensure no odour is noticeable from the leachate dam. If the leachate dam has received significant loading, is anaerobic or releasing offensive odour, add microbial inoculums or bio-stimulants, such as BioAktiv, to the leachate dam to suppress odour. Aeration of the leachate pond would need to be considered in the event that odours could not be controlled through treatment of the water.
- Ensure that pH of the leachate dam is maintained between 6.5 and 8.5 pH units. If pH adjustment is required, introduce dilute solutions to neutralise.

Additional management measures to be implemented on-site to control leachate risks include:

- Good site hygiene to limit presence of uncontrolled waste on site.
- Ensure that all liquid is sufficiently mixed with absorbent material (i.e. green waste bund or sawdust etc.) and then is incorporated into the composting process.
- Ensure all windrows are constructed in parallel to leachate flow paths.
- Ensure wash down areas are adequately capturing and treating all wastewater, with collected solid material that cannot be incorporated into the composting process, disposed off-site to a licensed facility.
- Ensure that process water for cleaning equipment is not (indirectly) discharged to any watercourses or stormwater system.
- Ensure ponding or pooling of leachate on-site does not occur. In the event that ponding or pooling of leachate does occur, clean-up action must be initiated immediately and surface gradients re-established.
- Maintain surface gradient of the hardstand pad and orientation/geometry of windrows to minimise leachate generation and to ensure that leachate flows directly to the primary detention basin without mixing with compost organics.
- Implement procedures for testing, treatment and discharge of leachate, including monitoring anaerobic conditions. Monitoring and optimisation of the moisture content of waste during the composting process should also be undertaken to manage leachate generation.
- Undertake aeration of the leachate dam (increase oxygen) if required (i.e. if hydrogen sulphide, dissolved oxygen or pH levels are outside limits).
- Monitor water levels of the leachate dam to ensure that levels do not drop below the anticipated use of water from composting and evaporation.
- Ensure that leachate basin is regularly desilted in order to maintain design storage capacity, without compromising basin liner integrity.

- Ensure that all water that has entered the processing pads and water that has been contaminated by leachate is handled and treated as leachate.
- Maintain leachate collection and storage facilities to collect and impound all leachate in accordance with the design storm event.
- Recycle leachate through moisture conditioning of organic waste during composting process to drawdown on basin volume and ensure the design capacity of the basin is maintained for future storm events.
- Ensure integrity of on-site infrastructure and structural integrity of drains, hardstand areas and leachate dam. Inspect and maintain all water related infrastructure designed to maximise runoff and reduce infiltration including:
  - Low permeability base in the processing pads.
  - Lining or appropriate compaction of low permeability materials used in constructing the leachate dam.
  - Bunding and arrangement of windrows.
  - Perimeter bunding and diversion drains.
- Repair and maintain any cracks observed in the base and side walls of the leachate dam using clay, preferably bentonite or bentonite clay mixture.
- Contain, clean up and reincorporate any bulk leachate runoff from windrows.
- Implement leachate monitoring program (for details refer to **Section 5.3**).

5.3 Leachate Monitoring

5.3.1 Monitoring Objectives

The objectives of leachate monitoring are to:

- Ensure leachate controls are adequately maintained and performing to meet the performance targets set out in the SSD COC.
- Assess leachate quality with respect to Condition L1, L2 and M2 of the EPL.
- Assess leachate quality to manage compost product quality.

5.3.2 Monitoring Network

The relevant leachate monitoring network identified in the EPL are presented below and the locations illustrated on Bettergrow's Infrastructure Plan 0011 (July 2024) **(Appendix A)**.

Table 5.1 Leachate Monitoring Network

EPA Identification Number	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Leachate Dam characterisation	-	South of site
2	Leachate dam emergency spillway	Leachate dam emergency spillway	Northeast corner of leachate dam.

5.3.3 Monitoring Requirements

The leachate sampling program in **Table 5.2** below comprises the following periodic and discharge event-based sampling in accordance with the EPL.

Consideration of assessing leachate for additional contaminants of concern should be given. The contaminants of concern should reflect contaminants that may be associated with the feedstocks on site. The contaminants of concern would require reassessment upon approved receipt of new waste types on site.

The monitoring program may be subject to change as a response to changes in site activities and/or in accordance with the triggers and actions (**Section5.3.6**).

Table 5.2 Leachate Monitoring Program

Monitoring Type	Frequency	Monitoring Aspect	Locations	Analytical Schedule	Reporting Schedule
Periodic Sampling (EPL)	Quarterly	Sampling and analysis~	Leachate dam (point 1)	pH^, EC, alkalinity (as calcium carbonate), ammonia, calcium, chloride, fluoride, iron, magnesium, manganese, nitrogen (total), phosphorus, PAH, potassium, sodium, sulfate, TOC, TPH, total phenolics, and TSS.	Annual interpretive report and EPL Annual Return. Trend analysis to be undertaken after each sampling event (e.g. update a trend graph with latest results to visualise data and identify results outside historical range).
Visual Inspection	Weekly	Water levels and general quality	Leachate dams and associated drainage	No gross pollutants observed or waste materials stored or accumulated at ground surface or in surface runoff. No significant sediment build up in leachate dams	Annual Interpretive report
	Per rainfall event	Water levels and general quality	Leachate dams and associated drainage	leachate control devices maintained and operating as designed. No significant sediment accumulated in drains or dams.	
Event Based sampling (EPL)	Daily during any discharge	Gauging, sampling and analysis~	Leachate dam emergency spillway (point 2)	pH^, EC, alkalinity (as calcium carbonate), ammonia, calcium, chloride, fluoride, iron, magnesium, manganese, nitrogen (total), phosphorus, PAH, potassium, sodium, sulfate, TOC, TPH, total phenolics, and TSS. Ongoing: Ammonia, pH, and TSS,or subject to results of above sampling. Record level in leachate dam as appropriate.	Reporting per event and EPL Annual Return
Controlled Discharge (see HOLD POINT at Section 5.2)	Daily during any discharge	Sampling and analysis	Leachate dam emergency spillway (Point 2)	pH, EC, alkalinity (as calcium carbonate), ammonia, calcium, chloride, fluoride, iron, magnesium, manganese, nitrogen (total), phosphorus, PAH, potassium, sodium, sulfate, TOC, TPH, total phenolics, and TSS. Ongoing: Ammonia, pH, and TSS, subject to results of above sampling. Record level in leachate dam as appropriate.	Reporting per event and EPL Annual Return

Monitoring Type	Frequency	Monitoring Aspect	Locations	Analytical Schedule	Reporting Schedule
Triggered Event	Event based	Sampling and analysis*	As required*	As required*	Reporting per event and EPL Annual Return

* The required sampling and analytical schedule should be assessed by a suitable qualified and experienced person at the time of the trigger response.

~ If no water is present within the leachate dam, photographs of the leachate dam must be taken as evidence to provide to the EPA if requested. In such instances, monitoring of the leachate dam must occur at the next available opportunity so as to determine water quality.

Additionally, the leachate management system should be inspected and maintenance activities undertaken to maximise the performance of the system. Supplementary monitoring and maintenance actions are listed in **Table 5.3.**

Table 5.3 Supplementary Monitoring and Maintenance Actions

Item being monitored	Monitoring Task	Purpose of Monitoring	Maintenance Action
General			
Sediment Build Up	Check for excessive build-up of sediment in drainage lines channels and leachate dam.	If sediment accumulates, capacity reduction can occur. Erosion and sedimentation of stored waste and finished products may contribute to increased transport of pollutants.	Once sediment source has been identified, remove accumulated sediment and address source issue. Removed sediment can be recycled into compost materials.
Litter (anthropogenic)	Check for litter in and around processing pads.	Litter can potentially block inlet and outlet drains resulting in flooding, as well as detract from the system's visual amenity.	Address source of litter with appropriate action. Remove litter.
Litter (organic)	Check for organic litter including leaves and sticks.	Organic litter can increase nutrients to the stormwater basin. Accumulated organic matter can also create offensive odours and can reduce percolation of water in the stormwater basin.	Identify and address sources of organic litter with appropriate action. Remove litter.
Inlet and Outlet Channels	Ensure inflow areas and channels are clear of litter and in good condition. Check for dislodged or damaged channels and ensure safety and general structural integrity.	If channels become blocked it will significantly reduce the amount of leachate entering the system and may increase risk of leachate infiltration.	Remove debris, repair damage.

Item being monitored	Monitoring Task	Purpose of Monitoring	Maintenance Action
Devices			
Leachate Dam	Monitor water levels of the dam. A level marker should be installed in the leachate dams is per condition O6.7 of the EPL. Ensure general structural integrity of the dam.	If dam has less than 500 mm of free board or structures are damaged, then overflow may occur.	Repair any structural damage using clay, preferably bentonite or bentonite clay mixture. Reduce water levels where feasible. See controlled discharge management under Section 5.2 and Table 5.2 above.
Truck Wash & Inground Dirty Water Pit	Ensure channels/pipes are unblocked and are operating correctly. Regularly check the structural integrity of the pit. Check for any accumulated litter, sediment, or debris on or within the pit.	If any fixtures are not operating correctly, it is likely that sediment and debris will accumulate in the pit and reduce water quality. If the pit is not sound, it is likely to fail.	Remove any litter, settlement or debris from the devices. Repair or replace any damaged components. If any accumulation is found within the pit, excavate the material out and place within the feedstock material for composting.
Drainage Channels	Ensure general structural integrity of drainage channels. Ensure channels are unblocked and are operating correctly.	Failure of the channels to perform as designed may result in local overflows, sediment and nutrient deposit downstream and/or off-site runoffs or discharges.	Remove deposited sediment, vegetation or any blockage from the channels. Repair any structural damage placing crushed rocks.

5.3.4 Sampling and Analytical Methods

Sampling shall be undertaken by a suitably qualified and experienced person consistent with guidance in:

- DEC (2004). Approved Methods for Sampling and Analysis of Water Pollutants in NSW. March 2004.
- AS/NZS 5667.1:1998, *Water Quality – Sampling* series.
- NEPC (2013). Schedule B (2) Guideline on Site Characterisation.

Appropriate data QA/QC procedures consistent with the above guidance shall be implemented and assessed as part of the program.

All analyses shall be conducted by a NATA accredited laboratory.

5.3.5 Assessment Criteria

EPL

Condition L1 of the EPL states that the licensee must comply with section 120 of the POEO Act, which prohibits the pollution of waters. Leachate quality must also meet discharge requirements outlined in Condition M2 of the EPL. EPL concentration limits are outlined in **Table 5.4** below.

Table 5.4 Leachate Assessment Criteria – EPL Conditions

Pollutant	Units of Measure	Within Range of	100 Percentile Concentration Limit
pH	pH	6.5 – 8.5	
TSS	mg/L		50
Ammonia	mg/L		0.9

Internal Quality Assessment – Leachate

Leachate chemical results reported as part of monitoring under the EPL should be assessed for significant changes to leachate quality that may increase contaminant loads within compost product during irrigation activities. Analytical results should be assessed against these criteria after each sampling event.

It is assumed that potential health risks that may be posed by leachate are managed via implementation of workplace health and safety procedures as part of facility operation.

Table 5.5 Leachate Assessment Criteria

Aspect	Adopted Assessment Criteria
Change to baseline conditions	No statistically significant increasing trend or 20% increase over historical range for the sampling point.

5.3.6 Trigger Levels and Action Responses

Trigger levels and action responses to be applied to the leachate monitoring program are presented in **Table 5.6**.

Table 5.6 Leachate Management Plan Trigger Level and Action Responses

Aspect	Trigger	Actions
Leachate Monitoring	Concentrations of key indicator analytes outlined in **Section 5.3.3** exceed performance criteria.	Consider re-sampling or increased sampling frequency to confirm results. Assess possible sources of contamination – i.e. change in site operations, change in neighbouring site operations or spills. Review raw material assessment data for significant changes in quality. Review compost product monitoring to assess whether changes in leachate quality have impacted product quality. Assess the significance of associated environmental risk – where a potentially unacceptable risk is identified, a suitably qualified and experienced professional should assess whether the monitoring program is adequate to assess potential contamination risks, and recommend program changes (if necessary) (e.g., additional sampling locations, more frequent monitoring or different contaminants of concern). Implement the amended monitoring program. Develop and implement management/remedial actions if necessary.

Aspect	Trigger	Actions
Site Activities	Incident (e.g. spill or release of a material or liquid) that could result in impact to surface or groundwater.	Assess whether monitoring program is adequate to assess potential impact associated with the incident. This assessment should be undertaken by a suitable qualified and experienced professional and documented in a report with clear conclusions and recommendations for amendments (if necessary). Implement program changes – these may include increased monitoring frequency, inclusion of additional monitoring locations, installation and monitoring of additional monitoring locations, broader analytical suite to assess the chemicals of concern.
Leachate Level Monitoring	Leachate level exceeds the dams level marker	Reinstate level of dam below marker level. If this cannot be achieved via application of leachate onto compost piles, consider the need to engage a suitably qualified contractor to dispose of leachate to a licensed facility.

Additionally, if there are visual indications of contamination (e.g. a visible sheen on the stormwater or hydrocarbon odour), then the surface water/stormwater system should be inspected and maintenance activities undertaken to maximise the performance of the treatment train. Supplementary monitoring and maintenance actions are listed in **Table 4.4**.

5.3.7 Reporting

Table 5.7 Leachate Management Plan Reporting Requirements

Report Type	Content
Quarterly Data Review	No report required, however, inspection and monitoring data should be consolidated and reviewed to assess whether any actions are triggered.
Annual Report (in accordance with SSD 9418 condition C14)	• Details of monitoring scope and methods, and any non-conformances with the SGWMP. • A plan showing monitoring locations. • Field records, calibration certificates and laboratory analytical certificates. • Tabulated results (gauging, field measurements and analytical data). • Record of exceedances and actions taken • Comparison of analytical results against performance criteria. • Record of exceedances and actions taken • Details of any incidents, complaints, spillages or required corrective actions. • Trend analysis, including historical data of last 3 years. • Assessment of exceedances of performance criteria against trigger and action levels, including assessment of source, nature and extent of impact. • Review trigger-response plan and monitoring program.

6.0 Groundwater Management Plan

6.1 Groundwater Risks

As detailed in **Section 2.5,** the site is located on a capped open cut mining void (Void 3) which has been filled with fly ash from the AGL Bayswater Power Station and rehabilitated. The groundwater depth is more than 40 metres below the site surface level. (Fifteen50, Aug 2019b).

Potential risks the operation poses to groundwater quality relate to:

- Leachate infiltration to groundwater aquifers beneath the site, which could impact groundwater with contaminants of concern. Infiltration of leachate of low pH (acidic) can also mobilise heavy metal compounds from the fly ash into groundwater aquifers.
- Spillage of fuels, oils or chemicals from plant and equipment on-site resulting in soil and/or groundwater contamination.

Given the groundwater depth (greater than 40 m below the site) and the site comprises a surface water and leachate management system (refer **Section 4.3.1**) the risk of leachate infiltration to groundwater aquifers beneath the site has been assessed as minor (Fifteen50, Aug 2019b).

Groundwater vulnerability maps have been prepared by the NSW Department of Industry for some catchments in NSW. A groundwater vulnerability map has not been prepared for the Hunter River catchment, which includes the site. Given that the site and surrounding areas have historically been used for open cut and underground mining, the groundwater in the area is not considered to be vulnerable (Fifteen50, Aug 2019b).

As mentioned above in **Section 5.1**, leachate did infiltrate into the subsurface however it is unknown if this entered the groundwater aquifer. As noted above, Fifteen50 (Aug 2019b) stated that the groundwater in the area is not considered to be vulnerable and further, that the groundwater flows to Void 4 therefore, if this water did infiltrate the aquifer, impacts can be deemed low if at all given that the groundwater aquifer is greater than 40m below the site.

6.2 Baseline Conditions

Historical groundwater gauging records, field-measured parameters and analytical data are provided in the Groundwater Impact Assessment (Fifteen50, Aug 2019b) developed for the EIS (RPS, Nov 2019).

The site is located within a mining region, with aquifers supporting considerable consumptive use for mining and agriculture. As such, there are numerous groundwater bores within the area.

Figures 2 below provides an indication of well locations with respect to the site and **Figure 3** presents the bore records associated with the illustrated wells (Fifteen50, Aug 2019b). An online WaterNSW bore search undertaken by Senversa on 19 June 2023 did not indicate that any groundwater wells have been installed within 500 m of the site since the EIS was published (RPS, Nov 2019).

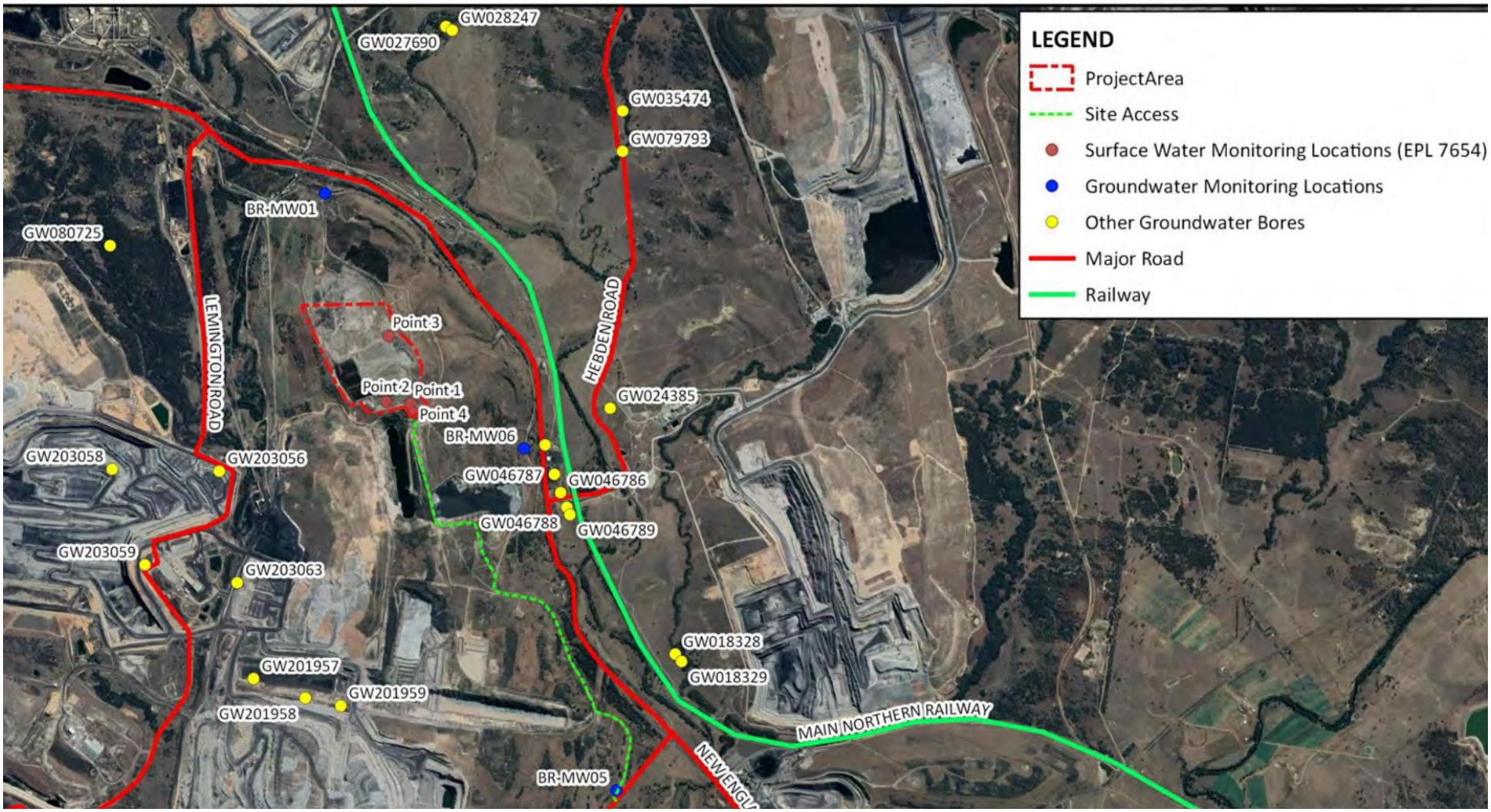


Figure 2 - Monitoring bore plan (Fifteen50 Consulting, August 2019).

Bore site	Type	Distance to site (m)	Date drilled	Status	Bore depth (m)	Drilled bore depth (m)
GW018328	Well	2,963	1/01/1959	Supply Obtained	5.8	
GW018329	Well	3,044	1/01/1959	Collapsed bore	4.9	
GW024385	Well	1,183	1/01/1926	Unknown	4.6	
GW027690	Well	2,851	1/01/1966	Unknown	5.5	5.5
GW028247	Well	2,816	1/01/1962	Unknown	2.4	2.4
GW035474	Bore	2,456		Filled	3.9	3.9
GW046786	Well	1,296	1/01/1972	Unknown	6.9	7
GW046787	Well	1,138		Unknown	6.2	8
GW046788	Well	1,428		Unknown	6.1	6.2
GW046789	Well	1,494		Unknown	6.9	6.9
GW078054	Bore	894		Unknown	16.2	16.2
GW079793	Well	2,168		Manual Observations	2.82	
GW080725	Bore	3,246	8/10/2000	Unknown	130	
GW201957	Bore	3,253	15/07/2006	Equipped	77.75	77.75
GW201958	Bore	3,167	15/08/2006	Equipped	71.1	71.1
GW201959	Bore	3,103	15/08/2006	Equipped	69.2	69.2
GW203056	Vibrating Wire Piezometer	2,351	18/04/2014	Equipped	262	262
GW203058	Vibrating Wire Piezometer	3,199	18/04/2014	Equipped	251	251
GW203059	Vibrating Wire Piezometer	3,269	10/05/2014	Equipped	248	248
GW203063	Vibrating Wire Piezometer	2,736	18/04/2014	Equipped	300	300

Figure 3 – Bore records nearby to the site (Fifteen50 Consulting, August 2019).

Glencore and AGL undertake routine monitoring of basic parameters (pH, EC and water levels) of bores nearby to the site. This data is detailed within a Groundwater Impact Assessment Water (Fifteen50, Aug 2019b), which reported that:

- Water levels are generally steady over time, with major changes in water level generally due to encroaching mining activities.
- The three monitoring bores closest to the site are MW01, MW02 and NPZ5b adjacent to Bayswater Creek. The bores recorded historical water levels measured at (approx.) 67 mAHD and 61 mAHD (respectively) over the period of record. These monitored water levels are more than 40 m lower than the lowest point within the site.
- pH ranges from neutral to alkaline (6.8-8.3).
- EC ranges from 9,670 to 41,964 µs/cm.

Water of this quality is generally limited to industrial use, with salinity levels being in excess of acceptable limits for stock and domestic consumption, and detrimental to crops and soils when used for irrigation.

Additionally, a search of the Groundwater Dependent Ecosystem Atlas from the Bureau of Meteorology (BoM) indicated that there are no aquatic or terrestrial Groundwater Dependent Ecosystems (GDEs) within or immediately adjacent to the Ravensworth site plan (Fifteen50 Consulting, August 2019).

6.3 Groundwater Management

The primary management measure to prevent or mitigate (as far as is reasonably practicable) groundwater risk associated with leachate infiltration to groundwater beneath the site consists of appropriate implementation of the surface water and leachate management measures established in **Section 3.0** and **Section 4.0.**

In addition, design specifications and other requirements within the DA consent and OEMP must be met.

6.4 Monitoring Requirements

During development of the monitoring requirements below, the NSW DEC (2004) *Environmental Guidelines for Composting and Related Organics Processing Facilities* were considered. The guideline states that if the groundwater underneath and adjacent to the facility is vulnerable and that systems to prevent groundwater pollution are required, then a groundwater and subsoil monitoring network must be established.

A groundwater monitoring program does not form a routine measure for groundwater management at the site on the basis that groundwater is not considered vulnerable from the following noted in the Groundwater Impact Assessment ((Fifteen50, Aug 2019b):

- The outcomes of the groundwater impact assessment undertaken as part of the EIS indicates that risk of leachate infiltration to groundwater aquifers beneath the site is minor. Groundwater underneath the site flows into Void 4 immediately to the south, providing opportunity to capture and recycle water infiltrated through the site (Fifteen50, Aug 2019b).
- The groundwater in the area is not considered to be vulnerable on the basis the site and surrounding areas have historically been used for open cut and underground mining.
- A search of the Groundwater Dependent Ecosystem Atlas from the Bureau of Meteorology (BoM) indicated that there are no aquatic or terrestrial Groundwater Dependent Ecosystems (GDEs) within or immediately adjacent to the Ravensworth site plan (Fifteen50, Aug 2019b).
- Data obtained from an offsite monitoring well network indicates that salinity levels in groundwater in excess of acceptable limits for stock and domestic consumption, and detrimental to crops and soils when used for irrigation (Fifteen50, Aug 2019b).
- The Groundwater Impact Assessment undertaken for the site states that additional groundwater monitoring is not considered necessary.

However, a provision for groundwater well installation and monitoring is an action response to an actual or potential significant loss of containment (e.g. loss of leachate from ponds or drainage lines; loss of fuel during fuel storage and/or handling) - refer to **Section 6.3.2** below.

On the basis of the above, it is considered that effective management of surface water and leachate, as outlined in **Section 4.0** and **Section 5.0**, will minimise the risk of leachate infiltration below the site and potential impacts on groundwater quality.

6.4.1 Triggers and Action Responses

Trigger levels and action responses to be applied to groundwater management are presented in **Table 6.1** below.

Table 6.1 Groundwater Management Plan Trigger Level and Action Responses

Site Activities	**Incident (e.g. spill or release of a material or liquid) that could result in infiltration and impact to groundwater.**	A suitably qualified and experience hydrogeologist should evaluate the potential risk to groundwater, including obtaining recent available groundwater monitoring data for wells located within 1km of the site to establish current baseline conditions, and designing a monitoring network. The monitoring network should include monitoring bores at locations and depths capable of assessing the nature and extent of impacts to groundwater. At a minimum this should include three on-site monitoring wells, including 1 well located up hydraulic gradient of the incident, and two wells located down hydraulic gradient of the incident. Wells should be constructed and developed with consideration of Minimum Construction Requirements for Water Bores in Australia (NUDLC, 2020). Gauging and sampling of each well shall be undertaken by a suitably qualified and experienced person consistent with guidance in: DEC (2004). Approved Methods for Sampling and Analysis of Water Pollutants in NSW. March 2004. AS/NZS 5667.1:1998, Water Quality – Sampling series. NEPC (2013). Schedule B(2) Guideline on Site Characterisation. Appropriate data QA/QC procedures consistent with the above guidance shall be implemented and assessed as part of the program. The source of the spill should be characterised or sampled for a broad analytical suite to inform the contaminants of concern that need to be analysed in groundwater samples. The analytes are expected to include, as a minimum, pH, EC, nutrients and heavy metals. All analyses shall be conducted by a NATA accredited laboratory. If existing AGL monitoring wells are assessed as being suitable, Bettergrow should sample the wells rather than rely on AGL data to ensure consistency and that the contaminants of concern associated with the incident are analysed. Groundwater monitoring frequency and duration should be evaluated by the hydrologist. As a minimum, monitoring should be undertaken quarterly for the first year, and bi-annually for the second year. The requirement for ongoing monitoring should be evaluated as part of reporting (Section 6.3.4). The wells should be surveyed by a licensed surveyor, including coordinates and elevation of the top of casing (m AHD) to facilitate an assessment of groundwater elevation and flow.
Change in Void 4 Water Quality	Significant change in Void 4 Water Quality	Consider whether changes in Void 4 water quality are attributed to onsite sources of impacts that could also have impacted groundwater quality.

6.4.2 Assessment Criteria

Condition L1 of the EPL states that the licensee must comply with section 120 of the POEO Act, which prohibits the pollution of waters. Assessment of groundwater quality will principally be via comparison against baseline and site background conditions. **Table 6.2** below summarises the groundwater quality criteria to be adopted to assess whether pollution of waters may have occurred. A suitably qualified and experienced environmental consultant or hydrogeologist should undertake the assessment.

Table 6.2 Groundwater Assessment Criteria

Aspect	Adopted Assessment Criteria
Change to baseline / background conditions	No statistically significant increasing trend in concentrations of contaminants of concern related to the incident; AND Statistically significant higher concentrations than baseline / site background concentrations or values. This may be evaluated using principals in ANZG (2018) for comparison of water quality at test sites against reference sites (e.g. comparison of the median concentration against the 80th percentile of the baseline/background levels).
Risk	The assessment of change (above) is only relevant if the contaminant of concern is present at sufficiently high levels that could migrate and result in an elevated risk to the environment. Groundwater may migrate and discharge into Bayswater Creek, which is the nearest surface water body 600 m down gradient of the site and is considered highly modified due to mining and power generation activities and exhibit elevated salinity levels (Fifteen50, August 2019). The creek generally flows from north to south to discharge into the Hunter River six kilometres to the south of the site. The relevant ecological guidelines for toxicants, are therefore, the freshwater default guidelines values (DGV) for heavily disturbed environments from ANZG (2018). ANZG (2018) notes that exceedance of a DGV does not necessarily imply that there is an inherent risk, rather that further assessment and monitoring may be required prior to implementing appropriate management actions. As such, these values are considered conservative screening levels and should be used as 'triggers' for further assessment. Application of NHMRC (2008) Primary Contact Recreation – Health guidelines should also be applied to in consideration of discharges to Bayswater Creek and subsequent contact by human receptors.

It is noted that these criteria for groundwater monitoring are for screening purposes to trigger further assessment (and are not appropriate to directly assess the level of risk to any identified receptors).

6.4.3 Reporting

The results of groundwater monitoring and assessments should be reported as required in the OEMP, with a minimum requirement set out in the table below.

Table 6.3 Reporting Requirements

Incident Report (after every monitoring round)	• Present details of incident. • Trend analysis. • Assessment of exceedances of performance criteria against trigger and action levels, including assessment of source, nature and extent of impact. • Review trigger-response plan and monitoring program. • The interpretive report should encompass the previous sampling events and the baseline data to assess ongoing groundwater monitoring requirements.

7.0 Principles and Limitations of Report

The following principles (summarised in **Table 7.1** below) are intended to be referred to in resolving any ambiguity or exercising such discretion.

Table 7.1 Principles and Limitations of Report

Area	Principle and Limitation
Limitations of Information	This SGWMP has been prepared by Senversa for the use of Borg and Bettergrow Pty Ltd. The sources of information used by Senversa are outlined in this SGWMP. In preparing the SGWMP, Senversa has relied upon information regarding the Ravensworth Composting Facility prepared by other companies and no independent verification of this information has been made beyond the agreed scope of works and we assume no liability for any inaccuracies in or omissions to that information. No indications were found during our development of the SGWMP that information contained in this SGWMP as provided to Senversa was intentionally false.
Level of Assessment	Senversa prepared this SGWMP in a manner consistent with the level of care and skill ordinarily exercised by members of Senversa's profession practicing in the same locality under similar circumstances at the time the services were performed.
Nature of Advice	This SGWMP should be read in full. No responsibility is accepted for use of any part of this Report in any other context or for any other purpose or by third parties. Senversa does not seek or purport to provide legal or business advice.

8.0 References

Bureau of Meteorology (2019). *Groundwater Dependent Ecosystems Atlas*, http://www.bom.gov.au/water/groundwater/gde/map.shtml, viewed 18 September 2018 and 28 November 2018.

Fifteen50 Consulting (2019a). RPS Australia East Pty Ltd – *Greenspot Recycling Facility EIS: Surface Water Report*.

Fifteen50 Consulting (2019b). RPS Australia East Pty Ltd – *Greenspot Recycling Facility EIS: Groundwater Report*.

Glencore (2018). *Ravensworth Complex Annual Environmental Review*.

Landcom (2004) *Managing Urban Stormwater: Soils and construction* - Volume 1, 4th edition.

NSW DEC (2004) Environmental Guidelines for Composting and Related Organics Processing Facilities.

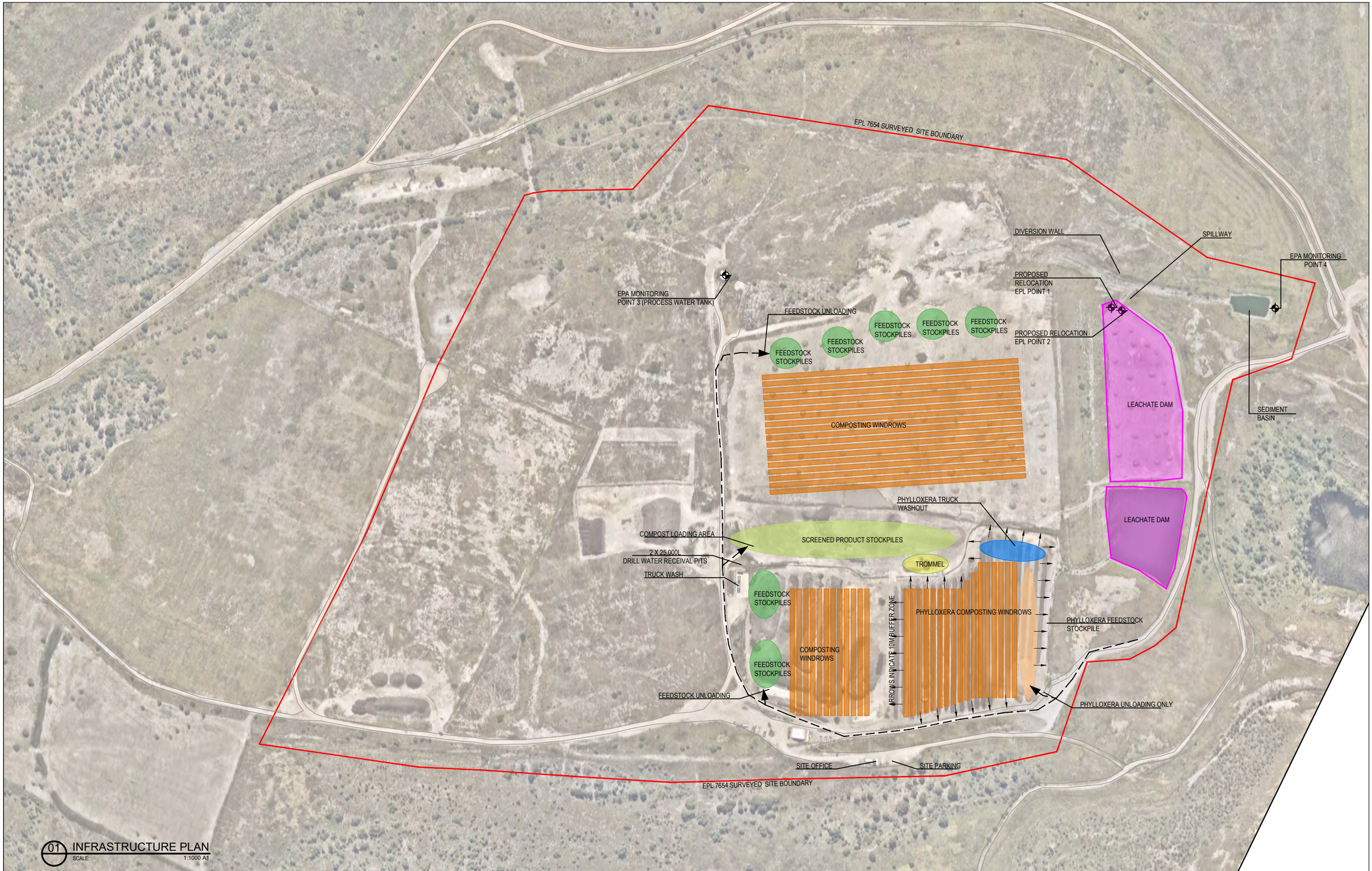
New South Wales Environment Protection Authority (2023). *Environment Protection Licence Number 7654*. 23 May 2023. NSW EPA.

New South Wales Department of Planning, Industry and Environment (2022). Development Consent, Application Number DDF-9418, *Ravensworth Composting Facility Expansion, 74 Lemington Road, Ravensworth, NSW 2330, Expansion of an existing resource recovery facility to process up to 200,000 tonnes per annum of organic material, including water drainage and leachate works, hardstand areas and associated infrastructure.* August 2022. NSW DPIE.

RPS Group (2019). Environment Impact Statement (EIS) – *200,000tpa Nutrient Recycling Facility – Ravensworth NSW SSD 9418*, 141357, V3, 14 November 2019.

Zambelli Environmental (2016b). *Composting Management Plan*.

Appendix A: Site Plan



01 INFRASTRUCTURE PLAN
SCALE: 1:1000 A1

NOTES:

TOTAL LEASE AREA: 630,000m²

ISSUE	DESCRIPTION	DATE	DRAWN	AUTH
I	SSD 9418	22-05-2025	DC	VB/JB
H	SSD 9418	29-07-2024	DC	VB/JB
G	SSD 9418	09-05-2023	DC	VB/JB
F	SSD 9418	28-03-2023	DC	VB/JB
E	RROJE SSC TRIAL	18-10-2022	DC	VB/JB
D	PLASTERBOARD TRIAL	10-03-2022	DC	VB/JB
C	STREET SWEEPING TRIAL	12-08-2021	DC	VB/JB
B	STREET SWEEPING TRIAL	19-07-2021	DC	VB/JB
A	FOR REVIEW	20-05-2021	DC	MD/JB

74 LEMINGTON ROAD RAVENSWORTH NSW 2330
P: 1300 105 500
WWW.BETTERGROW.COM.AU

CROSSMULLER CONSTRUCTION
OFFICE:
2 WELLA WAY SOMERSBY, N.S.W. 2250 AUSTRALIA
Tel: 02 4340 9800 Fax: 02 4340 8293

PROJECT: BETTERGROW COMPOSTING FACILITY

DRAWING: INFRASTRUCTURE PLAN

LOCATION: PART OF LOT 10 DP1204457 RAVENSWORTH

SCALE: 1:1000 @ A1 or 1:2000 @ A3

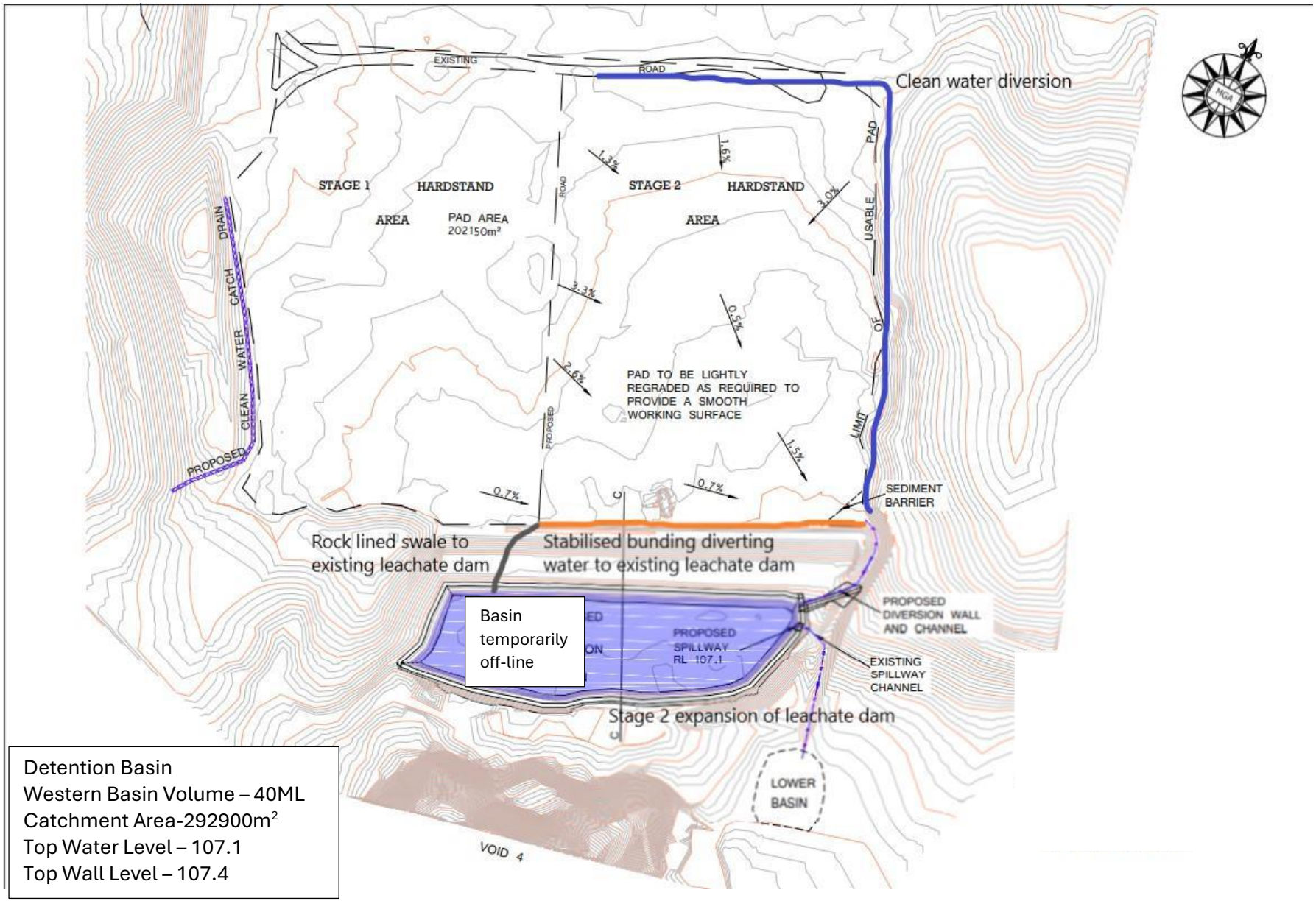
STAGE: DA

PROJECT NUMBER: 007326-01T

DRAWING NUMBER: 0011

ISSUE: I

Appendix B: Erosion and Sediment Control Plan



Detention Basin
Western Basin Volume – 40ML
Catchment Area-292900m^2
Top Water Level – 107.1
Top Wall Level – 107.4

Appendix C: Forms

Form 1: Daily Running Sheet

Form 2: Stormwater Performance Form

Form 3: Daily Weather Conditions Form

Form 4: Emergency Release Notification Form

Form 5: Erosion and Sediment Control Checklist

Form 1. Daily Running Sheet

Initials	Date and Time	Description of daily events Include extraordinary events such as noncompliance or emergencies. This should link with information contained in other forms

Form 2. Stormwater Performance

Initials	Date and Time	Amount of Rainfall (mm)	Performance of internal drains Any cracks or blockages evident?	Performance of basins at collecting and containing stormwater	Performance of hardstand pad Any ponding or pooling evident?	Any erosion (including bund and basin walls and spill way)?

Form 3. Daily Weather Conditions

Initials	Date and Time	Description of Weather Note: Incorporate any changes throughout the working day and include previous night time conditions.

Form 4. Emergency Release Notification Form

Note: In the event of an uncontrolled release the EPA must be called on 131555 and advised by telephone of the basic information regarding this release. The information on this form must be completed as soon as possible following such a release. All details must be completed and the form faxed/emailed to EPA to the number advised when reporting by telephone.

Item	Description
Date and time of the uncontrolled release:	
Is the uncontrolled release presenting any immediate safety risk to others of the receiving environment? YES / NO **Action(s) taken:**	
Approximate volume of the uncontrolled release or area affected: (Litres/m^2)	
Suspected cause of the uncontrolled release:	
Location of the uncontrolled release: **(Location description)**	
Have any samples been collected? YES / NO **Collect a sample in a sample container or take a photograph of the release. Ensure sample is marked with the date, time and name of the person taking sample. Ensure sample is handed to the Site Manager.**	
Have any actions been taken to minimise/mitigate the environmental effects of the uncontrolled release incident?	
Has this action been successful? Provide details **NOT AT ALL / SOMEWHAT / PREVENTED FURTHER RELEASE(S)**	
Name and contact phone number of the Site Manager responsible: **(Mobile and Landline)**	

Form 5. Erosion and Sediment Control Checklist

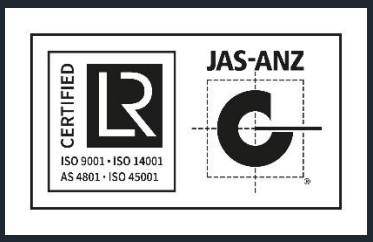
#	Item	Finding
EROSION CONTROL		
1	Temporary access roads/tracks identified, with appropriate drainage/erosion controls specified.	
2	The erosion control standard is consistent with the rainfall erosivity, environmental risk, and clay content of exposed soil.	
3	The erosion control standard is consistent with the requirements of regulatory authority.	
4	Specified stabilisation measures are appropriate for the soil slope (gradient).	
5	Appropriate drainage controls installed to minimise mulch being washed off the slope/site.	
SEDIMENT CONTROL		
6	Stockpile locations clearly identified and located away from protected vegetation and overland flow paths.	
7	Stockpiles located at least 5m away from top of watercourse banks.	
8	Location of all sediment control measures clearly shown on ESCP.	
9	Sediment Traps are appropriately sized and designed.	
10	All Sediment Basins have: • Stable inflow conditions. • Inlet baffle (if required). • Minimum 3:1 length to width, otherwise baffles installed. • Suitable access for de-silting and maintenance. • Stabilised emergency spillway and energy dissipater. • Stabilised batters/embankments. • Safety or exclusion fencing (as required). • Operating conditions and water quality standards specified.	
11	ESC specialist review of basin selection & design	

#	Item	Finding
DRAINAGE CONTROL		
12	Adequate up-slope drainage controls (if necessary) and down-slope sediment controls placed adjacent to stockpiles.	
13	Temporary Watercourse Crossings identified and protected.	
14	Temporary drainage controls designed to the appropriate standard and hydraulic analysis provided.	
15	Hydraulic analysis indicates appropriate flow velocities.	
16	Hydraulic analysis indicates appropriate flow capacity.	
17	Flow from “clean” external catchments diverted around/through site in a non-erosive manner.	
18	Internal “dirty” water drainage lines identified and directed to sediment controls.	
19	All site drainage inflow and outflow points identified.	
20	All water discharges from the site at legal points of discharge.	
21	All water discharges through stabilised outlets onto stable land.	
22	Maximum spacing of drains on long, open soil slopes is appropriate for the gradient and soil type.	
23	Appropriate flow velocity controls (e.g. Check Dams) or scour controls (e.g. turf or Erosion Control Mats) specified.	
24	Catch Drains or Flow Diversion Banks located at top of cut and fill batters.	
25	Rock Check Dams not specified in shallow (i.e. < 500mm deep) drains.	
26	Water flow is appropriately conveyed down constructed earth slopes (e.g. through Slope Drains or Chutes).	
27	All Slope Drains and Chutes have stabilised inlets and outlets.	

#	Item	Finding
28	Appropriate drainage controls on unsealed roads and access tracks.	
29	Overland flow appropriately controlled around Temporary Watercourse Crossings.	
SITE REHABILITATION		
30	Areas of progressive rehabilitation identified in ESCP	
31	Rehabilitation measures have been implemented in accordance with the design specification.	

Senversa Pty Ltd

ABN 89 132 231 380
www.senversa.com.au
enquiries@senversa.com.au
LinkedIn: Senversa
Facebook: Senversa



Appendix D
Traffic Management Plan

David Pavey Pty Ltd trading as
Pavey Consulting Services
Specialising in
Traffic Impact Assessments and Transportation Planning
Road Safety, Traffic Management Plans and Traffic Control Plans
Civil and Structural Design
Project Management and Contract Administration
Mediation and Government Relations

Operational Traffic Management Plan

Bettergrow Composting Facility at Ravensworth

25 July 2024

Rev 3

Prepared By

David Pavey

B.E (Civil) Grad Dip LGE. LGE Cert. MAIPM, MAICD, MAITPM

Authorised SafeWork NSW - Prepare a Work Zone Plans - No TCT1017730

Approved Department Planning and Environment Consultant for Preparation of Traffic Management Plan

Rev No.	Revision Date	Author / Position	Details
3	25/07/2024	J Blomberg Borg Environmental Manager	Review as per SSD-9418 condition C8(b) No changes required

Table of Contents

1.0 INTRODUCTION

Pavey Consulting Services has been commissioned to prepare an Operational Traffic Management Plan (OTMP) for Bettergrow Pty Limited for the Ravensworth Site in accordance with the following Development Consent Condition B22 and B24.

Condition B22. Prior to the commencement of operation, the Applicant must prepare an Operational Traffic Management Plan (OTMP) for the development to the satisfaction of the Planning Secretary. The OTMP must form part of the OEMP required by Condition C5 and must:

(a) be prepared by a suitably qualified and experienced person(s);

(b) detail the measures that are to be implemented to ensure road safety and network efficiency;

(c) detail heavy vehicle routes, access, and parking arrangements;

(d) include a stockpile management plan to describe how waste and product stockpiles will be managed to avoid encroaching onto the haulage route and allow the safe loading and unloading of heavy vehicles;

(e) include an Operational Driver Code of Conduct to:

(i) minimise the impacts on the local and regional road network;

(ii) minimise conflicts with other road users;

(iii) minimise road traffic noise;

(iv) inform truck drivers of the site access arrangements and use of specified haul routes; and

(v) include a program to monitor the effectiveness of these measures.

Condition B24. The Applicant must ensure:

(a) there is an appropriate area designated for parking;

(b) the swept path of the longest vehicle entering and exiting the site, as well as maneuverability through the site, is in accordance with the relevant AUSTROADS guidelines;

(c) the development does not result in any vehicles queuing on the public road network;

(d) heavy vehicles and bins associated with the development are not parked on local roads or footpaths in the vicinity of the site;

(e) all vehicles are wholly contained on site before being required to stop;

(f) all loading and unloading of materials is carried out on-site;

(g) all trucks entering or leaving the site with loads have their loads covered and do not track dirt onto the public road network; and

(h) the proposed turning areas in the car park are kept clear of any obstacles, including parked cars, at all times

2.0 SUITABILITY OF AUTHOR

As required by the Condition of Consent, this Traffic Management Plan has been prepared by David Pavey who has been endorsed by the Secretary Department of Planning and Environment suitably qualified and experienced person.

The author also holds the appropriate Safe Work NSW Certificate No: TCT1017730 - Prepare a Work Zone Plans.

3.0 LIMITS OF REPORT

This report takes into account the particular instructions and requirements of our client. Pavey Consulting Services has taken care in the preparation of this report, however it neither accepts liability nor responsibility whatsoever in respect of:

- Any use of this report by any third party,
- Any third party whose interests may be affected by any decision made regarding the contents of this report, and/or
- Any conclusion drawn resulting from omission or lack of full disclosure by the client, or the clients' consultants.

4.0 REFERENCES

- Work Health & Safety Act and Regulations (NSW) 2011
- Work Health & Safety (National Uniform Legislation) Act 2011
- Work Health & Safety (National Uniform Legislation) Regulations 2011
- Safe Work Australia: Construction Work - Code of Practice (2013)
- Safe Work Australia: General Guide for Workplace Traffic Management (2014)
- Safe Work Australia: Traffic Management: Guide for Construction Work (2014)

5.0 WAYS TO CONTROL TRAFFIC RISKS

Keeping people and vehicles apart

The best way to protect pedestrians is to make sure people and vehicles cannot interact. Where powered mobile plant is used at a workplace, you must ensure it does not collide with pedestrians or other powered mobile plant.

This can be achieved by not allowing vehicles in pedestrian spaces or not allowing pedestrians in vehicle operating areas, for example using overhead walkways.

However, this may not be reasonably practicable in all workplaces. If people and vehicles cannot be separated, you should consider using:

- barriers or guardrails at building entrances and exits to stop pedestrians walking in front of vehicles,
- high impact traffic control barriers,
- temporary physical barriers, or
- separate, clearly marked footpaths or walkways e.g., using lines painted on the ground or different coloured surfacing.

Vehicle routes

Vehicle routes at the workplace should have a firm and even surface, be wide and high enough for the largest vehicle using them and be well maintained and free from obstructions. They should be clearly sign-posted to indicate speed limits, traffic calming measures like speed humps and parking areas.

Reducing speed is very important where administrative control measures are the only reasonably practicable approach. Speed limits should be implemented and enforced and traffic

calming devices like speed humps considered.

Pedestrian crossings

Pedestrian crossings should be clearly marked with ground markings, lights or signs. If the vehicle route to be crossed is a road or railway consider control measures that will work with those already established by the relevant authority, for example a local council or rail authority.

Both pedestrians and vehicles should have good visibility, for example pallet goods should not be stored in a way that would obscure vision.

Procedures indicating who has right of way at crossings should also be established.

Parking areas

Parking may be needed for workers, visitors, trucks and other vehicles used in the workplace. Consider setting out the workplace so parking areas:

- are located away from busy work areas and traffic routes,
- have walkways leading to and from parking areas which are separated from vehicles or vehicle routes e.g. use physical controls like barriers or bollards to prevent vehicles from crossing into walking areas, and
- are clearly marked and sign-posted, well-lit and unobstructed.

Reversing vehicles

If reasonably practicable eliminate the need for reversing by using drive-through loading and unloading systems, multi-directional mobile plant or rotating cabins.

It should be noted that all vehicles will enter and leave the property in a forward direction.

Where the elimination of onsite reversing is not possible (i.e. at dedicated unloading areas) the following action should be considered:

- using devices like reversing sensors, reversing cameras, mirrors, rotating lights or audible reversing alarms,
- using a person to direct the reversing vehicle if they cannot see clearly behind—this person should be in visible contact with the driver at all times and wear high-visibility clothing,
- If visual contact cannot be maintained for the entire duration of reversing action than two-way mobile communication should be implemented,
- providing designated clearly marked, signposted and well-lit reversing areas, and
- excluding non-essential workers from the area, and
- On occasions when vehicles cannot manoeuvre in a forward direction and need to reverse, then traffic marshals / controllers shall be in place to guide such operations.

Loading and unloading vehicles

It is important to make sure visitors including visiting drivers are aware of the workplace layout, the route they should take and safe working procedures for the workplace. Provide drivers with safe access to amenities away from loading areas or other vehicular traffic.

Provide effective ways to warn of loading in progress to other plant operators, drivers and pedestrians.

Warning devices can include signage, cones, lights, alarms and horns.

When a delivery vehicle arrives at site, they will call up either the Site Supervisor or Loader Operator on UHF channel 15 and receive direction where to tip their load. The internal haul road is delineated with flagging and soil bund to the exterior of the processing/delivery pad (see **Appendix C** Stockpile Management Plan).

Signs and road markings

Clear road markings like reflective paint and signs should be used to alert pedestrians and vehicle operators to traffic hazards in the workplace.

Signs should be provided to indicate exclusion and safety zones, parking areas, speed limits, vehicle crossings and hazards like blind corners, steep gradients and where forklifts are in use.

Lighting

Traffic routes, maneuvering areas and yards should be well lit with particular attention given to junctions, buildings, walkways and vehicles routes. Where possible they should be designed to avoid extreme light variation, for example drivers moving from bright into dull light or vice versa.

6.0 SITE LOCATION

The site is located at Ravensworth No. 2 mine and is formally described as Lot 10 DP1204457 at 74 Lemington Road, Ravensworth, NSW. The Project area covers approximately 57 hectares (ha) and is located approximately 20 km north-west of Singleton, 23 km south-east of Muswellbrook, 14 km east north-east of Jerry's Plans, and 2 km north-west of Ravensworth. Access to the facility is provided via an internal access road off Lemington Road which connects to the New England Highway 2 km south of Ravensworth village.

The site comprises lands located on part of a capped open cut mining void which has been filled with ash from the Bayswater Power Station. The development footprint, including the existing approved composting facility, is located on a graded hardstand area, surrounded by perimeter bunding. A detention basin and spillway are located towards the southern end of the facility. A diversion wall and channel direct stormwater runoff from the eastern corner of the facility into the spillway. A spillway channel connects the spillway to the lower basin.

Significant disturbance of the natural environment within and surrounding the development site has occurred due to the long history of mining and power generating activities in the area. The Project area is clear of any remnant or native vegetation due to past land activities. The Hunter River is located 6 km to the south of the site, while Bowmans Creek is located 1.6 km to the east.

The site location is shown in **Figure 1**.

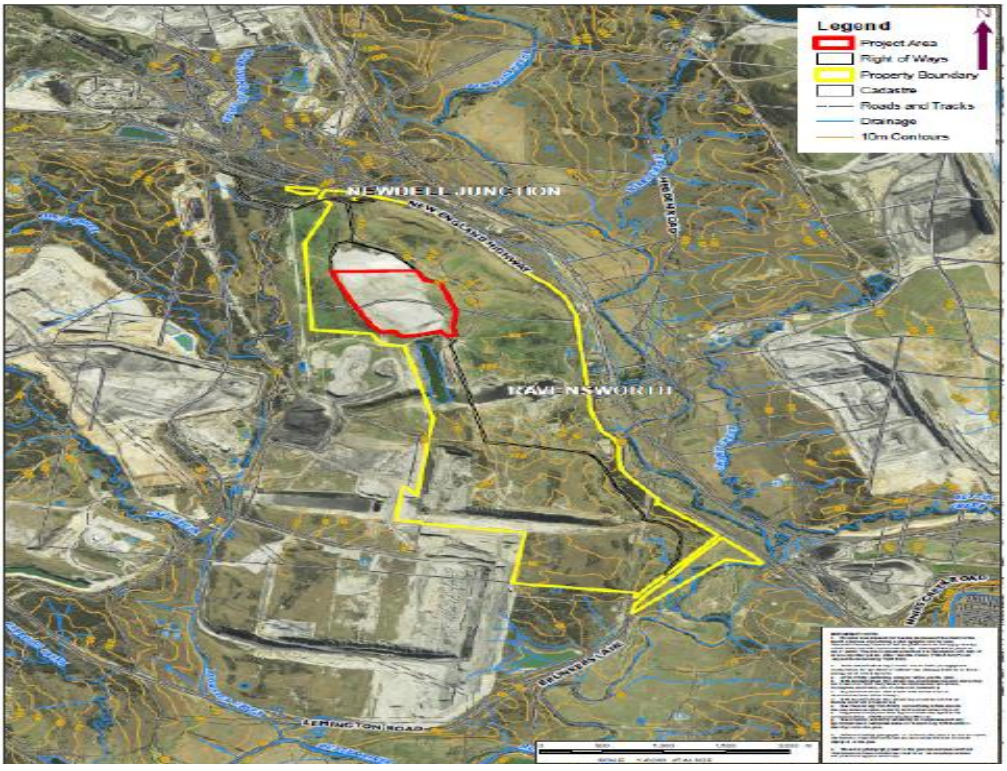


Figure 1 Site Location

7.0 TRAFFIC MANAGEMENT PLAN

Introduction

The purpose of this document is to minimise the impacts of the heavy vehicle traffic on the adjacent public roads the surrounding properties and on the community and to manage the movement of heavy vehicles (both heavy and light) within the site using best industry practice.

Objectives

The objectives of this Traffic Management Plan and Driver Code of Conduct are to:

a) Ensure compliance with the conditions,
b) Encourage compliance and acceptance of the Truck Driver Code of Conduct by all heavy vehicle drivers,
c) Minimise the heavy vehicle impacts on the community,
d) Foster an understanding and awareness within the company of community expectations and legislative requirements in regard to heavy vehicle movements,
e) Protect and enhance public safety through compliance with relevant road rules, and
f) Increase OH&S understanding in relation to fatigue, vehicle operation in public areas and obligation to the general public.

Project Description

The approved project is an expansion of an existing resource recovery facility to process up to 200,000 tonnes per annum of organic material including following materials for composting:

- Urban wood residues for Composting,
- Paper Crumble,
- Wastewater from Bayswater mine Void 4,
- Drill mud process water,
- Natural organic fibrous Composting material,
- Biosolids,
- Garden Waste,
- Animal Waste, and
- Materials subject to a general or site-specific resource recovery order and exemption as issued by the EPA from time to time.

Site infrastructure includes:

- load inspection bay.
- processing pad,
- Surface water drainage,
- Leachate dam,
- Site access and parking,
- Site office and staff amenities,
- 300,000 litre water storage,
- Machinery shelter, and
- Trailer wash.

Delivery hours

Delivery hours for deliveries to site are;

- Monday to Friday 6:30am to 5:00pm
- Saturday, Sunday and Public Holidays no deliveries are permitted.

Traffic Generation

The projected outgoing traffic volumes below assume all finished compost will leave the site via Lemington Road, hence these figures are regarded as worst-case scenario.

Based on the increased annual production amount of 200,000 tpa, the following traffic volumes

are anticipated:

- 4 x light vehicles
- Up to 146 vehicle movements per day

On the basis that all deliveries and compost transfers will require in-bound and out-bound movements, the worst-case traffic movements generated from the increased operations would be up to 146 movements per day (73 in-bound and 73 out).

Site Access and Internal Operations

Access Arrangements

Access to the site is controlled by Bettergrow staff.

All heavy vehicles are to report to Site Supervisor or Loader Operator (using two-way radio, UHF channel 15, or other phone number provided from time to time) as soon as they enter the internal haul road (off Lemington Rd) and again prior to entering the processing area. The haul road and processing area are delineated by flagging and an earthen bund. **Appendix C** Stockpile Management Plan shows the haul road and delineation. The Site Supervisor or Loader Operator will direct the driver to the appropriate location on the processing pad to deliver the load. **Appendix A** provides indicative locations of stockpiles on site though note that these can be easily relocated as necessary to ensure no encroachment of material onto the haul road and also allow for the safe loading and unloading of heavy vehicles.

The site speed limit from the site access point is 15km per hr and 10 km/h within the processing area and this will be enforced.

The internal haul road can accommodate incoming and outgoing heavy vehicle movement, the road surface is an all-weather access, and surface water drainage has been installed to divert stormwater away from the roadway onto suitably stable areas.

Pedestrian Access

Unless accompanied by Bettergrow staff there is no pedestrian access allowed on the internal haul road or on the processing pad.

Personal Protective Equipment (PPE) must be worn by all persons when on-site.

Passenger Vehicles

All passenger vehicles (that are not staff worktime on the site) are to report to Site Supervisor using two-way radio, UHF channel 15, or other phone number provided from time to time) as soon as they enter the internal haul road (off Lemington Rd).

Passenger vehicles will park in the parking area adjacent to the site amenities as shown in **Appendix A.**

Signage has been erected to direct all visitors to report to office prior to moving around the site.

Heavy Vehicles

Traffic movements for a range of heavy vehicles has been examined by preparing several swept path plans, which have been overlaid on the site.

This sweep analysis (see **Appendix B**) indicates that all heavy vehicles proposed to service the facility are capable of manoeuvring within the site in a safe and efficient manner without any unreasonable encroachment on internal passenger vehicle parking areas or structures. Accordingly, the internal heavy vehicle maneuvering arrangements are satisfactory**.**

Note that although **Appendix B** sweep path indicates vehicles moving over stockpiles, this will not be the case as stockpile locations are indicative as this is a fluid site and stockpiles can easily be relocated to ensure they do not encroach into the truck turning areas.

There are significant storage / waiting areas for heavy vehicles on site to ensure vehicles waiting for instruction do not obstruct the moment of other vehicles.

Minimising Vehicle Movements

Traffic movement around the workplace should be minimised as much as possible. This will be achieved where practicable by:

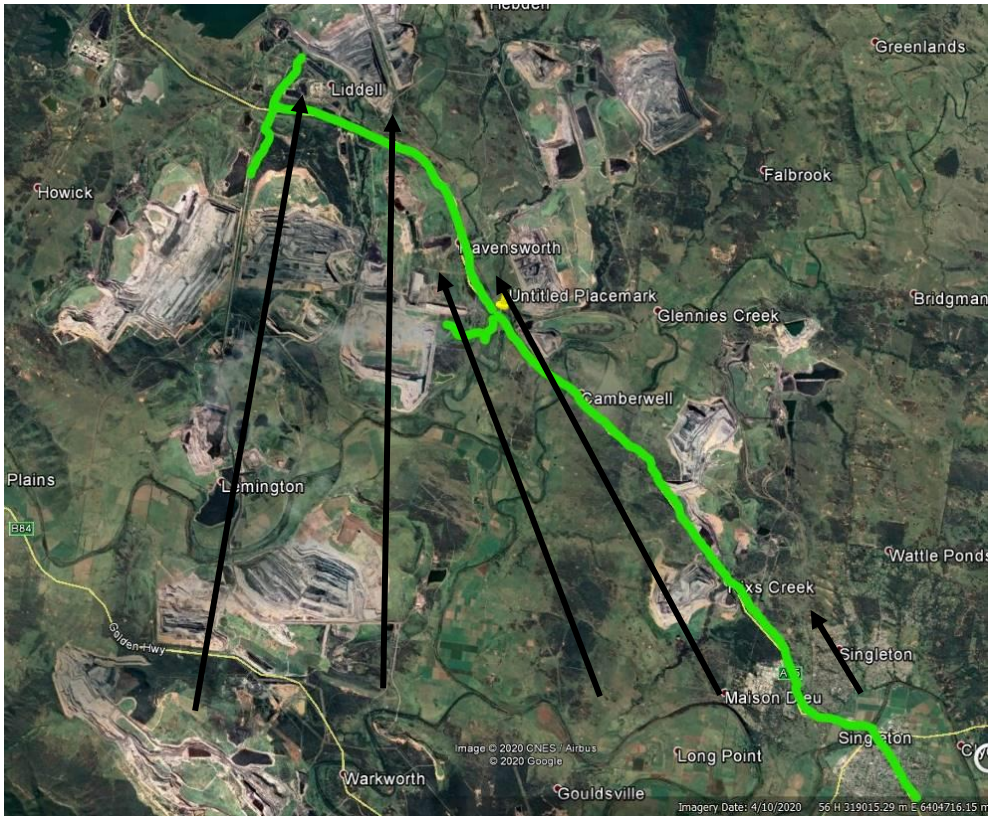
- Controlling entry/exit to the work area by planning or engineering processes (e.g., gates, signage, speed control),
- Developing storage areas so delivery vehicles do not have to cross the site,
- Scheduling work processes to minimise the number of vehicles operating at the same time, and
- Scheduling work processes to minimise the number of vehicles operating while people are moving through an area (e.g. start and finish of shifts).

Haul Roads

The principal haul roads in the vicinity of the site are New England Highway and a short section of Lemington road. All deliveries of incoming product are sourced local from adjacent power stations and mines of from further afield in Newcastle, Central Coast and Sydney utilising the State Road Network including Pacific Motorway, Hunter Expressway and New England Highway.

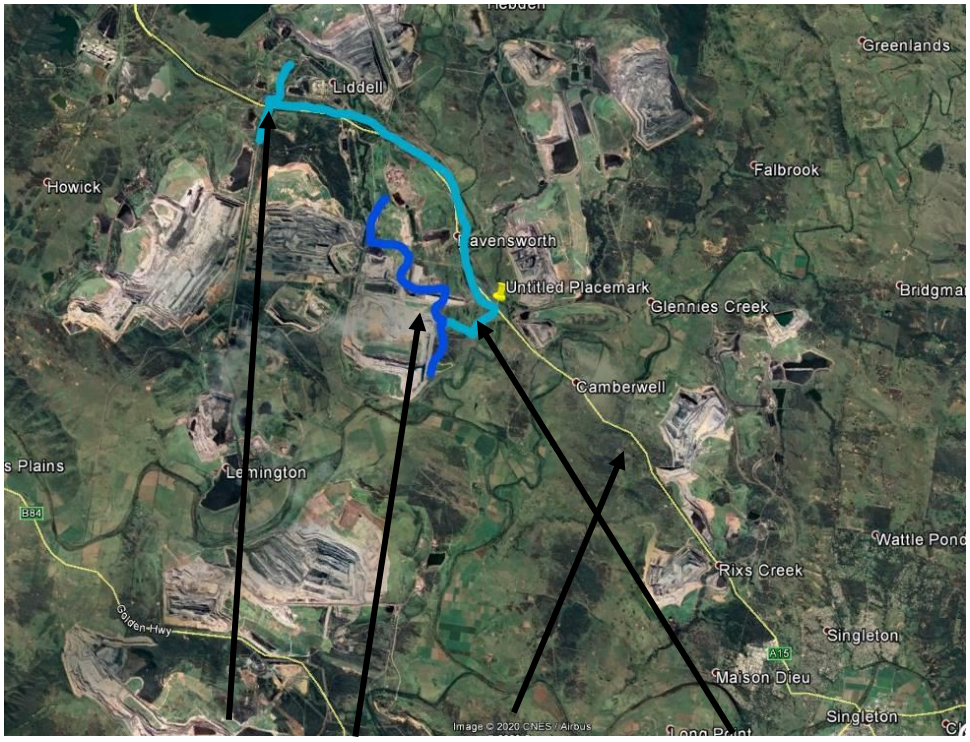
No vehicle movements are anticipated to travel south along Lemington Road to the Golden Highway due to lack of end-users in this direction and the narrowness of the road particular at Moses Crossing (one lane causeway over the Hunter River).

The main haulage routes are diagrammatically shown in **Figure , 2, 3** and **4** (below).



PowerStation & mines New England Hwy Site Lemington Rd Singleton

Figure 2 Principal Incoming Haul Routes



power stations Site New England Hwy Lemington Rd

Figure 3 Principal Outgoing Haul Routes North

New England HWY Site Lemington Rd Singleton

Figure 4 Principal Outgoing Haul Route South

Monitoring of Product Transport

Raw materials entering the site will still be weighed prior to being delivered. This will occur at their location of loading, either by loader scales or a weighbridge. No loads will be accepted at the site without a weighbridge docket. In the event this does occur, the truck driver will be instructed to leave site and attend a public weighbridge then return with the weigh docket.

Drivers with incoming material loads will be required to supply the following details on their weighbridge docket:

- Weight quantity
- Waste type
- Waste stream
- Date
- Vehicle registration number
- Driver signature
- Name and address of where the material is transported from (i.e., the supplier) and the code or number of any environment protection license number(s) for that site, if applicable.

Similarly, before finished compost leaves the facility, it will be weighed by scales fitted to front end loaders used onsite or by truck scales. All weighbridge/weigh dockets will be maintained and recorded by the Bettergrow Administrations Officer.

Outgoing dockets will have the following detail:

- Weight quantity
- Waste type
- Waste stream
- Date
- Vehicle registration number
- Driver signature
- Name and address of where the material is transported to and the code or number of any environment protection license number(s) for that site, if applicable

Road And Traffic Noise

Compression braking by heavy vehicles is a source of irritation to the community generating many complaints especially at night when residents are especially sensitive to noise.

Compression braking should be avoided as much as possible.

A noise complaints handling procedure is detailed in OEMP and this shall be followed if any issues relating to road and traffic noise are raised with the site manager.

8.0 DRIVER CODE OF CONDUCT

A driver code of conduct has been developed for the site and is included in **Appendix D**.

This document includes:

Heavy vehicle drivers

- Have undertaken a site induction carried out by an approved member of staff,
- Hold a valid driver's licence for the class of vehicle that they operate,
- Operate the vehicle in a safe manner within and external to the site, and
- Comply with the direction of authorised site personnel when within the site.

Heavy Vehicle Speed

Heavy vehicle drivers need to comply with:

- signposted speed limits on haul routes,
- internally within the site, and
- Drivers and truck operators are to be aware of the "Three Strikes Scheme" introduced by the Roads and Maritime Services which applies to all vehicles over 4.5 tonnes. When a heavy vehicle is detected travelling at 15 km/h or more over the posted or relevant heavy vehicle speed limit by a mobile Police unit or fixed speed camera, the Roads and Maritime Services will record a strike against that vehicle. If three strikes are recorded within a three-year period, the Transport for NSW will act to suspend the registration of that vehicle (up to three months).

Heavy Vehicles Driver Fatigue

Fatigue is one of the biggest causes of accidents for heavy vehicle drivers. The Heavy Vehicle Driver Fatigue Reform was therefore developed by the National Transport Commission (NTC) and approved by Ministers from all States and Territories in February 2007.

The heavy vehicle driver fatigue law commenced in NSW on 28 September 2008 and applies to trucks and truck combinations over 12 tonne GVM.

Heavy Vehicle Compression Braking

Compression braking by heavy vehicles is a source of irritation to the community generating many complaints especially at night when residents are especially sensitive to noise.

In some instances, compression braking is required for safety reasons however when passing through or adjacent to residential areas or isolated farmsteads a reduction in the speed of the vehicle is recommended to reduce the instances and severity of compression braking.

Load Covering

Loose material on the road surface has the potential to cause road crashes and vehicle damage.

All trucks arriving at or departing the site whether loaded with material or not are required to have an effective cover over their load for the duration of the trip.

All care is to be taken to ensure that all loose debris from the vehicle body and wheels is removed prior to leaving the site.

Drivers must ensure that following tipping that the tailgate is locked before leaving the site.

Drivers (of heavy vehicles) are required to use truck wash and inspect their vehicle prior to leaving the site.

9.0 COMPLIANCE MONITORING

Commencement of Traffic Management Plan & Driver Code of Conduct

It is proposed that this Traffic Management Plan will be initiated when the project becomes operational and reviewed after 12 months of operation.

The Driver Code of Conduct is to be signed by individual drivers and authorised representative of Bettergrow at the time when drivers attend their site induction or shortly thereafter.

Monitoring Measures

A formal observation of compliance against the OTMP will occur annually or in response to an incident, non-compliance or complaints.

The results of traffic monitoring will be stored on the online project management system *DataStation*, with results and recommendations passed onto the Operations Manager and Environmental Manager.

Results and actions of traffic monitoring will be documented for use in the annual Compliance Report (prepared in accordance with Compliance Reporting Post Approval Requirements [Department 2020]) and to update Management Plan(s) when required.

10.0 INTERNAL VEHICLE MOVEMENTS

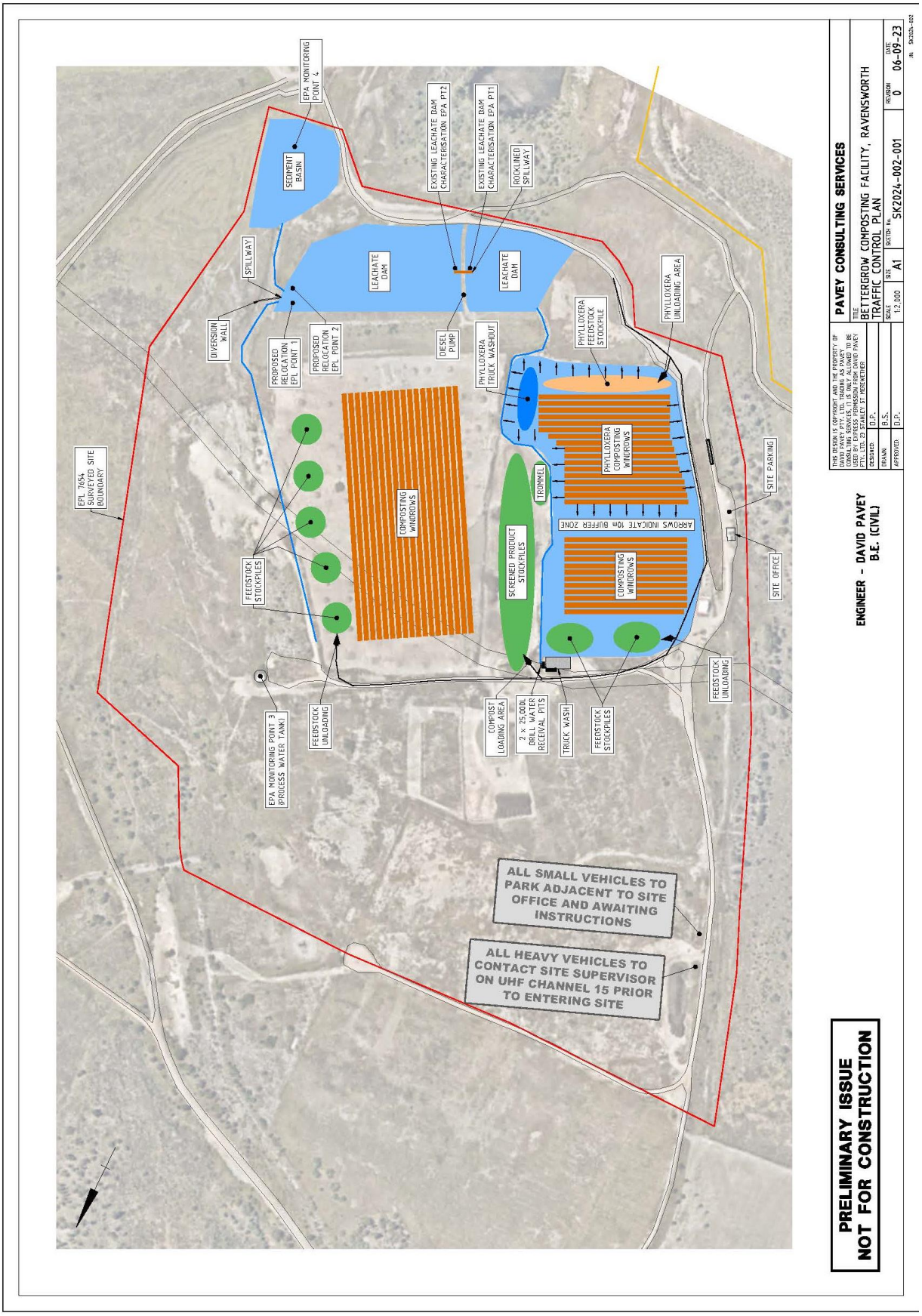
As per condition B24 a review of the site and final layout (**see Appendix A**) confirms:

- There is an appropriate area designated for parking for both heavy and light vehicles. With respect to heavy vehicles, it is anticipated that no more than 3 vehicles will be on site at any one time.
- With regards to the sweep path of the longest vehicle regularly entering, exiting and maneuvering on the site, in accordance with – “Austroads Design Vehicles and Turning

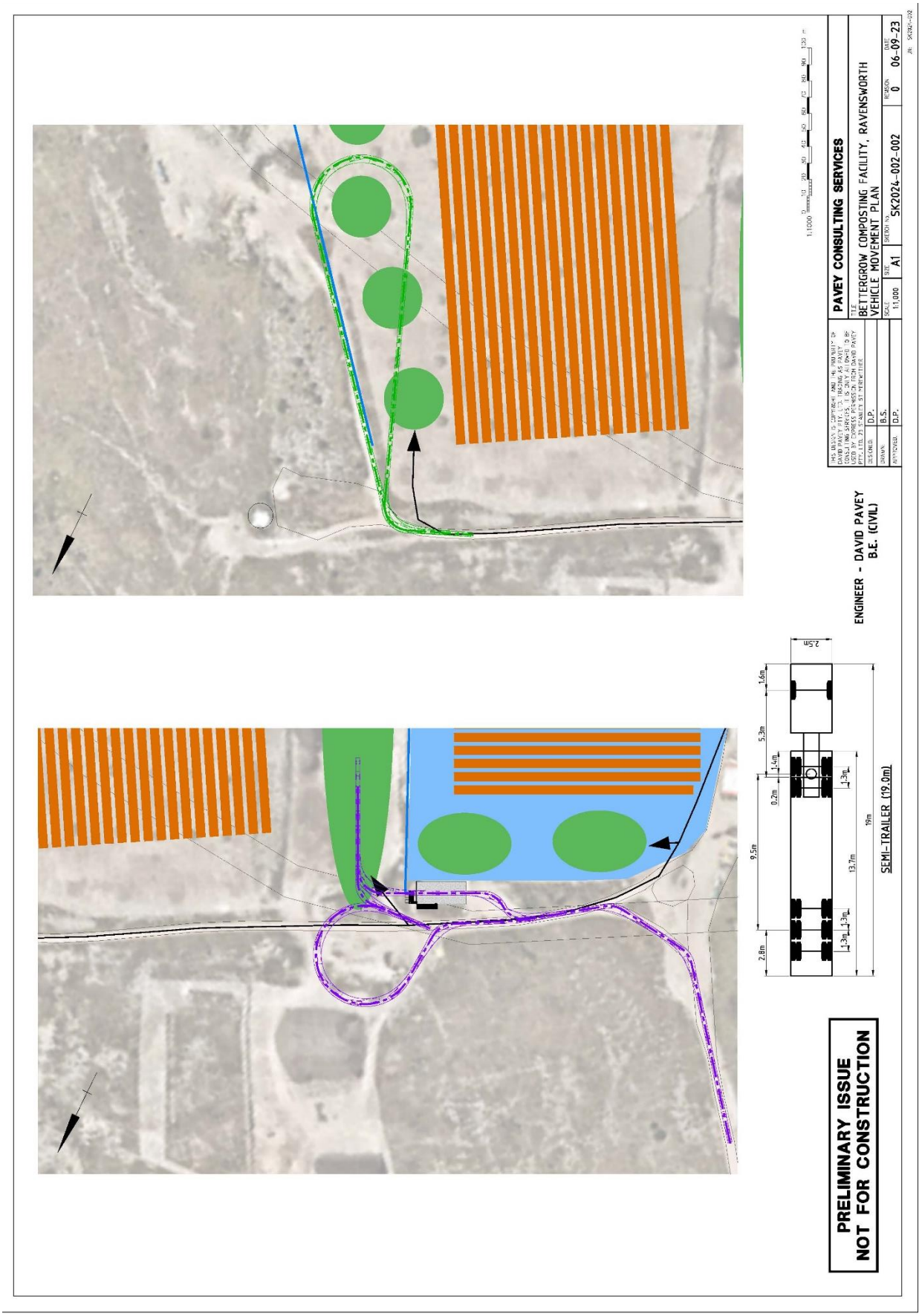
Path Templates Guide 2023" Table 2.1: PBS Road classification with Prescriptive Vehicles the appropriate PBS road classification is level 1 (vehicle less than 20 m) and therefore the equivalent prescriptive vehicle is a 19 m Prime mover and semi-trailer.

- The sweep path of this vehicle has been analysis and can maneuver to and through the site in accordance with the current AUSTROADS guidelines. Complying sweep paths are provided in **Appendix B.**
- As there is no gate at the entrance off Lemington Rd and all vehicles will travel a considerable distance prior to stopping and / or awaiting instructions, there is sufficient room for the above mentioned 3 vehicles to wait without queuing on the public road network.
- Consequently, all vehicles are wholly contained on site before being required to stop.
- All loading and unloading of materials are carried out on-site and dictated by either the Site Supervisor or Loader Operator.

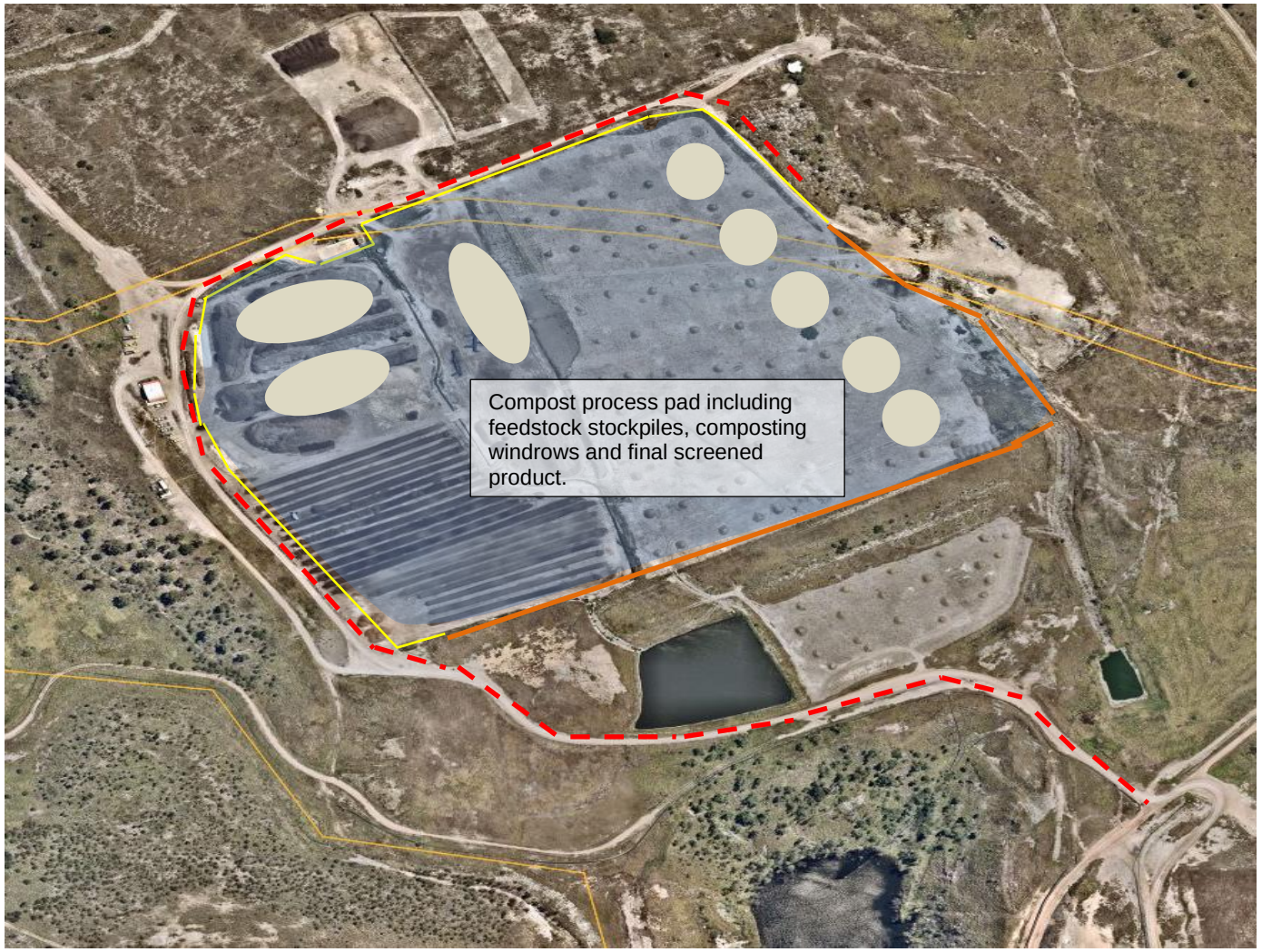
11.0 Appendix A Site Layout and Traffic Control Plan



12.0 Appendix B Sweep Path Analysis



13.0 Appendix C Stockpile Management Plan



Source: NearMaps February 2023

NOTES	
	Internal haul road, material deliveries and pick-ups
	Soil bund and flagging installed along edge of internal haul road and processing pad highlighting edges of process pad ensuring separation and prevention of material leaving the work area onto the haul roads.
	Earthn bund only, no flagging required as no haul/vehicle movement along this boundary
	Indiciative feedstock and screened material stockpiles

14.0 Appendix D Driver Code of Conduct

Bettergrow Pty Ltd Drivers Code of Conduct

This document sets out the requirements for all employees and contractors to Bettergrow Pty Ltd Ravensworth compost facility site.

DECLARATION

I, the undersigned, hereby agree to abide by Bettergrow's Driver Code of Conduct for the transportation of materials to/ from the site known as 74 Lemington Road, Ravensworth in a safe and responsible manner.

I have read and understand the requirements outlined in the Code and will, to the best of my ability, comply and assist with their implementation, requirements and ongoing administration.

Truck Driver

Full Name: _____

Organisation: _____

Signature: _____

Date: _____

General Requirements

This Driver Code of Conduct will be distributed to all employees and sub-contractors with fleet accessing the site prior to their commencement of works. The Code will be provided to each driver to read and sign to confirm they have understood and pledge to follow the haulage instructions. Once completed, a copy of the signed Code will be supplied by the employee or sub- contractor to Bettergrow for record keeping.

Heavy vehicle drivers hauling to and from the subject site must:

- Have read and signed this Driver Code of Conduct prior to entry to the site;
- Hold a valid driver's license for the class of vehicle that is being operated;
- Have completed the AGL Site Induction (refer to Bettergrow Ravensworth Site Coordinator for assistance);
- Operate the vehicle in a safe and responsible manner while on site and public road network;
- Comply with the direction of authorised site personnel when onsite;
- All drivers are to use seat belts when driving; and
- All drivers are to drive to the sign posted speed limit, both on public roads and within the site.

Site Access

All access to the Bettergrow site is via the dedicated AGL mine site accesses road, South Access Road off Lemington Road.

Heavy Vehicle Haul Routes

All heavy vehicle drivers must adhere to the designated truck routes to/from the site as follows:

- Approach routes:
    - From Muswellbrook – from the west, travel on New England HWY, turn right onto Lemington Road before taking the first right, turning onto South Access Road (AGL mine site access road)
    - From Singleton – from the east, travel on New England HWY, turn left onto Lemington Road before taking the first right, turning onto South Assess Road
- Departure routes:
    - To Muswellbrook – from South Access Road (AGL mine site access road) turn left onto Lemington Road then left onto New England HWY
    - To Singleton – from South Access Road turn left onto Lemington Road then right onto New England HWY

Heavy Vehicle Speed

Truck drivers must comply with the Australian Road Rules (National Transport Commission) while travelling along public roads. Drivers are to observe the posted speed limits and adjust speed appropriately to suit the road and weather conditions at the time.

Speed limits on route (public roads) to the site from vary between 40km/hr (school zones) up to 100km/hr. The maximum speed that a vehicle must travel is the signposted speed. Warning signs indicating a reduction in speed ahead must also be obeyed. These signs are shown below.

NSW Road Speed Limit Signs

Speed Reduction Ahead Warning Sign

The maximum speed limit along South Access Road is 40km/hr and 20km/hr on bends however, drivers are instructed to reduce speed and drive to the site and weather conditions where appropriate.

On the Bettergrow site itself, the haul road speed limit is 10km/hr at all times.

Other Heavy Vehicles Conditions

All heavy vehicles **must** be fitted with a two-way radio and turn onto **UHF 15** prior to proceeding along South Access Road. It is preferable that heavy vehicles are fitted with flashing warning light however this is not mandatory.

All heavy vehicles must maintain positive communications between other truck drivers when traversing through the AGL mine site access road and use the road call signs as displayed along the haul road.

All vehicles transporting potential phylloxera host plant material, that is any green waste out of the Sydney Basin, must also have a copy of the **Emergency Procedure – Spill Management for Truck Drivers.** Ask for a copy of the Procedure from either the Bettergrow Administration Officer, Site Coordinator or Operations Manager.

Heavy Vehicles Driver Fatigue

The heavy vehicle driver fatigues law commenced in NSW in 2008 and applies to trucks and truck combinations over 12 tonnes GVM (however, Ministerial Exemption Notices may apply).

Under the law, industry has the choice of operating under three fatigue management schemes, namely:

1. Standard Hours of Operation

2. Basic Fatigue Management (BFM)
3. Advanced Fatigue management (AFM)

All heavy vehicle drivers associated with works at the subject site must be aware of their adopted fatigue management scheme and operate within its requirements.

Heavy Vehicle Compression Braking

Compression braking is not permitted within the vicinity of the Muswellbrook or Singleton townships. Compression braking through rural areas of the haul route should only be used when required and for safety reasons.

Heavy Vehicle Noise

Permitted times for deliveries to or from the site are as follows:

- Monday to Friday - 6:30am – 5:00pm
- Saturday, Sunday and public holidays – no deliveries permitted

Load Covering

All loaded trucks arriving at and departing from the site are required to have an effective cover over their load for the duration of the journey. The load cover may be removed only upon arrival at the destination (i.e. at the site).

Care must be taken to ensure that all loose debris from vehicles and wheels is removed prior to exiting the site by brushing off material and using the site truck wash. If transporting material from inside the Sydney Basin area (potential phylloxera/plant host material) the driver will be instructed to use the dedicated truck wash on the hardstand pad in the phylloxera sign posted area. **DO NOT USE** the truck wash on the concrete hardstand area, this is for all non-host plant (phylloxera) transport trucks.

Site management is to monitor loose material on the side of the haul route and take appropriate action regularly.

Debris from the truck undercarriage and wheels shall not be permitted onto public road. Debris found on any sealed roadways within the site vicinity shall be reported to site for immediate cleanup.

Other Safety Considerations Along the Haul Route

Heavy vehicle drivers should be aware of the following:

- Wet weather safety – drivers should adjust their driving speed to suit weather condition at the time.
- Wild life on country roads – drivers should stay alert to kangaroos, wombats and stray stock on haul routes.

Appendix E
Site Emergency Plan

SITE EMERGENCY PLAN

For

RAVENSWORTH

74 Lemington Road

Ravensworth, NSW, 2330

Operating Hours:

Day Shift	Monday to Friday	6.30am – 3.00pm

CONTENTS

1. PURPOSE

The purpose of this Emergency Plan is to address aspects of real or potential emergencies to prevent loss of life and minimise the occurrence of injury, damage to property or significant disruptions to operations. This Emergency Plan will provide a structure:

- For prompt alerting and appropriate response to emergencies.
- To control the effect of an emergency on the site and the surrounding neighbourhood.
- Serve as the basis for training and maintaining a high level of preparedness for all relevant personnel who might be involved in a site emergency.
- To ensure that all vital information is communicated to relevant persons and external agencies as soon as possible.
- To facilitate the reorganisation or recovery of operations so that normal operations can resume.
- To provide a basis for the revision of emergency procedures.

2. SCOPE

This Site Emergency Plan applies to the Ravensworth site at 74 Lemington Road, Ravensworth NSW 2330.

3. DEFINITIONS

TERM	DESCRIPTION
Emergency	An event that arises internally or externally that adversely affects the occupants of visitors to a facility, and which requires immediate response.
Emergency Assembly Area	The designated assembly place (or places) where people are required to gather during the course of an evacuation.
Emergency Control Organisation (ECO)	A person or persons appointed by the Emergency Planning Committee to direct and control the implementation of the facility's emergency response procedures.
Emergency Mitigation	Measures taken to reduce the likelihood of an emergency occurring and the impacts on people, facilities and the environment.
Emergency Preparedness	The arrangements made to ensure that, should an emergency occur, all those resources and services that are needed to cope with the event are available.
Emergency Prevention	The measures taken to eliminate the incidence of emergencies. These include regulatory, physical and administrative measures such as policies, procedures and maintenance etc.
Emergency Response Exercise	A site specific exercise carried out to determine the effectiveness of the emergency response procedures.
Evacuation	The orderly movement of people from a place of danger.
Facility	A building, structure or workplace that may be occupied by people.
May	Indicates the existence of an option.
Personal Emergency Evacuation Plan (PEEP)	An individualised emergency plan designed for a person with a disability who may need assistance in an emergency.
Shall	Where used, indicates that a statement is mandatory.
Should	Where used indicates that a statement is a recommendation.

4. EMERGENCY PLANNING COMMITTEE (EPC)

4.1 EPC MEMBERS

The Emergency Planning Committee (EPC) is responsible for the development, implementation and maintenance of the emergency plan, emergency response procedures and related training.

The Emergency Planning Committee (EPC) for the site consists of:

NAME	POSITION
Todd Wurth	Site Manager
Martin Harvey	WHS Coordinator

The duties of the Emergency Planning Committee include:

- Identifying events that could reasonably produce an emergency.
- Developing an emergency plan in accordance with the Australian Standards.
- Ensuring that resources (including time, finance, equipment, training and personnel) are provided to enable the development and implementation of the emergency plan.
- Nominating the validity period for the emergency plan and the evacuation diagram.
- Ensuring that the emergency plan is readily identifiable and available to the appropriate persons. The Emergency Plan is available on SharePoint and printed copies are located on safety noticeboards.
- Establishing an emergency control organisation to operate in accordance with the emergency plan.
- Authorising the release and implementation of the emergency plan.
- The development and implementation of a training programme to ensure relevant personnel receive adequate training.
- Establishing arrangements to ensure the continuing operation of the ECO (for example, dealing with resignations, holidays, and unplanned leave).
- Ensuring that the register of the Emergency Control Organisation members is current, readily available on SharePoint and printed copies are located on safety noticeboards.
- Establishing strategies to ensure visitors are made aware of emergency response procedures.
- Ensuring that the emergency response procedures remain viable and effective by reviewing and testing the emergency response procedures at least annually.
- Ensuring that the emergency plan is reviewed at the end of the validity period, after an emergency, an exercise, or any changes that may affect the emergency plan.
- Ensuring that a permanent record of events for each emergency is compiled and retained.
- Identifying and rectifying deficiencies and opportunities for improvement in the emergency plan and emergency response procedures.

4.2 EPC MEETINGS

The EPC shall meet at least annually. A record of each EPC meeting shall be uploaded to DataStation as an “Emergency Planning Committee” document and a copy is to be saved electronically.

5. EMERGENCY CONTROL ORGANISATION (ECO)

During emergencies, the ECO will assume responsibility for the site and their instructions will take precedence over the normal management structure. The persons who fill the positions on the ECO will be indemnified against civil liability for negligent acts or omissions while carrying out their duties.

The Ravensworth site has approximately 6 persons working across day shift.

5.1 ECO MEMBER RESPONSIBILITIES

The ECO shall ensure that during an emergency event the preservation of life takes precedent over asset protection, environmental considerations, production operations and business continuity. The responsibilities of the ECO are detailed below. Members of the ECO can be found on the Company WHS Notice Boards.

5.1.1 Emergency Controller

The responsibilities of the Emergency Controller are to:

- Obtain and assess information about the incident.
- Ascertain the nature of the emergency and determine the appropriate action.
- Nominate an area to be used as the emergency control point.
- Notify the appropriate Emergency Services if not yet notified.
- Establish and maintain communication with relevant parties (Company Directors, AGL, neighbours etc.).
- If necessary, initiate evacuation and control entry to the affected area/s.
- Ensure vehicles do not block the entry to the site and restrict entry to the site when an emergency is in place.
- Determine relevant control action to be taken until the arrival of the emergency services.
- Brief emergency services personnel upon arrival on type, scope and location of the emergency and the status of the evacuation.
- Keep a log of all activities during the emergency
- Collect emergency warden's attendance checklist to establish who is not present and determine 'last seen' location of missing person/s.
- Inform Emergency Services of missing persons and last known sighting.
- Ensure that there is no interference with the evidence and that any cleaning up, repairs etc. apart from that necessary to bring the emergency under control, does not occur without approval of investigating officers (i.e. SafeWork NSW Inspectors).
- Advise staff when it is safe to re-enter site.
- Organise a debrief with Emergency personnel and Emergency Services.
- Compile a report for the EPC.

5.1.2 First Aid Coordinator

The responsibilities of the First Aid Coordinator are to:

- Set up a first aid treatment centre on establishment of a full evacuation.
- Assess all injuries and prioritise treatment based on the assessment.
- Indicate to the Emergency Controller the need for the Ambulance Services.
- Record the name, type of injury and the treatment given for all persons treated.
- Use other qualified first aid officers for support in the treatment of injured persons.
- Cooperate with the emergency services upon arrival.

5.1.3 Area Warden

The responsibilities of an Area Warden are to:

- Ensure that all workers, visitors and contractors in their area have been alerted during an emergency.
- Communicate with the Evacuation Coordinator and act on instructions.
- Evacuate the workplace, act as a leader of groups and proceed to the emergency assembly area
- While evacuating the area, check their area of responsibility to determine whether all persons are evacuated.
- Check to ensure all doors are properly closed.
- Ensure orderly flow of persons into protected areas.
- Assist persons with disabilities or injuries.

- Complete evacuation checklist and hand it to the Emergency controller when completed. Notify them of any missing persons.
- Advise the Evacuation Coordinator as soon as possible of the circumstances and action taken.
- Make notes of the actions taken during the incident for the debriefing.
- When notified the workplace is deemed safe or Emergency Services return control, notify department to return to their workstation.

NOTE: The primary duty of area wardens, should an evacuation be called, is not to combat the emergency but to ensure the safety of persons in their area and an orderly and timely evacuation from the danger zone.

Warden Instruction Points are located on the Emergency Evacuation checklist relevant to that area warden. It includes:

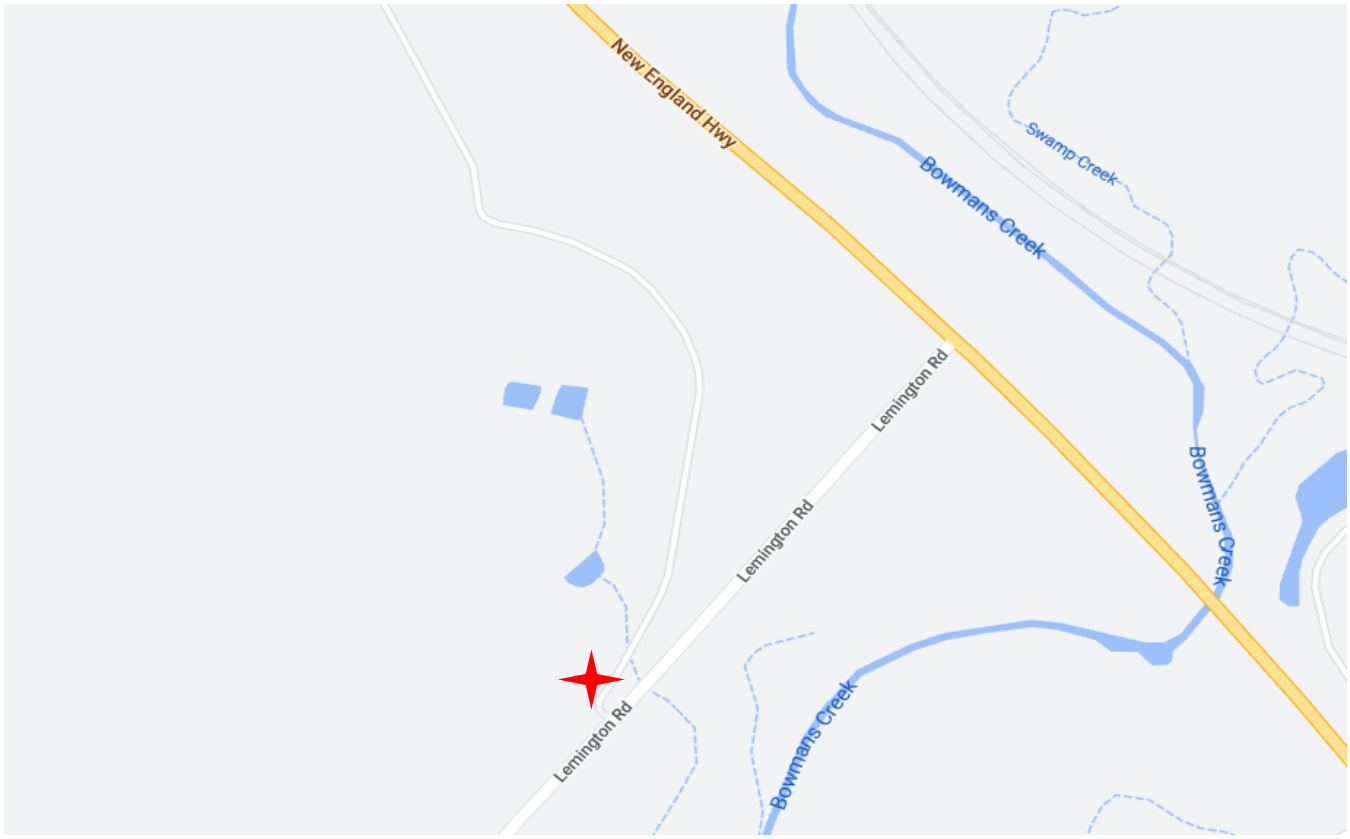
- The steps they are to complete during an emergency
- What areas they are to check including a map of the area, and
- A check sheet which they are to take to the Emergency Assembly area and complete

6. SITE DETAILS

6.1 FACILITY INFORMATION

Address:	74 Lemington Road, Ravensworth NSW 2330
Operating Hours:	7.00am – 3.00pm.
Site Facility Manager:	Todd Wurth
Contact:	0467 019 670
Emergency Controller Organisation :	Refer to ECO Poster on Safety notice boards
Contents of building:	Office equipment and lunchroom
Dangerous Goods:	Hazardous/Dangerous substances stored in shipping container at the maintenance shed Diesel fuel cell located near maintenance shed
Other substances:	As above
Fire Fighting Equipment:	Fire extinguishers and hoses, First aid kit,
Emergency Assembly Area:	Located out the front of the office
First Aid Kit:	In the office and in mobile plant
First Aid Officer:	Refer to First Aid poster on Safety notice boards

6.2 LOCATION MAP



6.3 EVACUATION DIAGRAM

7. EVACUATION PROCEDURE

OCCUPANTS	ECO (EMERGENCY CONTROLLER)
An evacuation will be triggered upon the following: • The Emergency Controller or Warden instructs you to evacuate. • The alarm is activated. **On being made aware of the emergency, occupants shall:** • Alert others if they have not been made aware of the incident. • If operating a forklift or plant, turn it off and leave it in a safe state. • If responsible for a person with a disability assist them. • Do not gather personal items unless it is safe to do so. • Exit the building via the closest safe exit. Avoid walking through the building or other areas where hazards are present. • Make your way to the emergency assembly area in an orderly fashion. • Wait for the warden to account for you, this may be done with an existing checklist or the warden may simply write down your name. • Do not leave the emergency assembly area until authorised to do so by the ECO or Emergency Services. • No smoking whilst at the emergency assembly point. • Comply with any directions given by Emergency Services or the ECO. • Only re-enter the site when approval has been given by the ECO.	**On being made aware of the emergency, the ECO shall:** • Ascertain the nature of the emergency and assess it. Determine if an evacuation is necessary; if so, they shall determine if a full evacuation is required or if a partial evacuation is sufficient. • Notify the appropriate Emergency Service. • Notify AGL and neighbours, if applicable. • Check all areas you are responsible for and ensure all occupants have evacuated. This may mean checking toilets, office and mobile plant etc. • Assist where required any persons with a disability. Ensure PEEPs are followed. • Monitor the progress of the evacuation. • Look out for any abnormal situations. • Ensure persons are not able to enter the site from driveways, side or rear entrances. • Upon arriving at the emergency assembly point check all occupants are accounted for. If visitors are on site, then ensure they are included in the count; grabbing the sign on register upon exiting will assist in determining who is on site. If all occupants are not accounted for their names are to be noted and given to Emergency Services. • Itemise all relevant details in an emergency log. • Brief Emergency Services upon their arrival. • Provide assistance to the Emergency Services as required. • Resume control of site when handed back over by Emergency Services. • Instruct occupants when they can return to premises.

7.1 COMMUNICATIONS

The Site emergency communications equipment and methods will consist of:

- Mobile phone
- UHF channel 15
- Air horn

7.2 RAISING THE ALARM

In circumstances where there is no imminent threat to life such as the appearance of light smoke or a minor spill contact the Emergency Controller and advise of the following:

- Where emergency is located
- When it happened
- Whether the problem is likely to spread.
- Follow the instructions of the Emergency Controller.

8. TYPES OF EMERGENCIES

8.1 FIRE AND SMOKE

In the event of a fire:

- Notify site manager/Emergency controller who will assess the fire and if there is the need will determine the appropriate action.
- Life Safety – Ensure the immediate safety of people in the area and relocate all people to a safe location if required.
- Use the appropriate portable firefighting equipment to attack the fire providing it is safe to do so, if not safe to do so, proceed to a safe place and await instructions.
- Do not enter smoke filled areas/rooms.
- Do not attack the fire alone. Maintain a backup. Maintain an additional supply of firefighting equipment.
- Keep upwind of the fire at all times to avoid breathing the smoke.
- Maintain an escape route at all times.
- Avoid contact with contaminated firewater.
- Do not over-estimate your fire-fighting capabilities.
- When the fire is out, watch that it does not flare up again.

The below firefighting equipment is available on site to assist in attacking fires. Please refer to the site emergency flipcharts for an explanation on the use of such equipment.

CARBON DIOXIDE (CO2)	ABE POWDER (DRY CHEMICAL)	FIRE BLANKET	FIRE HOSE REEL
			
Paint, Oil, Electrical and other liquid fires.	Paper, Wood, Textiles, Oil, Liquid and Electrical fires.	Paper, Wood, Textiles, Oil, Peoples clothes, plastic, rubber.	Paper, Textiles, Wood, most Plastics and Rubber. **NOT to be used on electrical fires!**

8.2 BOMB THREAT

Although unlikely, should a suspect package arrive on site or should a bomb threat be made by mail or over the phone this must be reported to the Emergency Controller immediately who will contact the police.

Most bomb threats are made over the phone so if receiving a call of this nature the person taking the call should attempt to remain calm and gather as much information as possible. To assist in this task there is a Bomb Threat Check List located in the site emergency flipcharts and on The Company SharePoint.

On completion of the phone call, the operator who took the call is to go to a meeting room, being left undisturbed, to document as many details as possible in relation to the threat to pass on to emergency services.

In the event of a suspicious package, do not touch it. Remove persons from area and report to the Emergency Controller.

8.3 EXPLOSION

In the event of an explosion the ECO will carry out an immediate evacuation of the entire site. Should the emergency assembly area not be deemed safe the Emergency Controller shall direct all staff to the entrance of the site.

8.4 PERSONAL THREAT

If a person acts in a threatening manner:

- Try to remain calm.
- Alert someone nearby.
- Be assertive, but polite.
- Attempt to de-escalate the situation.
- Contact your manager.

If there is an armed intruder on site:

- Try to remain calm.
- Cooperate with the intruder/s.
- Turn your body to remain in a non-dominant position and raise your hand where the intruder can see them.
- Observe as much as possible, but do not stare or make eye contact.
- Contact your manager when it is safe to do so.

8.5 MEDICAL EMERGENCY

If someone is seriously injured or if the person is non-responsive then the person finding them shall ring 000 and ask for an ambulance, a first aider must remain with the injured individual until the ambulance arrives. If the person is responsive, contact a first aid officer and request treatment, following this contact your manager and the WHS Manager. If an ambulance has been called, another person should be sent to man the gate to assist the ambulance personnel in locating the injured/sick person.

8.6 HIGH WINDS AND STORM

During periods of high wind ensure all materials that may be blown over or away are secured outside or brought inside the building. Where there is potential for The Company vehicles to be damaged, they may be parked inside if there is space and it is safe to do so.

- Do not attempt any control action or clean-up until the high winds have subsided.
- Persons are to stay indoors, keeping clear of windows, until the winds subside.
- In the event of electrical storms, stay indoors until the storm subsides.
- When it is safe to do so, inspect the site for damage and apply the appropriate control procedures.

8.7 SPILL

In the event of a chemical spill, site personnel should attempt to prevent the substance entering drains or waterways by containing it on site and cleaning it up with the spill control materials located on site.

Persons carrying out the containment and clean up shall follow the flow chart that appears on the next page. To ensure the safety of those involved, workers shall:

- Wear all required personal protective equipment (PPE) before exposure to the substance.
- For small spills use rags or paper towel to mop up spill.
- For larger spills use a spill boom or the absorbent materials provided on site to prevent the liquid entering drains. (This is done by forming a temporary barrier with the absorbent material).

- Once the liquid has been contained, use more absorbent material to mop up and place in plastic bags for disposal. Refer to the SDS for correct disposal method.

Spill response equipment is available on site to assist in controlling spills. Please refer to the site emergency flipcharts for an explanation on the use of such equipment.

9. FIRST AID

9.1 FIRST AIDERS

There are trained First Aid Officers at the Ravensworth site- refer to the WHS Notice Board for a list of First Aiders.

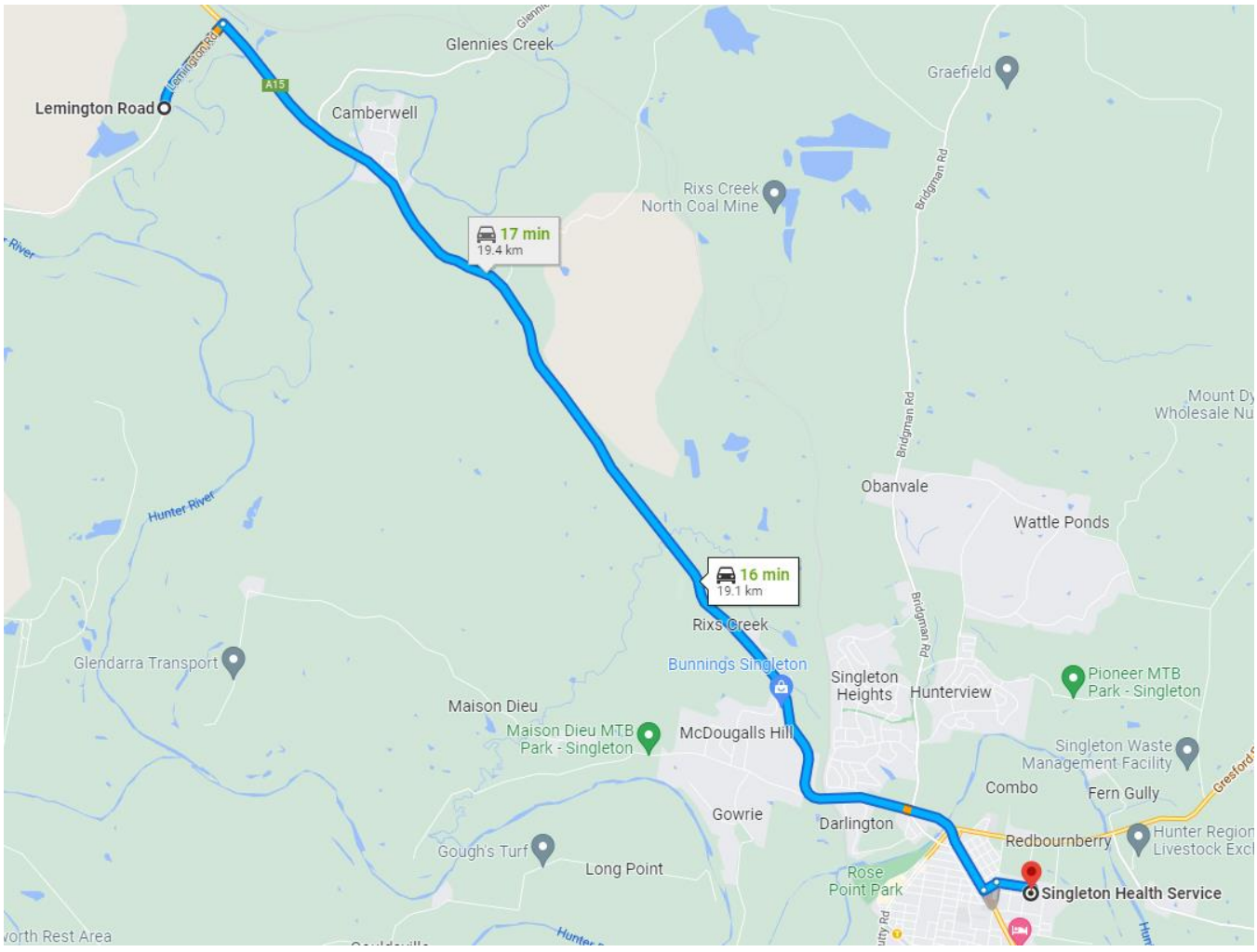
9.2 FIRST AID KITS

Refer to the Site Evacuation diagram or Emergency Procedures Flipchart for locations of Fist Aid Kits

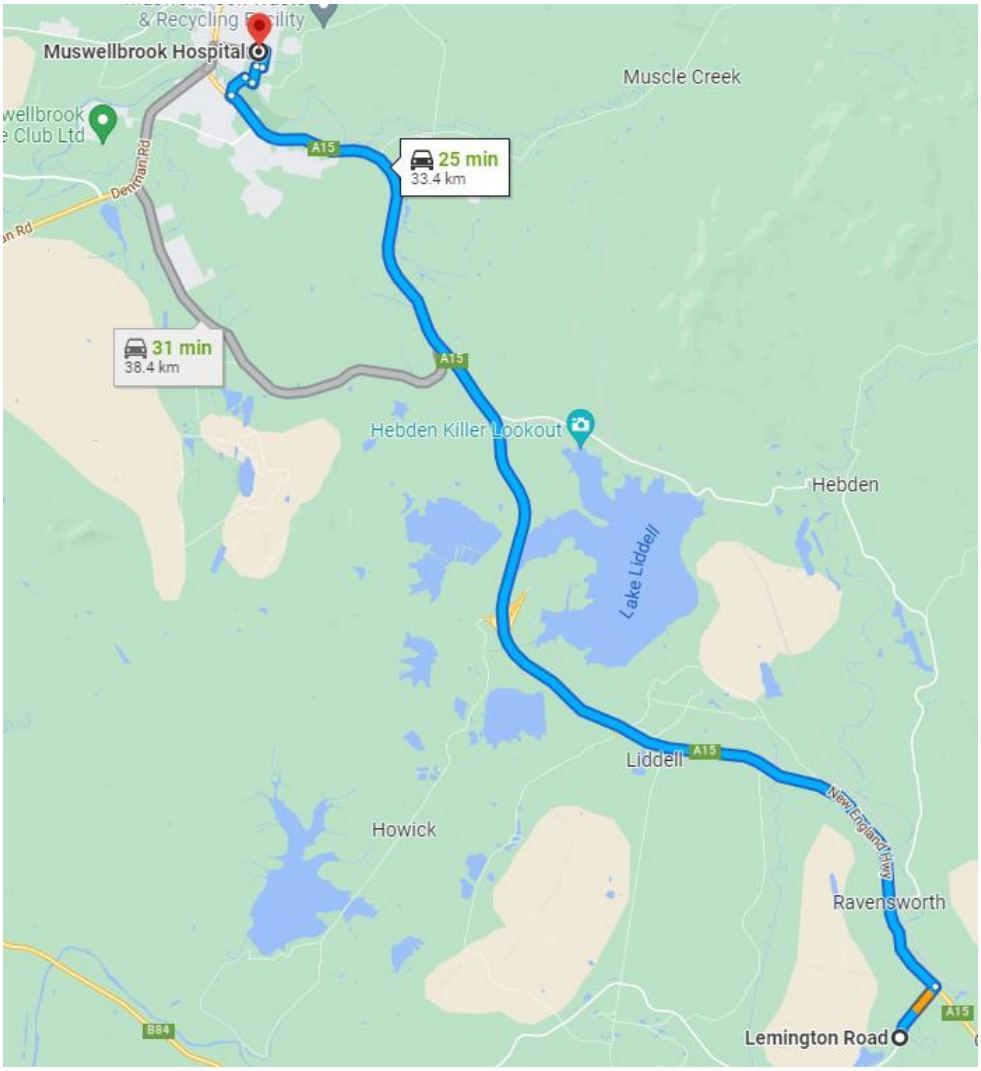
9.3 MEDICAL CENTRE AND HOSPITAL

Singleton Health Services
Telephone: 02 6571 9222
Dangar road, Singleton NSW 2330

Open Hours
24 Hours / 7 days a week



Muswellbrook Hospital
Telephone: 02 6542 2000
Brentwood Street,
Muswellbrook, NSW 2560



10. TRAINING

10.1 EPC TRAINING

Training shall be completed by at least one member of the EPC to enable the EPC to completely execute their obligations. Training should include but not limited to the following:

- Developing, managing and maintaining an emergency plan.
- Duties of the EPC and ECO.
- Site specific emergency identification and analysis.
- Establishing an ECO.
- Document management.

10.2 ECO TRAINING

All workplace participants will receive induction training on his or her first day of employment. Induction training includes information relating to the types of activities carried out on site including, the hazards associated with each activity and the procedures to be followed during an emergency.

Annual safety training sessions are delivered to improve employee awareness on various procedures. These sessions include evacuation drills, use of fire fighting and safety equipment and training in prevention and handling of spills, fire and other types of emergencies.

10.3 OCCUPANTS AND VISITORS

All occupants working at the site must be accompanied by a Company Host or receive training in order for them to act in accordance with the emergency response procedures contained in this plan. This will include but not be limited to the following subject matter:

- Occupant responsibilities
- Types of emergencies
- How to report emergencies and activate alarm.
- Evacuation procedures
- Responsibilities of the ECO
- Location of emergency assembly areas.

11. EMERGENCY RESPONSE EXERCISES

A program of emergency response exercises shall be developed for this site consisting of initial testing of the plan and then at least one evacuation exercise each year after.

11.1 EXERCISES

The site shall carry out an emergency response exercise each year, or more frequently should circumstances require it, such as changes in the emergency response equipment. The objective being to have all occupants participate in at least one emergency response exercise every 12 months that is consistent with the nature of the facility and the type of emergency that could occur there. The exercises may vary and involve specific scenarios such as a missing occupant in order to provide realism to the training.

11.2 ECO BRIEFING AND DEBRIEFING

It is advisable that prior to each exercise that the ECO meet to discuss the execution of the exercise including the scenario type and location, alarms used and evacuation routes used as well as what to do should customers arrive and how to divert calls etc. It may be deemed appropriate that a staff member is exempted from the exercise in order to accommodate incoming calls.

Following the exercise, the Emergency Controller will conduct a debriefing for the ECO and other key personnel. Using the Observer Checklist, the group should identify any deficiencies and discuss methods for improvement. Any corrective actions shall be passed onto the EPC to be actioned and modifications made to the Emergency Plan where required.

11.3 COMMUNICATION AND CONSULTATION

Consultation is a legal requirement and an essential part of managing health and safety risks. When carrying out risk management exercises it is essential, that workers be consulted, and findings reported to the Workers.

It is also pragmatic to communicate with other parties that may be affected by the exercise. The ECO may find it beneficial to contact the neighbor prior to the evacuation exercise so they do not become concerned. Similarly, the ECO may decide upon contacting the local Emergency Services in case a passerby mistakes the exercise for a genuine incident and calls 000.

Although unlikely, there is a possibility that a real emergency could occur during an exercise so the ECO must establish a code word that should be used to communicate a genuine incident. The term “No Duff” is commonly used for this purpose and is widely accepted by military and Emergency Services to mean a genuine event. Should a fire erupt during an evacuation drill the Emergency Controller could communicate “No duff, no duff, no duff - There is a fire in the warehouse”.

12. ADMINISTRATION, NOTIFICATIONS AND INVESTIGATIONS

12.1 COMPANY WHS DEPARTMENT

The annual emergency response exercise forms part of each sites WHS compliance calendar and a copy of the report must be sent into the WHS Department as soon as is practicable after the event as well as to members of the EPC.

Any ECO training must be documented, and copies sent to the WHS Department for inclusion in personal training files and Data Station.

The WHS Department is to be notified in relation to all safety incidents by way of Data Station or other method. All medical injuries must be reported to the Return to Work Coordinator.

12.2 NOTIFIABLE INCIDENTS

The Company is required to immediately notify the regulator of any serious incidents which occur at the workplace, these incidents are referred to as 'notifiable incidents.

A 'notifiable incident' is an incident which:

- Involves the death of a person.
- A serious injury or illness; or
- A 'dangerous incident'.

A dangerous incident includes:

- An uncontrolled escape, spillage or leakage of a substance.
- An uncontrolled implosion, explosion or fire.
- An uncontrolled escape of gas or steam.
- An uncontrolled escape of a pressurised substance.
- Electric shock.

Should an incident occur that meets the requirements of the above definitions, then the Facility Manager or ECO must contact the Company WHS Manager immediately. For further information, refer to the Company Emergency Preparedness Management Procedure or emergency flip chart.

Appendix F
Emergency Response Procedures

Emergency Procedures

BetterGROW

RAVENSWORTH
74 Lemington Road
Ravensworth NSW 2330

safe by choice not by chance

Emergency Controller: Todd Wurth ph: 0467 019 670

If Emergency Controller does not answer, text "**EMER**", and you will be contacted.

Maintenance/Technical Manager: N/A

Supervisor: Todd Wurth
ph: 0467 019 670

Electrical: Group Energy ph: 13 10 33

Gas: AGL

Water/Sewerage: N/A

Emergency Services: 000 / 112 (mobile)

Medical Centre: Singleton Health Service
ph: 6571 922
Dangar Rd, Singleton

Hospital: Muswellbrook Hospital
ph: 6542 2000
Brentwood St, Muswellbrook

Police: Singleton ph: 6578 7499

IMPORTANT CONTACTS

IMPORTANT CONTACTS

Emergency Procedures

BetterGROW

safe by choice not by chance

In the event of a emergency

- During any Emergency, it is important to remember one vital point:

STAY CALM

- Responding calmly in any emergency situation, bet it Fire, Bomb Threat, Accident, etc, could prevent injury or even death.
- Please carefully read and follow the procedures in this booklet.

Remember:

STAY CALM and CAREFULLY READ and FOLLOW the procedures outlined in this booklet.

Emergency Procedures

BetterGROW

safe by choice not by chance

In the event of a medical emergency

- Check for **DANGER** to yourself, bystanders and the casualty.
- Assess casualty response, contact qualified First Aid Officer, they will proceed with the next steps if necessary.
- Dial 000 if an ambulance is required.
- Contact your supervisor or manager and tell them:
    - Your name.
    - Location of incident.
    - Type of incident.
    - Number of casualties.
- Care for person by:
    - **A** Maintaining clear **AIRWAY**.
    - **B** Check **BREATHING**.
    - **C** Check **CIRCULATION**.
    - Implement Emergency Measures as Required.
      (Qualified First Aid Officer to Administer CPR if necessary)
    - Chemical contact
      (Flush with clean cool water for 20 minutes)
- **REMAIN** with person until help arrives.

MEDICAL EMERGENCY

MEDICAL EMERGENCY

Emergency Procedures

BetterGROW

safe by choice not by chance

In the event of an evacuation

- On hearing the evacuation alarm, proceed directly to the emergency assembly area — the emergency assembly area is located at the site office.
The fire warden(s) may also announce that an evacuation is in progress.

- Do not deviate from your path unless there is danger obstructing you (such as fire).

- Do not clock off or go to get your personal belongings in the event of an emergency — instead proceed directly to the evacuation area.

- Gather at the evacuation area where the fire warden(s) will do a head count. Workers should inform the fire wardens of any person who appears to be missing.

EVACUATION PROCEDURE

EVACUATION PROCEDURE

Emergency Procedures

FIRE

BetterGROW

safe by choice not by chance

In the event of a fire (including smouldering or fire in a windrow)

- Alert the Emergency Controller.
  (See page 1 for contact details)

- Assess if fire can be safely contained and extinguished by portable extinguishers. For compost material, access can be safely gained by the water cart.
- Fire extinguishers are located in the site office, the workshop and in all machines/plant.

YES

- Start fire fighting immediately.
- Do not enter smoke-filled areas and avoid breathing smoke.
- Maintain an exit route at all times.
- Do not over estimate your fire fighting ability.
- Select nearest fire extinguisher (if using an extinguisher)
  - **P** Pull the pin.
  - **A** Aim low, point the nozzle at base of fire.
  - **S** Squeeze the trigger.
  - **S** Sweep nozzle from side to side at base of fire.
- Place used fire extinguisher on its side on the ground when finished, (don't hang back on wall) and remember to tell your supervisor it needs refilling.
- If using the watercart make sure there is a safe exit point at all times to retreat if necessary.
- If smouldering or fire in a windrow, douse with water and/or soil to extinguish. Then pull windrow apart to cool down

NO

- Initiate Emergency Evacuation.

FIRE

Emergency Procedures

BetterGROW

safe by choice not by chance

In the event of a spill

- Assess if spill can be contained **SAFELY**

YES

- Isolate the source of the spill if possible
    - Contact your supervisor or manager and tell them the circumstances and location of spill.
    - Wear Personal Protective Equipment (PPE) as indicated in the safety data sheet.
    - If suitable, use items in the spill kit to contain and clean up the spill
    - Do not let the spill enter the site drainage system
    - Where necessary create earthen bunds to contain the spill

NO

- Initiate emergency evacuation.

Emergency Procedures

BetterGROW

safe by choice not by chance

INDUSTRIAL ACCIDENT

In the event of an industrial accident

SERIOUS INCIDENT

- Check for danger first, then if possible and safe to do so, assist the injured.
- Alert your supervisor.
  (They will notify the Facility Manager and WHS Manager)
- Do not disturb the incident scene.
- Barricade the area off using portable barricades/tape and “do not enter” signage.

Do not allow other personnel to stand around looking at or entering area.

- WHS Manager will notify SafeWorkNSW immediately on 131 050.

OTHER INCIDENT

- Alert the Site Supervisor

A serious incident is defined by WorkCover as:

- An injury that results in the amputation of a limb
- The placing of a person on a life-support system
- Any event or circumstance listed below that presents an immediate threat to life:
  - the loss of consciousness of a person caused by impact of physical force, exposure to hazardous substances, electric shock or lack of oxygen
  - major damage to any plant equipment, building or structure
  - an uncontrolled explosion or fire
  - an uncontrolled escape of gas, dangerous goods, or steam
  - imminent risk of explosion or fire
  - imminent risk of an escape of gas, dangerous goods, or steam
  - a spill or incident resulting in exposure or potential exposure of a person to a notifiable or prohibited carcinogenic substance *(as defined in Part 6.3 of the OHS Regulation 2001)*
  - entrapment of a person in a confined space
  - collapse of an excavation
  - entrapment of a person in machinery
  - serious burns to a person

INDUSTRIAL ACCIDENT

Emergency Procedures

BetterGROW

safe by choice not by chance

In the event of a natural disaster

Prior to any disaster

- Be aware of all alternative routes from your work area.
- Internal emergency training will cover this, however always be on the lookout for other means of egress.

If you are indoors

- **STAY THERE**. You could be hit by falling debris outside.
- **TAKE COVER** under table or bench.
- **KEEP AWAY** from windows and overhead fittings.

If you are outdoors

- **KEEP WELL CLEAR** or buildings, walls, power lines, trees etc.
- **SEEK REFUGE** under strong structures or doorways of buildings to avoid falling debris if you are close to buildings. **DO NOT** stand under awnings or covered areas — they may collapse.
- If you are in a **VEHICLE**, try to get in a clear area and stay there until the disturbance is over.
- **BEWARE** of down powerlines. Listen to the announcement system before moving.

If you have time to secure areas prior to storm/earthquake/etc

- **DO NOT** attempt any control action unless it is safe to do so.
- **ISOLATE** equipment. Hit emergency stops for buildings and/or equipment. Turn off water.
- Shut all doors. If heavy rain, use portable bunds to seal the base of doors if required.

Emergency Procedures

BUSH FIRE

BetterGROW

safe by choice not by chance

In the event of a bush fire

Or Falling embers from a distant fire.

If time permits and it is safe to do so

- Clear all combustible materials from around the site (packaging, boxes, etc.) Put these inside the site office and close the door.
- Close bin lids on all rubbish bins/skips.
- Prepare hose reels and assign relevant workers to operate them.
- Watch for flying embers. If they land on site, extinguish immediately.
- If the bush fire approaches site boundary, use fire hoses from reels or water cart cannon to douse the area and the chemical storage/fuel areas and then retreat to the evacuation assembly point.

BUSH FIRE

Emergency Procedures

BOMB THREAT

BetterGROW

safe by choice not by chance

In the event of a bomb threat

REMEMBER. Keep calm. Don't hang up, and try to keep the caller talking.

Exact wording of the threat: .....

.....

.....

Questions to ask	Callers Response
When is the bomb going to explode?	
Where did you put the bomb?	
When did you put it there?	
What does the bomb look like?	
What kind of bomb is it?	
What will make the bomb explode?	
Did you place the bomb?	
Why did you place the bomb?	
What is your name?	
Where are you?	
What is your address?	

Record call line information - DO NOT hang up

Call Details	
Date:	Duration of call:
Time:	Phone number:

Call Recipient
Name:
Signature:

Callers Voice	Background
☐ Calm	☐ Street noises
☐ Angry	☐ Factory noises
☐ Excited	☐ Machine noises
☐ Slow	☐ Crockery
☐ Rapid	☐ Animal noises
☐ Soft	☐ Voices
☐ Loud	☐ Clear
☐ Laughing	☐ PA system
☐ Crying	☐ Static
☐ Normal	☐ Music
☐ Distinct	☐ House noises
☐ Slurred	☐ Motor noises
☐ Intoxicated	☐ Office noises
☐ Stuttering	☐ Public noises
☐ Lisp	☐ Local call
☐ Cracking voice	☐ STD call
☐ Deep	☐ Aircraft noises
☐ Ragged	☐ Other:
☐ Clearing throat	
☐ Disguised	
☐ Deep Breaths	
☐ Raspy	
☐ Young	
☐ Elderly	
☐ Familiar, who?	
☐ Accent:	
☐ Sex:	
☐ Estimated Age:	

Immediately inform your supervisor. Give them this completed form. They will contact 000 and the Site Manager. Await their instructions. DO NOT discuss this with other staff.

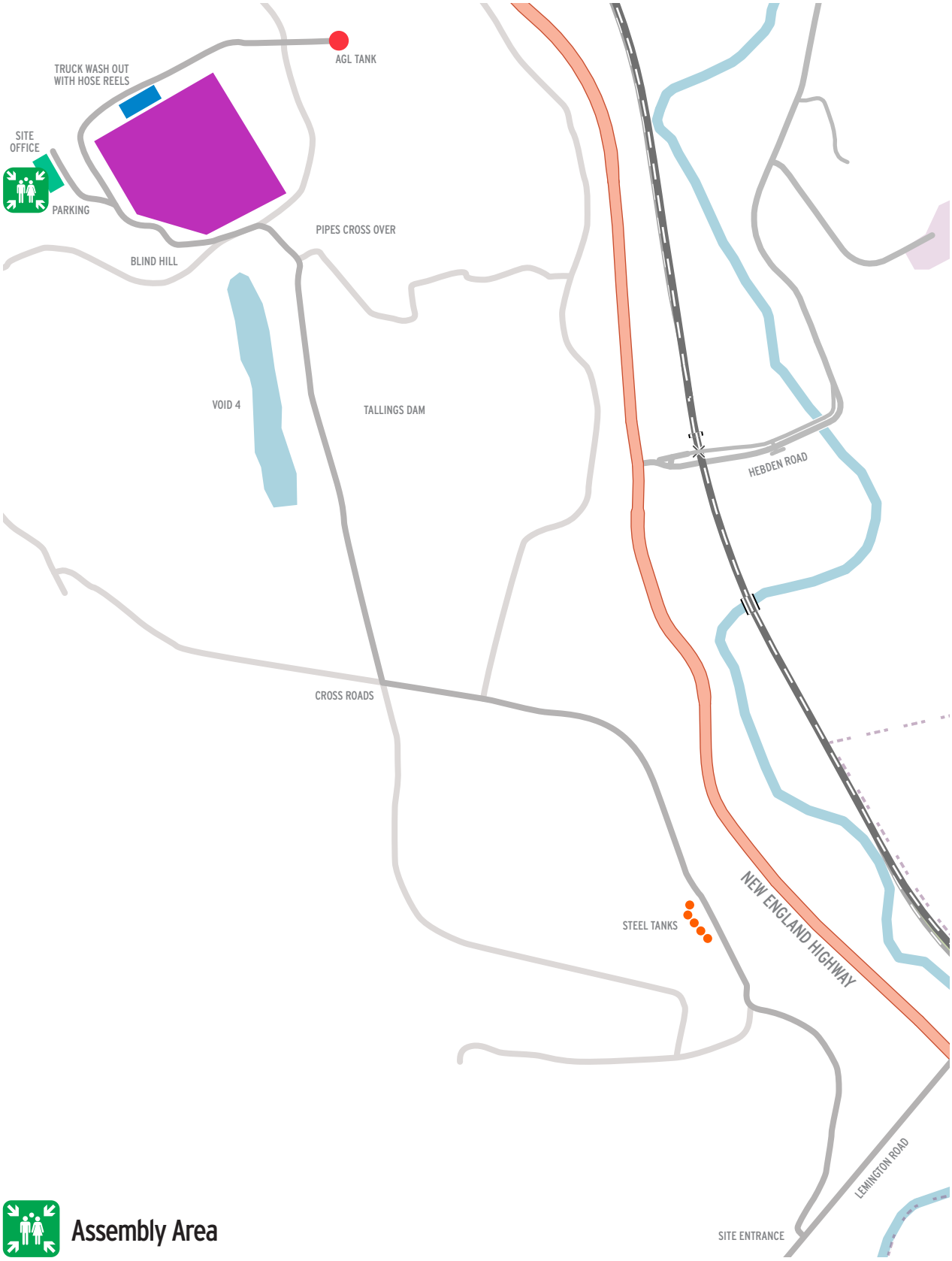
BOMB THREAT

Emergency Procedures

SITE MAP

BetterGROW

safe by choice not by chance



Assembly Area

SITE MAP

Appendix G
Pollution Incident Response Management Plan

Pollution Incident Response Management Plan

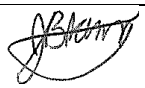
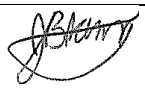
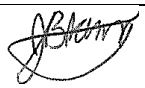
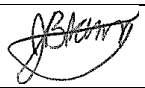
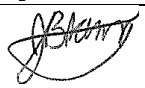
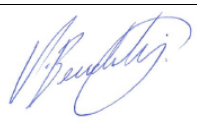
Bettergrow Pty Ltd

EPL 7654

74 Lemington Road

Ravensworth NSW

Document Control

Rev No.	Rev Date	Author/Position	Details	Authorised	
				Name/Position	Signature
2	April 2017	Bettergrow			
3	May 2018	Bettergrow			
4	February 2019	Bettergrow			
5	April 2020	Bettergrow			
6	18/06/21	Jacqui Blomberg Environmental Manager	• Annual review • Desktop simulation (diesel spill) • Update contact details • Restructure of PIRMP	Jacqui Blomberg Environmental Manager	
7	6/06/2022	Jacqui Blomberg Environmental Manager	• Annual review • Desktop simulation (spon. com of windrow) • Update contact details	Jacqui Blomberg Environmental Manager	
8	10/05/2023	Jacqui Blomberg Environmental Manager	• Review and update to SSD 9418 • Tested to include updated volume of material on-site and surface/leachate water controls • Include DPI details for Phylloxera • Update contacts	Jacqui Blomberg Environmental Manager	
9	23/05/2024	Jacqui Blomberg Environmental Manager	• Annual review • Desktop simulation • No change required	Jacqui Blomberg Environmental Manager	
10	2/07/2024	Jacqui Blomberg Environmental Manager	• Review due to environmental incident, loss of water from western leachate dam 18/06/2024 • Added EPA to Table 2 • Included leachate to Table 7	Jacqui Blomberg Environmental Manager	
11	27/09/2024	Jacqui Blomberg Environmental Manager	• Review due to SSD-9418 condition C8(c) • Update for leachate management Table 4 Risk Assessment • Update Appendix 4 • Update Appendix 5	Victor Bendevski Environment and Regulatory Compliance	

A Pollution Incident Response Management Plan (PIRMP) must be prepared for all Projects based in NSW that hold an Environmental Protection Licence (EPL), or for any project if directed to prepare one by the EPA. This PIRMP has been prepared for the Bettergrow Pty Ltd composting facility at 74 Lemington Road Ravensworth NSW which holds EPL 7654.

It is a requirement under Clause 98D of the Protection of the Environment Operation Amendment Regulations 2012 that this PIRMP be made publicly available within 14 days after it is prepared on a publicly accessible (Company) website or, if there is no such website, by providing a copy of the plan, without charge, to any person who makes a written request for a copy.

The objectives of this PIRMP are to:

- Ensure comprehensive and timely communication about a pollution incident to staff at the premises, the Environment Protection Authority, Singleton Council and other relevant authorities specified in the POEO Act, and people outside the project who may be affected by the impacts of a pollution incident (i.e. local community including businesses);
- Minimise and control the risk of a pollution incident associated with the operation of the facility by identifying risk and the development of actions to minimise and manage those risks; and
- Ensure that the PIRMP is properly implemented by trained staff, identifying persons responsible for enacting it and ensuring that the plan is regularly tested for accuracy, currency and suitability.

1) External Notification Protocol

The following authorities must be contacted in the order below immediately for pollution incidents that threaten or cause material harm to the environment.

Table 1 External Notification Protocol

Authority	Phone Number
Emergency Services – Fire and Rescue NSW Police NSW Ambulance Service	000*
***Only ring 000 if the incident presents an immediate threat to human health or property and requires Emergency Services. If the incident does not require an initial combat agency or once the 000 call has been made, notify as listed below**	
EPA Pollution Hotline	131 555
Ministry of Health – Singleton Hospital	02 6571 9222
SafeWork NSW	131 050
Local Authority – Singleton Council	02 6578 7290
Fire and Rescue – Station 444 Singleton Fire Station	02 6572 1495
Department of Planning, Housing and Infrastructure	Via Major Projects portal

When notifying authorities that a pollution incident has occurred, the following information must be provided:

1. The time, date, nature, duration and location of the incident
2. The location of the place where pollution is occurring or is likely to occur
3. The nature, the estimated quantity or volume and the concentration of any pollutants involved, if known
4. The circumstances in which the incident occurred (including the cause of the incident, if known)
5. The action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution, if known.

If information required in items 3, 4 and 5 are not known when the initial notification is made but becomes known afterwards, that information must be provided to the authority immediately after it becomes known.

2) Community Notification and Action Protocol

Notification to any residents, businesses or other premises that may be affected by the pollution incident may include the following:

1. Details of the pollution incident and extent of impact (as known at the time)
2. Safety warnings and recommendations to prevent/minimise impacts, if required

3. Potential impacts on the operation of local businesses, if required

In the event of a pollution incident which has the potential to impact the local community, the Site Manager will notify the Environmental & Regulatory Compliance Manager who will determine if community notification is required. Appendix 1 provides contact details of those businesses immediately surrounding the facility and includes emergency contact details for quick reference in the event of an incident. The nearest residential receiver (the village of Camberwell) is approximately 6.8km south of the site. The closest natural water course, Bayswater Creek, is over 500m west of the site.

The following table lists the mechanisms to be followed in the event that a pollution incident has the potential to impact the surrounding community in order to minimise the risk of harm.

Table 2 Community Notification and Action Protocol

Pollution Incident Scenario	Potential Impacts	What to do (response)	Who to Notify	When to notify	Communication Mechanism
Off-site odour emissions	Amenity Air quality Complaints	Apply a 'cap' of matured compost (up to 150-200mm thick if screened) on the offending windrow For detention basin check aerator is operating	EPA Singleton Council DPHI Adjacent businesses	Immediately after controlling emission where community impacted - including adjacent businesses	Telephone
Off-site dust emissions	Air quality Amenity Complaints	Use dust suppression immediately to control source NOTE water used for dust suppression on compost hardstand/windrows can be sourced from the leachate detention basin. ALL OTHER dust suppression water must be sourced from the southern void water body	EPA Singleton Council DPHI Adjacent businesses	Immediately after controlling emission where community impacted - including adjacent businesses	Telephone
Uncontrolled release of leachate	Contamination of surface water or groundwater	Check bunding and flow paths integrity and immediately repair with clay. Clean out swales if necessary Clean out excess sediment from basin	EPA Singleton Council DPHI Adjacent businesses	Immediately after controlling/ containing release	Telephone
Smoke from smouldering stockpile/fire	Air quality Amenity Complaints	Dig out hot spot with excavator and spray with water to cool down	FRNSW if fire cannot be contained EPA Singleton Council DP HI Adjacent businesses	Immediately where community impacted - including adjacent businesses	Telephone

3) Definition of a Pollution Incident

A pollution incident that requires notification to authorities is defined in section 147 of the Protection of the Environment Operations Act 1997 as:

(a) Harm to the environment is material if:

(i) It involves actual or potential harm to the health of safety of human beings or to ecosystems that is not trivial, or

(ii) If results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000 (or such other amount as is prescribed by the regulations), and

(b) Loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.

Note: anyone on site can activate the PIRMP though external notification is the responsibility of Management

4) Hazard Identification and Pre-emptive Measures

The **Compost Management Plan** and the detailed **Surface and Groundwater Management Plan** associated with Bettergrow Ravensworth facility identifies environmental aspects and impacts of the site including potential hazards and management measures to be employed relevant to pollution including water, waste and air quality. Table 3 lists the main potential hazards and Table 4 provides a risk assessment of these hazards and includes applicable pre-emptive measures and controls.

Refer to the **Workplace Procedures** and **Emergency Procedures** located in the Site Office for actions and arrangements to minimise the risk of harm to any persons on the premise should an incident occur. This includes immediate actions to be taken in the event of an emergency or an environmental incident, and important contact details including those for adjacent businesses to the facility.

Table 3 Hazard Identification

Aspect	Hazards
Water	Storage of fuel, oils and chemicals Refuelling activities Sediment laden water Leachate Fire water Poor management/maintenance of site surface water/stormwater system
Waste	Spill/Accident during transport Loss of material being transported to site for reuse See Appendix 4 for **Road Transport – Waste material for beneficial reuse – What to do in an Emergency** Liquid waste: Fuels, oils, greases, engine coolant Hazardous waste: Lubricants Cleaning agents/detergents Non-Complying Waste: Non-recyclable and other putrescible general solid waste Spoil, concrete, rubble Plastics
Air	Dust Odour Fire

Table 4 Risk Assessment

Hazard	Impact (Human Health &/or Environment)	Inherited Risk Level	Pre-Emptive Measures & Control	Residual Risk Level
Sediment laden water leaving site, including mud tracking onto public roadways	Environment	12 HIGH	- site wheel wash - grass lined swales with check dams and/or rip rap - minimise sediment retention onsite by directing waters to respective sediment detention basins - three 'chain of pond' basins on site	5 LOW
Pollution of waterway from hydrocarbon spills from machinery/refuelling/fuel storage (hazardous/liquid waste)	Human Health &/or Environment	14 HIGH	- plant hazard assessment conducted - regular plant checks - site plans identifying fuel storage area - minimal fuel/oils/greases/engine coolant etc. stored on site - adequately stocked spill kits - Emergency Evacuation Plan - Workplace and Emergency Procedures	5 LOW
Pollution of waterway from leachate	Human Health &/or Environment	21 EXTREME	- Daily reuse of leachate on compost windrows - Leachate detention basin maintained for 1 in 25 year 24 hour rainfall event - Two 'chain of pond' basins on site, in the event leachate discharges this will flow into AGL Macquarie's Void 4 (decommissioned mine void used as a water storage dam). - Undertake controlled discharge **HOLD POINT**. Site to take sample and send to lab for analysis on a 48 hour turnaround time (pollutants listed in EPL 7654). Only sample Monday-Wednesday to ensure results are provided within 48hr period. Environmental Manager to review results and provide approval to discharge. See OEMP for detail.	8 MEDIUM
Pollution of waterway from fire water	Environment	14 HIGH	- fire water directed to basins via perimeter swale system	5 LOW
Air pollution from fire smoke	Human Health &/or Environment	14 HIGH	- windrows monitored for smoulder - windrows regularly turned each day - if hot spot identified is dug with excavator and cooled with water	5 LOW
Non-complying material brought onto site	Human Health &/or Environment	13 HIGH	- clear identification of acceptable and non-acceptable/non-complying waste - contractual requirement with suppliers - employee training including site induction	5 LOW
Generation of dust from mobile equipment/vehicles	Human Health &/or Environment	14 HIGH	- traffic movements restricted to 15km/hr on site - dust suppression on site - trucks leaving site to have loads covered - trucks to wash out on wash hardstand before leaving site	5 LOW

Table 5 Risk Assessment Matrix

		POTENTIAL CONSEQUENCE				
		INSIGNIFICANT	MINOR	MODERATE	MAJOR	DISASTROUS
CATEGORY OF HARM	HEALTH & SAFETY →	• Temporary discomfort or pain	• First aid treatment	• *Medical treatment* • *Lost work time*	• *Serious injury (e.g. amputation, admittance to hospital, permanent loss of body function)*	• *Fatality*
				Hazard may be "Significant"		
	ENVIRONMENT →	• No adverse impact (e.g. appearance issue only)	• Impact contained to site with simple clean-up process	• Impact contained to site requiring specialist clean-up	• Significant local environmental impact • Specialist clean-up required	• Environmental impact of regional or national significance • Long term damage
	BUSINESS CONTINUITY →	• Process disruption, no impact on customer	• Process disruption with minor customer impact (e.g. late delivery)	• Damage to non-critical process (e.g. can transfer work to another process) • Customer inconvenienced (e.g. customer suffers a loss)	• Loss of key processes • Structural damage to facilities • Loss of key supplier or customer • Financial loss >$500k AD	• Effective loss of site • Long term loss of market share
	REPUTATION →	• Public concern limited to individuals • No broader political concern or media coverage	• Local community concern, political enquiry or media coverage	• Regional public concern, political enquiry or media coverage	• National public concern, political enquiry or media coverage • Reduced ability to obtain capital or insurance	• International public concern, political enquiry or media coverage • Reduced company or brand market value
	REGULATORY COMPLIANCE →	• No requirement to report to authority	• Mandatory reporting but authority unlikely to take any action	• Authority likely to give informal warning	• Authority likely to give formal warning or on the spot fine • Litigation/ prosecution possible	• Litigation/ prosecution likely
LIKELIHOOD	**ALMOST CERTAIN** >99% probability, or is expected to occur in most circumstances, or could occur within days to weeks, or will occur repeatedly without corrective action	**11 HIGH**	**16 HIGH**	**20 EXTREME**	**23 EXTREME**	**25 EXTREME**
	LIKELY 50-99% probability, or will probably occur in most circumstances, or could occur within weeks to months	**7 MEDIUM**	**12 HIGH**	**17 HIGH**	**21 EXTREME**	**24 EXTREME**
	POSSIBLE 20-50% probability, or should occur at some time, or could occur within months to years	**4 LOW**	**8 MEDIUM**	**13 HIGH**	**18 EXTREME**	**22 EXTREME**
	UNLIKELY 1-20% probability, or could occur but would not be expected, or could occur in years to decades	**2 LOW**	**5 LOW**	**9 MEDIUM**	**14 HIGH**	**19 EXTREME**
	EXTREMELY UNLIKELY <1% probability, or may occur but only in exceptional circumstances, or only occur as a 100 year event	**1 LOW**	**3 LOW**	**6 MEDIUM**	**10 HIGH**	**15 HIGH**

LOW	Manage by routine procedures	**MEDIUM**	Manage by SOP/JSA	**HIGH**	Manage by policy and specific training (critical standards)	**EXTREME**	Detailed research and management planning is required at a senior level (i.e. Do we really need to have this risk and if so how is it best managed)

5) Contact Details and Notification Protocol

Appendix A contains an emergency phone list including services/utilities, adjacent neighbours and employees relevant to Bettergrow. Table 6 below provides information for key personal who are responsible for managing the response on site, and those who are authorised to notify the relevant authorities as noted in Table 1 External Notification Protocol.

Table 6 Contact Details & Level of Authority

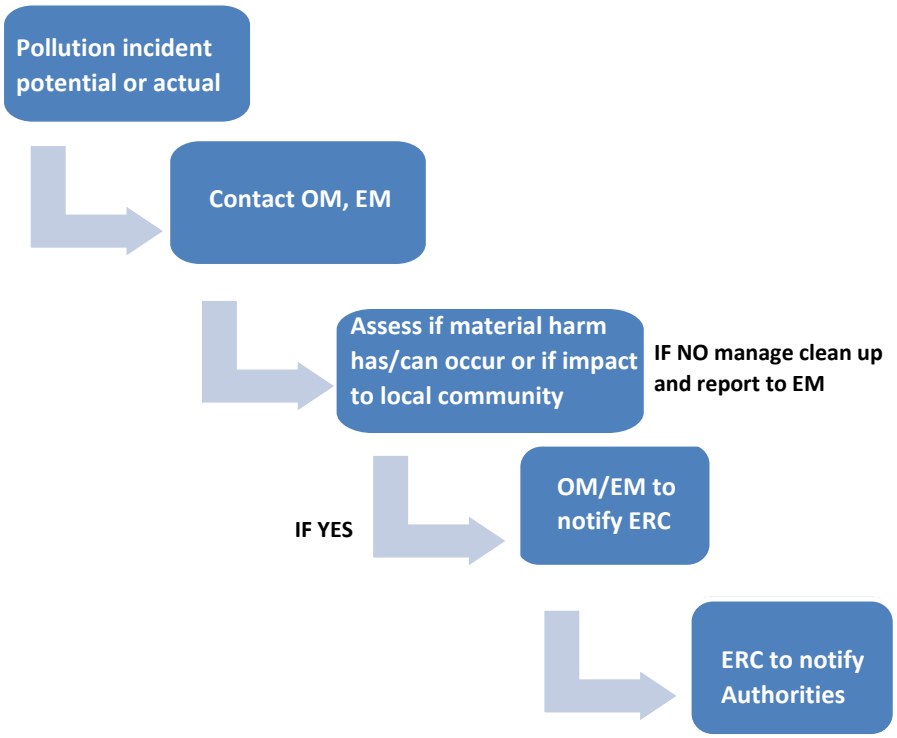
Name	Position	Phone Number	Notify Authorities (Y/N)
Zac Rowlandson	CEO	0411 729 732	*Y
Roger Crisp	Biosolids Manager	0427 210 070	*Y
Mark Waldron	Operations Manager	0435 402 885	*Y
Todd Wurth	Site Coordinator	0467 019 670	*Y
Jacqueline Blomberg	Environmental Manager	0436 609 556	*Y
Victor Bendevski	Environment and Regulatory Compliance (ERC)	0410 327 635	Y

*after discussing with ERC

In the event that a potential pollution incident has occurred, the person who discovered this is to take charge until relieved by a more senior employee or emergency services personnel and follow the Pollution Incident Internal Notification protocol as shown below in Figure 1.

Mechanisms used to communicate with the public to provide, where possible, early warning of and following a pollution event that has the potential to impact the surrounding community can be found above in Section 2 and Table 2. These mechanisms will also be used to regularly update those affected by an incident.

Figure 1 Pollution Incident Internal Notification
(**OM** Operations Manager, **EM** Environmental Manager, **ERC** Environmental and Regulatory Compliance)



6) Inventory

Table 7 Pollution Inventory of potential onsite pollutants

Product	Location on site	Max Quantity on site	Type of containment	SDS Y/N	Hazardous Y/N
Petrol (jerry cans)	Site shed	2x20L	Enclosed site shed	Y	Y
Petrol (fuel pod)	Site shed	400L	Enclosed site shed	Y	Y
Castrol Premium HD grease	Site shed	20x450g	Enclosed site shed	Y	N
Diggers degreaser	Site shed	5L	Enclosed site shed	Y	Y
WD-40	Site shed	375ml can	Enclosed site shed	Y	Y
Green Lube EP2 grease	Site shed	20x450g	Enclosed site shed	Y	Y
Havoline 10W-30	Site shed	5L	Enclosed site shed	Y	N
Valvoline Ultramax 46	Site shed	20L	Enclosed site shed	Y	N
Valvoline Valplex EP grease	Site shed	20x450g	Enclosed site shed	Y	N
Dewatered sludge (biosolids)	Hardstand compost area	*CMP waste receival record	Hardstand pad and swale system	Y	N
Potential Phylloxera plant host material	Phylloxera hardstand feedstock, compost and truck washout areas	*CMP waste receival record	Designated Phylloxera hardstand feedstock, compost and truck washout areas	N	Y Biosecurity
Leachate water	Eastern leachate containment basins	40ML	Compacted containment basins	N	N Though can cause environmental pollution

*Compost Management Plan

7) Safety Equipment

A description of safety equipment used to minimise or prevent the risks to human health and the environment, and to contain or control a pollution incident is outlined within the **Standard Operating Procedure Production of Biosolids Based Compost, Workplace Procedures** and **Emergency Procedures**. The Site Plan (Appendix 4) shows the locations of safety response equipment which includes spill kits, fire hose reels and fire extinguishers. The site also has a dedicated water cart for use. The Site Plan is displayed on the site Safety Notice Board.

Spill kits will be maintained at all times and will include:

- Absorbent pads, pillows, mini-booms & granular absorbent material
- Nitrile gloves
- Disposal bags and ties
- Instruction card

Hardcopies of Safety Data Sheets (SDS) and Chemical Risk Assessments are stored in the site office with softcopies maintained locally on the Company's electronic information system.

8) Maps

Appendix 3 Regional Context shows the location of the premise, surrounding land uses and local water course which could be impacted in the event of a pollution incident.

Appendix 4 Site Plan shows the location of the potential pollutants on site, stormwater swales, site safety equipment and Bettergrow emergency assembly area. Appendix 5 shows the site stormwater flow direction.

Maps are displayed on the site Safety Notice Board.

9) Training

Details regarding the nature and objectives of any staff competence, training and awareness are outlined in the **Compost Management Plan**, Staff Training section. Several forms of environmental training will be provided. Training records are maintained on site and on the Company's electronic information management system.

Examples of training include:

- Site induction, including environmental roles and responsibilities;
- Toolbox talks & Standard Operating Procedures;
- 1st Response Incident/Accident; and
- Work Method Statements/Job Safety Analysis

10) Testing & Review

The testing of this plan shall be carried out in such a manner as to ensure that the information included in this plan is accurate and up to date, and the plan is capable of being implemented in a workable and effective manner. Any such test is to be carried out:

- Routinely at least every 12 months
- And within one month of any pollution incident occurring to assess, whether the information included in the plan is accurate and up to date

Testing of the PIRMP will cover components of the plan, including the effectiveness of training and will involve desktop simulation and practical exercise.

Appendix 1 Emergency Contact List

EMERGENCY ADDRESS: 74 LEMINGTON ROAD, RAVENSWORTH	
Fire/Ambulance/Police	**000**
EPA Pollution Hotline	**131 555**
Department of Primary Industries NSW (for Phylloxera host plant material)	**1800 084 881**
Ministry of Health – Singleton Hospital	**02 6571 9222**
SafeWork NSW	**131 050**
Local Authority – Singleton Council	**02 6578 7290**
Fire and Rescue – Station 444 Singleton Fire Station	**02 6572 1495**
RMS (for traffic incidents/road condition reporting)	**131 700**
Matthew Parkinson – AGL	**0407 819 236**
AGL Site Emergency Coordinator	**02 6542 0555**
Zac Rowlandson – Bettergrow CEO	**0411 729 732**
Roger Crisp – Biosolids Manager	**0427 210 070**
Mark Waldron – Operations Manager	**0435 402 885**
Todd Wurth – Site Coordinator	**0467 019 670**
Jacqueline Blomberg – Environmental Manager	**0436 609 556**
Victor Bendevski – Environment & Regulatory Compliance	**0410 327 635**
John Borg – Managing Director	**0412 433 587**

Appendix 2 Road Transport – Waste material for beneficial reuse – What to do in an Emergency

In the event of an incident or accident which occurs on a public roadway the below actions are to be followed by the drivers of Bettergrow vehicles

Accident

- **You must stop if you are involved in an accident.**
- **Stay calm. Switch off the ignition and activate hazard lights**
- **Check to see if anyone is injured and assist where necessary. Keep yourself and others out of harm's way.**
- **Dial 000 if there are personal injuries**
- **Contact Bettergrow management**
- **Police must be notified if there is personal injury or damage to property or livestock if the owners are not present**
- **Exchange details with the other driver**

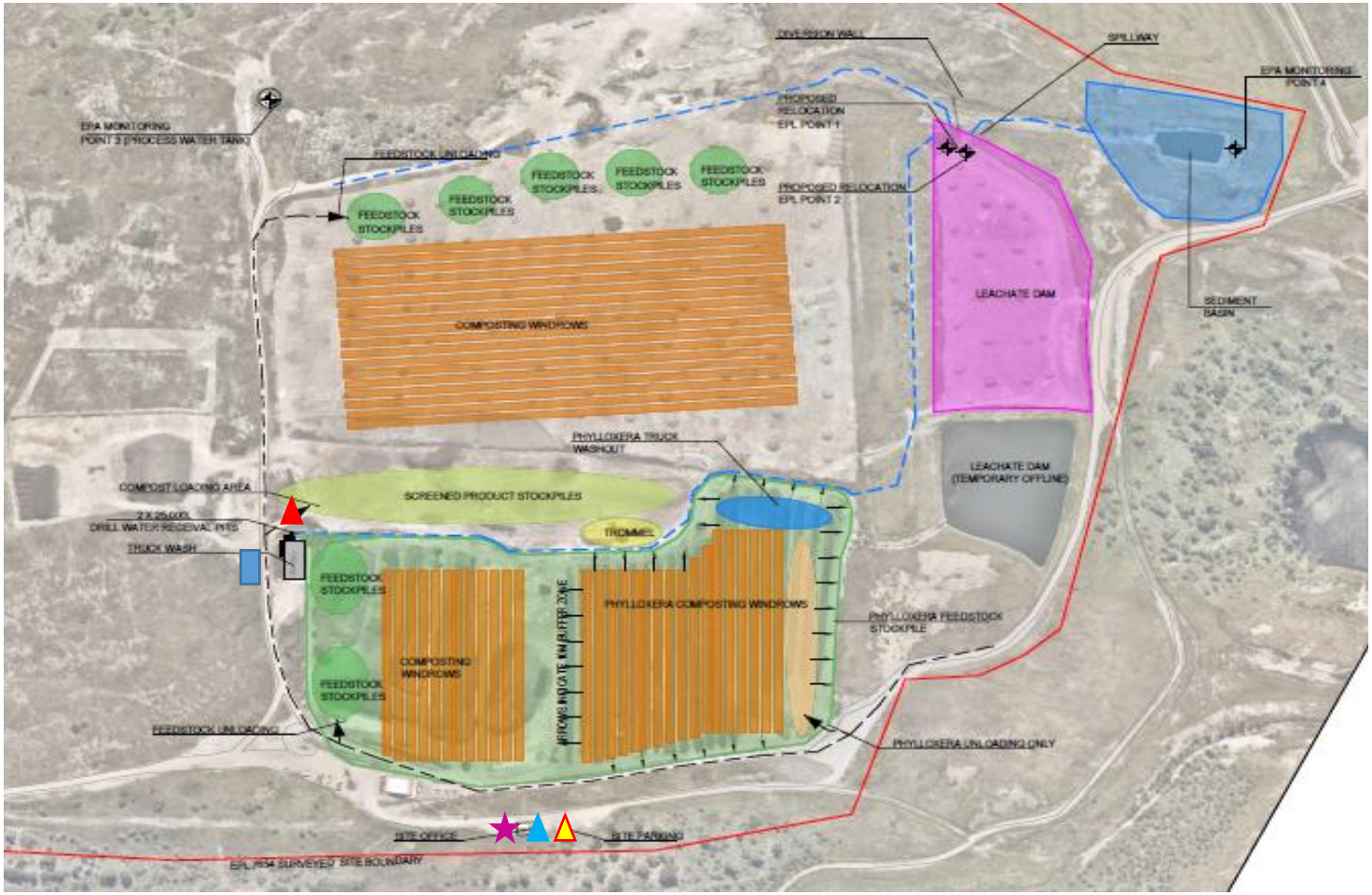
Spill

- **Attempt to position the vehicle to minimise environmental harm (If safe to do so).**
- **Attempt to stop the spill, use the spill kit supplied**
- **Contact Bettergrow Management**
- **Contact RMS if road crew needed for clean-up**
- **If a major spill occurs, contact the EPA on 131 555**
- **If spill of potential or actual Phylloxera plant host material, that is any green waste from the Sydney Basin, contact Department of Primary Industries on 1800 084 881**
- **Remove all material used in spill clean-up and dispose of correctly**

**** An Incident report MUST be completed as soon as the driver reports back to the office****

Appendix 3 Regional Context

Appendix 4 Site Plan



LEGEND

▲ Fire hose reels

▲ Spill kit

▬ Fuel container/storage area

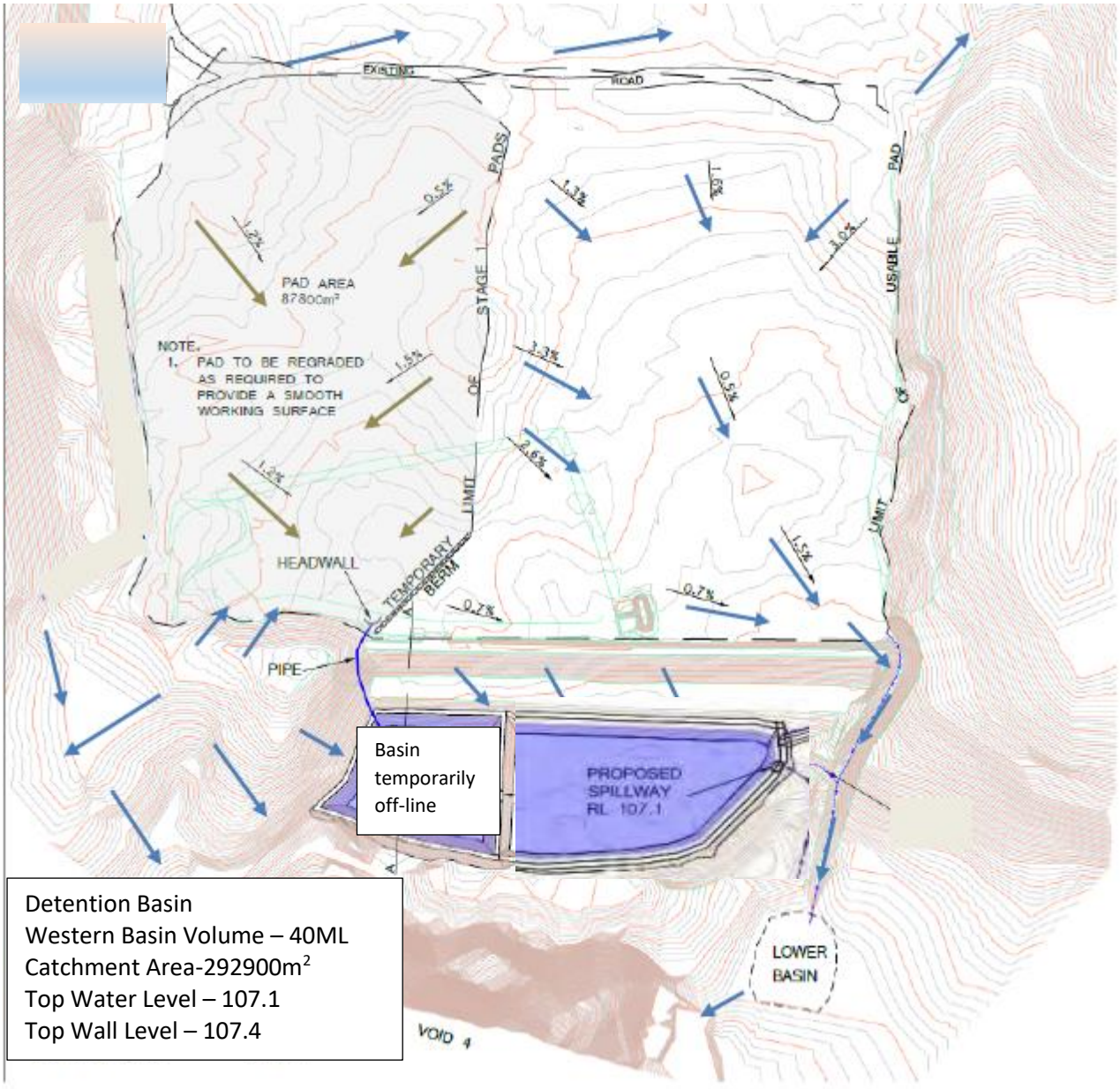
▲ First aid kit in Site Office

▲ Portable fire extinguisher in Site Office

NOTE portable fire extinguishers also on site Plant

★ Bettergrow Emergency Assembly Point

Appendix 5 Stormwater Flow Diagram



Appendix H
Biosecurity Protocol Documents

Emergency Procedure – Spill Management for Truck Drivers

In the event of an incident or accident the following actions are to be followed by all drivers

Accident

- You must stop if you are involved in an accident
- Stay calm, switch off the ignition and activate hazard lights
- Check to see if anyone is injured and assist where necessary
- Keep yourself and others out of harms way
- Dial **000** if there are injuries or danger
- Do not admit liability or blame yourself publicly
- Contact management - see **EMERGENCEY CONTACTS**
- Police must be notified if there is personal injury or damage to property or livestock and the owners are not present
- Exchange details with anyone else involved in the accident

Spill – Organic Material

- Attempt to position the vehicle to minimise environmental harm (if safe to do so)
- If host plant material comes in to contact with liquids, use spill kit to stop flow and contain material
- Contact management - see **EMERGENCEY CONTACTS**
- Spilt material must be brushed and shovelled up. Liquids are not to be used for clean-up
- Spilt material must be contained and transported either back to source of disposal or continue to the final destination facility for either treatment or disposal
- Management will refer to **Emergency Procedure 1 – Spill Management of Host Plant Material** within the **Transport Management Plan** and ensure correct procedures are followed.

EMERGENCY CONTACTS

FIRE / POLICE / AMBULANCE	**000**
Bettergrow Ravensworth Management	Mark Waldron 0435 402 885 Todd Wurth 0467 019 670
Department of Primary Industries (DPI)	1800 084 881
EPA	131 555
SafeWork NSW	131 050
RMS (Traffic / Road Conditions)	131 700

Record of Receipt of Host Plant Material

Business Name: Bettergrow Pty Ltd **N**					**Record Number:**		
PHAC Number(s)	**Date of Receipt**	**Type of host plant material or waste**	**Quantity** (m^3)	**Name of Receiver**	**Name of Authorised Signatory**	**Signature of Authorised Signatory**

Treatment Record

Business Name:		IP No.	N					Record No.:	

Date	Treatment method	Type of host plant material	Treatment duration	Treatment temperature	Process Controller name	Process Controller signature

Department of Primary Industries

Certificate Number	555555

Business Specific Information*

Dispatch Date: / / Ref No:

Arrival Date: / / PO No:

* These items display business specific information entered at the discretion of the consignor. They do not represent any part of the certifying conditions of the produce.

Plant Health Assurance Certificate

A biosecurity certificate issued under Part 13 of the *NSW Biosecurity Act 2015*

All accreditation details must be completed. Please print clearly and initial any alterations.

Consignment Details

Consignor

Name: Bloggs Bananas

Address: 259 Ocean Way

Coffs Harbour

State: NSW Postcode: 2450

Consignee

Name: Banana Wholesalers

Address: Sydney Markets

Flemington

State: NSW Postcode: 2129

Reconsigned to: (If applicable)

Splitting consignments, preparing composite lots or reconsigning whole consignments

Name:

Address:

State: Postcode:

Certification Details

IP Number	Facility Number	Procedure
N 4042	001	ICA16

Accredited Business that prepared produce

Name: 'Consignor as above'

Address:

State: Postcode:

Grower(s) (If more than one grower – attach list)

Name: 'Consignor as above'

Address:

State: Postcode:

	Number of Packages	Type of Packages (e.g. trays, cartons)	Type of Produce	Brand Name or identifying marks (as marked on packages)	Date Code (as marked on packages)	Authorisation for reconsignment
1	50	~~Trays~~ Cartons	Bananas	Bloggs Bananas	9/7/17	
2						
3						
4						

Treatment Details

	Treatment Date	Treatment Chemical (Active Ingredient), Concentration, Duration, Temperature
1	9/7/17	Bananas in a hard green condition with unbroken skin
2	/ /	
3	/ /	
4	/ /	

Additional Certification/Codes:

This certificate is valid for 21 days from date of certification

Declaration

I am a person authorised under the *NSW Biosecurity Act 2015* to issue this biosecurity certificate and I hereby certify that the details shown above are true and correct and the procedure(s) listed above have been completed.

John Bloggs	John Bloggs	9/7/17
Full name	Signature	Date

Note: A person who provides false or misleading information on a biosecurity certificate is guilty of an offence under the Act. Such action could result in a penalty infringement notice or prosecution. The maximum penalty for an individual is $1,100,000, and the maximum penalty for a corporation is $2,200,000. This information is collected by the collecting agency identified in this form in relation to its functions under the Biosecurity Act 2015. This agency/s and the NSW Department of Industry may use and disclose this information as reasonably necessary for the purpose of performing biosecurity risk functions under, or reasonably contemplated by, the Biosecurity Act 2015.

Appendix I
Example Monthly Workplace Inspection Record

WORKPLACE AND ENVIRONMENTAL INSPECTION CHECKLIST - PERIODIC

Location:		**Date:**	
Inspection Completed By:		**Signature:**	

1. Housekeeping (Work Areas) ☐ **N/A**		**Y/N/NA**	**General Comments**
1.1	Are work areas free from rubbish and obstructions?		
1.2	Is the flooring in good condition, appropriate, clean and free from slip/trip hazards?		
1.3	Are chairs, desks, cabinets / bookcases in good condition, clean and stable?		
1.4	Are stairs, steps and landings in good order, no broken steps, kick plates where required and handrails in good condition?		
1.5	Are all unused hand and power tools appropriately stored?		
1.6	Are power leads, and air hoses off the floor, with unused leads and hoses rolled and stored appropriately?		
1.7	Are appropriate and adequate cleaning supplies available for use, with appropriate PPE?		
1.8	Are all areas free of rubbish with bins emptied on a regular basis?		
1.9	All signs erected and easy to read?		
1.10	Is there clear access/egress on the worksite?		
2. Facilities / Amenities ☐ **N/A**		**Y/N/NA**	**General Comments**
2.1	Do all workers have access to fully functioning, clean and well-ventilated amenities?		
2.2	Do all workers have access to cold drinking water?		
2.3	Is lighting adequate and appropriate for the nature of work performed?		
2.4	Are safety signs adequate and used appropriately? (Emergency, first aid, hazardous chemicals, PPE)		
3. Electrical ☐ **N/A**		**Y/N/NA**	**General Comments**
3.1	Are power boards and extension leads positioned in a safe place and in good condition? (Free from dust and wet areas, unstrained)		
3.2	Have all electrical leads, extension leads and power boards within the offices/workshops/workstations and amenities been inspected, tested and tagged for area*? Inspection tags must visible and current ** Guide: Office/Kitchen 5 yearly, Warehouse/Manufacturing 6 monthly, Construction 3 monthly)*		
3.3	Are power points and switches undamaged and in good condition?		
3.4	There are no double adaptors in use on site?		
3.5	Portable power tools in good condition with no broken switches or casings?		
4. Slings, Chains, Harnesses ☐ **N/A**		**Y/N/NA**	**General Comments**
4.1	Have all slings, chains & harnesses been inspected and have the appropriate tag? (RGBY)		

5. Hazardous Materials ☐ N/A		Y/N/NA	General Comments
5.1	Are safety data sheets (SDS) available for all chemicals (less than 5 years old) and located in prominent positions/point of use?		
5.2	Are chemicals clearly marked, labelled and stored correctly? As required by per chemical storage chart, bunding requirements and use of flammable cabinets.		
5.3	Are all decanted chemicals correctly labelled, stored and containers fit for purpose?		
5.4	Are all chemical storage units 1.5m from doorways and 3m from an ignition point, with corrosive and flammable goods stored separately?		
5.6	Are all chemicals stored within bunded pallets, cabinets etc?		
5.7	Are spill kits available, sealed, fully stocked and appropriate for the area location?		
5.8	Is there appropriate and adequate PPE for the used/stored chemicals as per the SDS?		
6. Emergency Preparedness and First Aid ☐ N/A		**Y/N/NA**	**General Comments**
6.1	Are emergency personnel identified, with up-to-date emergency personnel posters displayed on the WHS noticeboard?		
6.2	Is the site emergency evacuation plan and evacuation diagrams displayed in prominent locations?		
6.3	Are emergency exits and evacuation pathways/routes free of obstructions for a rapid exit and exit doors unlocked and unobstructed?		
6.4	Are emergency exit lights in place and working?		
6.5	Are fire extinguishers/hoses in place with signage and free of obstructions?		
6.6	Have fire extinguishers/hoses been serviced within the last 6 months?		
6.7	Are all fire hoses kept on the reel, not kinked or damaged and ready for use?		
6.8	Are first aid kits and other first aid equipment e.g., Defibrillator (AED), checked with used supplies replaced (review First Aid Supplies Checklist) and is first aid signage in place?		
6.9	Are all workers aware of the location of the site emergency assembly point?		
6.10	Are all eye wash/shower stations functioning? Activate during inspection (where possible)		
7. Other Mobile Plant ☐ N/A		**Y/N/NA**	**General Comments**
7.1	Are prestart checklists/logbooks being completed prior to use for all Mobile Plant?		
7.2	Is all mobile plant being serviced as per the schedule?		
7.3	Does all mobile plant visually appear to be in good working condition?		

8. Environment ☒ N/A		Y/N/NA	General Comments
8.1	Are there any chemical spills that have occurred on site? IF YES, what was the volume, material and clean up activities? Did any enter stormwater system?		
8.2	Are erosion/siltation control measures in place and working effectively ?		
8.3	Is the biosolid receival area silt fenced/earthen bunded?		
8.4	Is there any biosolids outside the site?		
8.5	Is the phylloxera receival, composting and vehicle wash out area appropriately isolated i.e., 10m buffer zone?		
8.6	Are the clean water (stormwater) diversion channels working effectively?		
8.7	Are the leachate diversion channels working effectively?		
8.8	Is there any pooling/ponding of water on the hardstand pads?		
8.9	Has the stormwater and leachate dams been checked to ensure no loss of containment and/or compromise of integrity?		
8.10	Have there been any discharges from the sediment basin or leachate dam during this inspection period? IF YES were samples collected and sent to NATA lab?		
8.11	If inspection is within quarterly water quality monitoring period, was the process water tank and leachate dam characterisation testing done?		
8.12	Have the water level markers in the leachate dam and sediment basin (lower basin) been checked to ensure enough capacity in the event of significant rainfall?		
8.13	Does excess sediment need to be removed from the leachate dam or sediment basin?		
8.14	Has any unapproved/non-conforming material been brought onto site?		
8.15	Is the most current Pollution Incident Response Management Plan (PIRMP) and Environmental Protection Licence (EPL 7654) available on site?		
8.16	Have there been any complaints received?		
8.17	Have there been any environmental incidents or non-conformances on site?		
8.18	Is there any dust being generated by the site activities? If yes, has suitable dust suppression been implemented?		
8.19	Is there any dust leaving the site? If yes, have controls been implemented to stop and manage?		
8.19	Are there any pests, vermin or weeds that post an environmental hazard?		
9. Ladders ☐ N/A		**Y/N/NA**	**General Comments**
9.1	Are there any loose, cracked, bent or missing rungs/treads or platforms?		
9.2	Any cracked, bent, spilt or loose rails, spreaders?		
9.3	Are the feet of the ladder in good condition, fitted securely, undamaged and not missing?		

9.4	Do all ladders have Australian Standards sticker displayed?		
9.5	Are all ladders fitted with the Load Limit Sticker?		
9.6	Are all ladders listed on ladder register available for inspection?		

Action Plan				
Actions required	**Action assigned to**	**Date assigned**	**Date to be completed**	**Signature**
Storage and Reference	**Inspection Completed By**			**Date**
To be reviewed at Site WHS Meeting.				
Workplace inspection checklists must be completed monthly, stored in the site file and uploaded to DataStation before the end of each month.				