Pollution Incident Response Management Plan PIRMP - West Nowra Recycling and Waste Facility

The purpose of the 2019 PIRMP is to demonstrate how Shoalhaven City Council has complied with the requirements of the Protection of the Environment Legislation Amendment Act 2011.

Waste Services Unit, Shoalhaven City Council, 25 March 2019
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Photo 1: Depot Aerial Photo.
1. INTRODUCTION

The West Nowra Recycling and Waste Facility (Depot) is located at 120 Flatrock Road, Mundamia. Refer to Figure 1.1 for the Depot Location Plan.

The Depot operates under an *Environment Protection Licence (EPL)* as a general solid waste (putrescible and non-putrescible) landfill. The *EPL* number is 58771.

The principal Depot operations include, but are not limited to:

- landfilling operation (Stage 3 – southern portion of the Depot),
- public buyback centre / recycling area / community recycling centre,
- recycling materials stockpiling and processing areas,
- public drop-off transfer station,
- leachate irrigation over an approved utilisation area, and
- sediment and leachate dams along the western boundary of the Depot.

Refer to Drawing Number 1.1 for the Depot Layout Plan (Stages 1, 2 and 3).

2. PURPOSE of the POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN (PIRMP)

The purpose of the PIRMP is to ensure compliance with the requirements of the *Protection of the Environment Legislation Amendment Act 2011 (POELA Act)*.

The PIRMP shall:

- ensure comprehensive and timely communication about a pollution incident to staff at the Depot, the Environment Protection Authority (EPA), other relevant authorities specified in the *POELA Act* (such as local Councils, NSW Ministry of Health, SafeWork NSW, and Fire
and Rescue NSW) and people outside the Depot who may be affected by the impacts of the pollution incident;

- minimise and control the risk of pollution incident at the Depot by requiring identification of risks and the development of planned actions to minimise and manage those risks, and

- ensure that the PIRMP is properly implemented by trained staff, identifying persons responsible for implementing it, and ensuring that the PIRMP is regularly tested for accuracy, currency and suitability.

This PIRMP has been prepared in accordance with the EPA’s *Environmental Guidelines: Preparation of Pollution Incident Response Management Plans, 2012*.

The PIRMP is a working document, and the management strategies outlined are intended for review from time to time, and where necessary, changed as new strategies and technologies become available.

### 2.1 Legislative Requirements

The specific requirements for PIRMPs are set out in *Part 5.7A of the POEO Act and the Protection of the Environment Operations (General) Regulation 2009 (POEO(G) Regulation)*. In summary, this provision requires the following:

- all holders of EPLs must prepare a PIRMP (section 153A, POEO Act).

- the plan must include the information detailed in the POEO Act (section 153C) and be in the form required by the POEO(G) Regulation (clause 98B).

- licensees must keep the plan at the premises to which the EPL relates or, in the case of trackable waste transporters and mobile plant, where the relevant activity takes place (section 153D, POEO Act).

- licensees must test the plan in accordance with the POEO(G) Regulation (clause 98E).

- if a pollution incident occurs in the course of an activity so that material harm to the environment is caused or threatened, licensees must immediately implement the plan (section 153F, POEO Act).

### 2.2 Definition of ‘Pollution Incident’

The definition of a ‘Pollution Incident’ is:

*Pollution Incident* means an incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill or other escape or deposit of a substance, as a result of which pollution has occurred, is occurring or is likely to occur. It includes an incident or set of circumstances in which a substance has been placed or disposed of on premises, but it does not include an incident or set of circumstances involving only the emission of any noise.

A pollution incident is required to be notified if there is a risk of ‘*material harm to the environment*’, which is defined in Section 147 of the POEO Act as:

(a) harm to the environment is material if:

(i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or

(ii) it 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.
The Depot is now required to report pollution incidents ‘immediately’ to the EPA, NSW Health, Fire and Rescue NSW, SafeWork NSW and the local Council. ‘Immediately’ has its ordinary dictionary meaning of promptly and without delay.

2.3 Regulation

An amendment to the POEO(G) Regulation was made (by the Protection of the Environment Operations (General) Amendment (Pollution Incident Response Management Plans) Regulation 2012) with the object of specifying additional matters that need to be included in PIRMPs.

2.4 Obligations and Transitional Period for Complying with the Requirements

Holders of an existing EPL need to prepare and be able to implement the PIRMP by 1 September 2012. New licensees will need to have a PIRMP in place prior to commencing operations.
3. DEPOT OVERVIEW

3.1 Property Description

The Depot is located on parcels of land owned by Shoalhaven City Council and includes other parcels of land for future proposed landfill extension and Resource Recovery Park sites. Refer to Drawing Number 1.1 for the Depot Layout Plan (Stages 1, 2 and 3). The Lot and DP numbers, and zoning details are summarised in Table 3.1.

<table>
<thead>
<tr>
<th>Property Owner</th>
<th>Lot Number</th>
<th>DP Number</th>
<th>Zoning</th>
<th>Area (ha)</th>
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<td>808415</td>
<td>E3</td>
<td>4.35</td>
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<td>SP2</td>
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<td>SP2</td>
<td>3.58</td>
</tr>
</tbody>
</table>

Table 3.1 – Property Description.

The principle environmental planning instrument applying to properties in the Shoalhaven Local Government Area (LGA) is the Shoalhaven City Council Shoalhaven Local Environmental Plan (SLEP) 2014.

The Depot is divided into several zones. They are:

- Zone E3 - Environmental Management, and
3.2 Buildings / Structures and Infrastructure

There are a number of permanent buildings / structures at the Depot, they include the following:

- gate house and two weighbridges (entry and exit),
- transfer station drop-off area
- staff amenities building,
- plant and equipment sheds,
- storage sheds,
- buy-back centre shed,
- recycling materials storage shed,
- community recycling centre, and
- pump sheds.

The Depot’s main infrastructure is the active landfilling area. Landfill cell stages are constructed in accordance with the *Environmental Guidelines: Solid Waste Landfills, Second Edition, 2016*. Each landfill cell stage is constructed using the following materials:

- Compacted clay sub-grade surface,
- Geosynthetic clay liner (GCL),
- HDPE liner,
- Protection and separation non-woven geotextile materials,
- Drainage gravel materials,
- Drainage geocomposite,
HDPE leachate collection pipes.

4 Legislative Requirements and Regulatory Controls

The specific requirements for PIRMPs are set out in Part 5.7A of the POEO Act and the Protection of the Environment Operations (General) Regulation 2009 (POEO(G) Regulation). In summary:

- all holders of EPLs must prepare a PIRMP (Section 153A, POEO Act),
- the PIRMP must include the information detailed in the POEO Act (Section 153C) and be in the form required by the POEO(G) Regulation (Clause 98B),
- EPL holders must keep the PIRMP at the Depot to which the EPL relates (Section 153D, POEO Act),
- EPL holders must test the PIRMP in accordance with the POEO(G) Regulation (Clause 98E), and
- if a pollution incident occurs in the course of an activity so that material harm to the environment is caused, or threatened, EPL holders must immediately implement the PIRMP (Section 153F, POEO Act).

The Depot is a licenced general solid waste (putrescible and non-putrescible) landfill facility under the Protection of the Environment Operations Act (POEO) Act 1997.

A copy of the Depot’s current EPL is not included.

5. PIRMP General Requirements

5.1 Form of PIRMP

(Reference: POEO Act – Section 153D, and POEO(G) Regulation – Clause 98B(1))

The purpose of the PIRMP is to improve the management of pollution incidents and facilitate better co-ordination with the relevant response agencies. The PIRMP must be in a written form, be prominently displayed at the weighbridge office, and be made available to any person responsible for its implementation and an authorised EPA Officer on request.

5.2 Relationship with Other Emergency Plans

(Reference: POEO(G) Regulation – Clause 98B(2))

The Depot already has an equivalent emergency plan in place. This emergency plan is titled; Site Emergency Procedure Manual – West Nowra Recycling and Waste Facility, 28 June 2017. The Depot’s PIRMP has been prepared to comply with other legislation such as the Work Health and Safety Regulation 2011.

A copy of the current Site Emergency Procedure Manual – West Nowra Recycling and Waste Facility, 28 June 2017 is not included.

5.3 Details to be Included in PIRMP

An EPL holder, except for waste transporters, must include the following information as a minimum. Holders of waste transporter licences have separate requirements.

5.3.1 Description and Likelihood of Hazards

(Reference: POEO(G) Regulation – Clause 98C(1)(a) and (b))

A PIRMP must provide a description of the main hazards to human health or the environment associated with the activity being performed at the Depot, the likelihood of any such hazards occurring, including details of any circumstances or events that could, or would, increase that likelihood.
If the Depot is near a sensitive environment, such as a densely populated area, school, hospital or water body, the PIRMP must consider the increased risks of environmental or health impacts of a pollution incident.

If the Depot is located near other facilities which handle dangerous or explosive materials, the PIRMP must consider the likelihood of any impacts on neighbouring facilities and consider employing measures to reduce or minimise impacts from a pollution incident which could set off a pollution incident at those facilities.

5.3.2 Pre-emptive Actions to be Taken
(Reference: POEO(G) Regulation – Clause 98C(1)(c))

A PIRMP must include detailed descriptions of the pre-emptive actions to be taken to minimise or prevent any risk of harm to human health or the environment arising from the activities undertaken at the premises. Pre-emptive actions may include the provision and use of spill containment kits, the installation and operation of stormwater cut-off valves, and the installation and use of fire containment water tanks.

5.3.3 Inventory of Pollutants
(Reference: POEO(G) Regulation – Clause 98C(1)(d) and (e))

A PIRMP must include an inventory of potential pollutants kept at the Depot or used in carrying out activities at the Depot, including the maximum quantity of any potential pollutant that is likely to be stored or held at the Depot. Pollutants can include, but are not limited to, chemicals used in cleaning or production purposes, fuels and lubricants used for equipment or machinery, gas cylinders, waste materials or wastewater, effluents and sediment contaminated stormwater.

Details of the pollutant storage locations, including underground storage tanks and storage methods, must also be included.

5.3.4 Safety Equipment
(Reference: POEO(G) Regulation – Clause 98C(1)(f))

A PIRMP must include a description of the safety equipment or other devices that are used to minimise the risks to human health or the environment and to contain or control a pollution incident. Specific details must be provided in relation to any site or activity specific safety equipment and must include the location where this equipment is stored and the material safety data information for any chemicals or fuels used or stored at the Depot. For example, this could include specific personal protective equipment (PPE) required for the handling of hazardous chemicals or radioactive substances, specific gas monitoring meters used to monitor gas leaks from tanks, floating booms used to contain spills on water bodies, and specific spill containment equipment.

5.3.5 Contact Details
(Reference: POEO(G) Regulation – Clause 98C(1)(g) and (h))

A PIRMP must include the names, position titles and 24 hour contact details of those key individuals who are responsible for activating the PIRMP and managing the response; those authorised to notify relevant authorities, including all relevant authorities under Section 148 of the POEO Act; and those responsible for managing the response to a pollution incident.

In addition, the PIRMP must include the contact details of the EPA, the local Council, NSW Ministry of Health, SafeWork NSW, and Fire and Rescue NSW, relevant to the EPL holder’s Depot. The contact details of any other organisations or agency that needs to be advised of the incident should also be included in the PIRMP, for example; the Department of Planning and Environment, and Department of Primary Industries.

5.3.6 Communicating with Neighbours and the Local Community
(Reference: POEO(G) Regulation – Clause 98C(1)(i))

Communicating with neighbours and the local community is an important element in managing the response to any incident. The PIRMP must include details of the mechanisms that will be used for
providing early warnings and regular updates to the owners and occupiers of premises who may be affected by an incident occurring at the Depot. Communication mechanisms may include incident notifications placed on the EPL holder’s website or social media networks (such as; Twitter or Facebook); the use of telephone calls or SMS or other messaging systems; emails to community representatives (for example; a protocol agreed to via a community consultative committee process); and letterbox drops and doorknocking of affected community members, as appropriate to the circumstances.

The PIRMP must also include any specific information that could be provided to the community so it can minimise the risk of harm. For example; this could include instructions to close windows and doors and remain inside for incidents involving emission of air pollutants, or avoiding the use of water in creeks or rivers affected, or likely to be affected, by a pollutant discharge.

The EPL holder must consider the types of pollution incidents that are likely to occur at the Depot. Examples are; discharge of a pollutant to a stormwater system or creek, or an unplanned release of an air pollutant into the atmosphere. In the example; of the discharge to the stormwater system, the EPL holder must notify premises that are adjacent to the stormwater system or creek and consider any downstream users, such as holders of water irrigation licences, recreational water facilities and oyster growers.

In determining the extent of community notification for potential air emissions, the EPL holder shall consider aspects such as the type of pollutant, prevailing winds, height and magnitude of an emission, as well as the location of any on-site fallout or off-site impacts, the likelihood of the pollutant reaching ground level, and possible impacts on sensitive receptors.

As the location, geography and proximity to neighbours varies for individual depots, each EPL holder must consider the types of pollutant incidents that are likely to occur at the Depot and the extent to which those incidents may have an impact on neighbouring industrial, residential or community premises. Consideration must be given to notifying any sensitive premises in close proximity, such as schools, pre-schools, nursing homes and hospitals.

5.3.7 Minimising Harm to Persons at the Depot
(Reference: POEO(G) Regulation – Clause 98C(1)(j))

A PIRMP must include any actions or arrangements that will be in place to minimise the risk of harm to any persons who will be at the Depot or who are likely to be at the Depot should an incident occur. These can include the activation of evacuation procedures, clearly advertising muster locations to site personnel, or activating visible and / or audible warning alarms.

Consideration shall also be given to having available at short notice suitable consultants to provide expert medical, toxicology or environmental impact advice.

5.3.8 Maps
(Reference: POEO(G) Regulation – Clause 98C(1)(k))

A PIRMP must include a detailed map (or set of maps) showing the location of the Depot, the surrounding area that is likely to be affected by a pollution incident, the location of potential pollutants at the Depot, the location of any stormwater drains at the Depot, and the discharge locations of the stormwater drains to the nearest watercourse or water body.

5.3.9 Actions to be Taken During or Immediately After a Pollution Incident
(Reference: POEO(G) Regulation – Clause 98C(1)(l))

A PIRMP must include detailed descriptions of the actions that will be taken by the licence holder immediately after a pollution incident to reduce or control any pollution. These should include, as a minimum, early warnings, updates and actions to be taken during and after an incident. Actions may include the deployment of spill containment equipment, activation of stormwater shut-off valves, and shutdown of processes or equipment. Consideration must also be given to assessing how any clean-up from an incident will be undertaken, including the procedures to be followed such as the engagement of contractors and use of clean-up equipment like waste disposal tankers and waste disposal facilities.
As the costs associated with a clean-up of an incident could be significant, consideration must also be given to funding arrangements, such as taking out appropriate insurance or having contingency funds available. The cost of any clean-up that is undertaken by emergency response agencies and the EPA will generally be recovered from the company or individual responsible for the pollution incident.

5.3.10 Staff Training
(Reference: POEO(G) Regulation – Clause 98C(1)(m))
A PIRMP must include details on the nature and objectives of any staff training program on implementing the PIRMP. Details of the training program must include the frequency of training and how the records of any training are kept. Suitable training could include toolbox talks, formal staff training on incident management, and undertaking simulated incident exercises, including with emergency services. The training needs to be suitable for the level of risk and likelihood of incidents at the premises.

6. Making PIRMPs Available
(Reference: POEO(G) Regulation – Clause 98D)
A copy of each PIRMP must be maintained at the premises to which the relevant EPL relates, or where the relevant activity takes place, so that it is readily available to those responsible for its implementation and to an authorised officer on request.
Some sections of the PIRMPs must be made publicly available within fourteen (14) days after they have been prepared by:
- placing the PIRMP in a prominent position on a publicly accessible website of the licence holder, and
- providing a copy of the PIRMP, without charge, to any person who makes a written request for a copy if the licence holder does not have a website.
A publicly accessible website could include a website established to promote the licence holder’s activities or products.
The information to be made available to the public:
- must include the procedures for contacting the relevant authorities including the EPA, local council, NSW Ministry of Health, SafeWork NSW, and Fire and Rescue NSW,
- must include the procedures for communicating with the community described in Section 5.3.6, and
- may be exclusive of any personal information within the meaning of the Privacy and Personal Information Protection Act 199812.

7. Testing PIRMPs
(Reference: POEO(G) Regulation – Clauses 98C(1)(n),(o) and (p), 98C(2)(f) and (g), 98E(1) and 98E(2))
The PIRMP must be tested routinely at least once every twelve (12) months. The testing is to be carried out in such a manner as to ensure that the information included in the PIRMP is accurate and up to date, and that the PIRMP is capable of being implemented in a workable and effective manner.
The two (2) usual methods of testing are:
1) undertake desktop simulations, and
2) practical exercises or drills.
Testing must cover all components of the PIRMP, including the effectiveness of training.
The PIRMP must include details such as:
• the manner in which they are to be tested and maintained,
• the dates on which they have been tested and the name of the staff members who carried out the testing, and
• the dates on which they are updated.

The PIRMP must also be tested within one (1) month of any pollution incident occurring in the course of an activity to which the EPL relates to assess, in the light of that incident, whether the information included in the PIRMP is accurate and up to date, and the PIRMP is still capable of being implemented in a workable and effective manner.

8. Implementing PIRMPs

If a pollution incident occurs in the course of an activity at the premises so that material harm to the environment (within the meaning of Section 147) is caused or threatened, the person carrying out the activity must immediately implement any pollution incident management response that was developed to meet the requirements of the POEO Act.
9. Actions to Meet PIRMP Requirements

9.1 Water Pollution Management

9.1.1 Description and Likelihood of Hazards

The environmental goals for Water Pollution Management are:

- preventing water pollution by leachate and sediments,
- detecting water pollution, and
- remediating water pollution.

9.1.2 Pre-emptive Actions to be Taken

The following management methods are used to prevent pollution of water by leachate and sediment:

- leachate barrier system,
- leachate collection system,
- leachate collection dam,
- swale and table drains,
- surface water and sediment dam, and
- leachate, surface and groundwater monitoring.

The leachate barrier and collection systems shall be constructed in accordance with the EPA's *Environmental Guidelines: Solid Waste Landfills, Second Edition, 2016*.

The following methods shall be applied for early detection of groundwater and surface water pollution:

- groundwater monitoring network,
- groundwater monitoring program,
- groundwater assessment program,
- leachate collection dam monitoring program, and
- surface water monitoring program.

The objectives of the groundwater and surface water assessment programs are to identify a failure of the leachate barrier system, and demonstrate that surface water is not contaminated by the landfilling operation.

Groundwater shall be monitored and background concentrations shall be established for analytes identified in the EPL. If changes in concentration levels for any of the indicator parameters are detected, then the affected groundwater monitoring wells shall be re-sampled. Anomalies, after re-sampling, shall be notified to the EPA. The groundwater wells and surface water points across the Depot are strategically located to ensure early detection, through regular sampling and monitoring, of movement of groundwater and surface water contamination. If groundwater or sub-soil contamination is confirmed by the early detection of groundwater pollution, a suitably qualified Environmental Consultant shall be contacted immediately to assess the groundwater contamination and prepare actions to remEDIATE the groundwater to its original quality.

9.1.3 Inventory of Pollutants

The purpose for recording the wastes received (pollutants) is to:

- quantify wastes received,
record the quantities, types and sources of waste received, and
estimate the potential leachate generation.

The objective of quantifying the wastes received at the Depot is to accurately obtain data on the waste quantities, types and sources for reporting and planning purposes.

The objectives of recording the quantities, types and sources of wastes received at the Depot are to enable the effective monitoring of incoming waste, estimate the potential leachate generation from wastes received, and to aid in regulatory reporting requirements.

9.1.4 Safety Equipment

Personal protective equipment (PPE) shall be worn at all times by Depot staff to ensure potential contact with leachate and sediments is minimised when carrying out inspections of the leachate and drainage systems at the Depot.

9.1.5 Contact Details

Whoever becomes aware of the pollution incident must immediately contact the individuals responsible for managing the incident response and the relevant authorities. The person(s) who may become aware of an incident are:

- Council Employee,
- Agent of Council (contractor),
- Employer or Principal (Council),
- Occupier of the Premises (Council), or
- Person carrying out an activity (not being a Council Employee or Agent).

The position titles and 24 hour contact details of individuals responsible for managing the incident response and notifying the relevant authorities are:

- **Team Coordinator Waste Operations** – initial point of contact or
- **Assistant Team Supervisor Waste Operations and Assistant Team Supervisor Recycling Operations** – if Team Coordinator Waste Operations cannot be contacted, and
- **Manager Waste Services** - if Team Coordinator Waste Operations and Team Supervisor Waste Operations cannot be contacted.

In the event that the Team Coordinator Waste Operations, Assistant Team Supervisor Waste Operations, Assistant Team Supervisor Recycling Operations, and Manager Waste Services cannot be contacted then the Council Employee or Agent of Council (Contractor) shall manage the incident response and notify the relevant authorities.

If the incident presents an immediate threat to human health, environment or property then initial contact, with a combat agency, shall be made:

- **Fire and Rescue NSW** on telephone ‘000’, and / or
- **NSW Police** on telephone ‘000’, and / or
- **NSW Ambulance Service** on telephone ‘000’.

After the initial ‘000’ contact has been made, or if the incident does not require an initial combat agency, contact shall be made to notify the relevant authorities in no particular order:

- **EPA Environment Line** – on telephone 131 555,
9.1.6 Communicating with Neighbours and the Local Community

Early warnings and regular updates to owners and occupiers of neighbouring properties who may be affected by a pollution incident shall be notified. The notification mechanism to be employed in the event of an incident is Shoalhaven City Council’s Waste and Recycling Services website. Council’s website address is www.shoalhaven.nsw.gov.au.

The notification shall provide specific information to the neighbouring properties and local community so it can minimise the risk of harm. Information could include instructions to avoid the use of water in creeks or rivers affected, or likely to be affected, by a pollutant discharge.

9.1.7 Minimising Harm to Persons on the Premises

In the event of an incident, actions and arrangements are in place to minimise the risk of harm to persons who are at the premises or are likely to be at the premises.

The actions to be followed, by the Team Coordinator Waste Operations, to minimise the risk of harm to persons are to:

- Follow the instructions outlined in Site Emergency Procedure Manual – West Nowra Recycling and Waste Depot, 28 June 2017, in particular Section 4.3 Emergency Response Guidelines, and
- Contact the appropriate persons and relevant authorities, as per the Pollution Incident Notification Procedure, 6 March 2017.

9.1.8 Maps
A copy of a detailed site plan showing the location of the Depot, and the potential location of leachate and sediments discharge is included as Appendix 4.

9.1.9 Actions to be Taken During or Immediately After a Pollution Incident

In the event of a potential failure of the Depot’s landfill cell’s leachate barrier system the following actions shall be taken during or immediately after identifying the pollution incident:

- Isolate the area, and ensure that there is no access,
- A Groundwater Assessment Program shall be established to determine the extent of the failure,
- The groundwater shall be monitored and analysed, and background concentrations shall be established for all analytes. This shall be carried out by a qualified Environmental Consultant, and
- Any significant changes in concentration levels for any of the indicator parameters over two consecutive reporting periods (quarterly or annually) is detected, then the affected groundwater monitoring well(s) shall be re-sampled as soon as possible. Anomalies, after re-sampling, shall be notified to the EPA’s Environment Line (131 555) immediately, as required by the EPL.

In the event of potential surface water contamination the following actions shall be taken during or immediately after identifying the pollution incident:

- Isolate the area, and ensure that there is no access,
- The EPA’s Environment Line (131 555) shall be notified immediately, as required by the EPL, and
- A written report, to the EPA, detailing the nature and source of the contamination, and any actions taken, and future actions that will be carried out to prevent recurrence.

9.1.10 Staff Training

All Council Employees and any Agents of Council (Contractor) at the Premises shall be trained on the implementation of the PIRMP as follows:

- Existing Council Employees – during the regular toolbox meetings,
- New Council Employees – as part of the employee’s induction at the Premises,
- Existing Agents of Council (Contractors) – during regular Contractor toolbox meetings, and
- New Agents of Council (Contractors) – as part of the contractor’s employee induction process at the Premises.

Refresher training shall be conducted annually. A written record of all Council Employees trained must be kept and maintained, the same applies to all Agents of Council (Contractors). Records may be audited.

9.2. Air Pollution Management

9.2.1 Description and Likelihood of Hazards

The environmental goals for Air Pollution Management are:

- preventing landfill gas emissions,
- detecting landfill gas emissions,
- remediating landfill gas emissions, and
• preventing fires.

9.2.2 Pre-emptive Actions to be Taken

The management techniques used to prevent and control landfill gas emissions and fires are:

• landfill gas containment system,
• extraction and disposal of landfill gas,
• fire prevention, and
• site closure.

Each landfill cell stage shall have a highly impermeable clay cap designed to minimise landfill gas emissions and surface water infiltration. The accumulated landfill gas shall be effectively contained between gas drainage and sealing layers, due to the clay capping, and over time the landfill gas should move laterally through these layers.

The objectives of extracting and disposing of landfill generated gas are to:

• reduce the risk of explosion and fire,
• reduce the contribution to greenhouse gases, and
• lower the level of toxic organic compounds emitted from the landfill.

The opportunities for utilising landfill generated gas is directly dependent on the degree to which the gas is cleaned. The use of landfill generated gas at the Depot already exists:

• Power generation. Small scale gas turbines are used to generate green power for use in the electricity grid.

As the quantities of landfill gas fluctuate over time, other options or combination of options may be used. Ongoing monitoring of landfill gas volumes and disposal methods may be necessary if there is a large buildup of gas.

The following methods shall be applied for the detection of landfill gas:

• surface gas emissions monitoring - the monitoring objective is to demonstrate the effectiveness of the capping design and construction, and
• gas accumulation monitoring - the monitoring objective is to monitor gas build-up which may have the potential to be detrimental.

If the concentration of methane (landfill generated gas) for surface gas is detected to be above 500 parts per million during the landfill surface or building monitoring, the EPA and all relevant authorities shall be notified immediately. Investigation and corrective actions may include:

• repair or replacement of the landfill cover material,
• emissions monitoring to quantify emission rates and help identify the extent of gas loss,
• installation of sub-surface monitoring wells to gauge the extent of any lateral migration gas, and
• adjustment or installation of landfill gas controls to extract and treat gas.

A written assessment of the emissions and management controls implemented, or proposed to be implemented to prevent further emissions, shall be provided to the EPA within the regulatory period required.

The objectives of fire prevention are to:
Minimise emissions to the atmosphere, and
Increase the level of safety at the Depot.

The following minimum control measures shall be addressed to prevent fires:

- Signs shall be erected and displayed at the Depot advising customers that liquid and hazardous wastes are not permitted to be disposed at the site. The weighbridge operator shall also advise customers and carry out inspections of all incoming loads,
- Stockpiles of approved combustible wastes (tyres and green wastes) shall be in piles and windrows no higher than 3 metres and away from working and public areas,
- Landfill cell construction, compaction and covering of waste shall use materials not conducive to a landfill fire,
- All empty drums accepted at the Depot shall be washed clean and punctured in order to not contain any residual chemical fuels,
- All fuels and flammable solvents used for operational purposes shall be stored in suitably ventilated and secure storage area, and
- Waste oil shall be stored within a bund of 110% capacity of the volume of those flammable liquids so that any release of raw or burning fuel will not cause a fire in landfilling areas or impact on stormwater.

The Depot shall be closed, subject to EPA approval, in a manner that minimises the emission of landfill gases, and minimises the production of leachate. The design and construction of the final capping and revegetation layers are intended to decrease the potential for gas emissions and leachate production.

9.2.3 Inventory of Pollutants

The purpose for recording the wastes received (pollutants) is to:

- quantify wastes received,
- record the quantities, types and sources of waste received, and
- manage composting operations and storage of pollutants.

The objective of quantifying the wastes received at the Depot is to accurately obtain data on the waste quantities, types and sources for reporting and planning purposes.

The objectives of recording the quantities, types and sources of wastes received at the Depot are to enable the effective monitoring of incoming waste, minimise the potential risk of fire from wastes received, and to aid in regulatory reporting requirements.

9.2.4 Safety Equipment

Personal protective equipment (PPE) shall be worn at all times by Depot staff to ensure potential contact with landfill gas emissions is minimised when carrying out inspections of the gas extraction system at the Depot.

9.2.5 Contact Details

Whoever becomes aware of the pollution incident must immediately contact the individuals responsible for managing the incident response and the relevant authorities. The person(s) who may become aware of an incident are:

- Council Employee,
- Agent of Council (contractor),
- Employer or Principal (Council),
Occupier of the Premises (Council), or
Person carrying out an activity (not being a Council Employee or Agent).

The position titles and 24 hour contact details of individuals responsible for managing the incident response and notifying the relevant authorities are:

- **Team Coordinator Waste Operations** – initial point of contact or
- **Assistant Team Supervisor Waste Operations** and **Assistant Team Supervisor Recycling Operations** – if Team Coordinator Waste Operations cannot be contacted, and
- **Manager Waste Services** - if Team Coordinator Waste Operations and Team Supervisor Waste Operations cannot be contacted.

In the event that the Team Coordinator Waste Operations, Assistant Team Supervisor Waste Operations, Assistant Team Supervisor Recycling Operations, and Manager Waste Services cannot be contacted then the Council Employee or Agent of Council (Contractor) shall manage the incident response and notify the relevant authorities.

If the incident presents an immediate threat to human health, environment or property then initial contact, with a combat agency, shall be made:

- **Fire and Rescue NSW** on telephone ‘000’, and / or
- **NSW Police** on telephone ‘000’, and / or
- **NSW Ambulance Service** on telephone ‘000’.

After the initial ‘000’ contact has been made, or if the incident does not require an initial combat agency, contact shall be made to notify the relevant authorities in no particular order:

- **EPA Environment Line** – on telephone 131 555,
- **Ministry of Health – Public Health Duty Officer** (Wollongong) – on telephone (02) 4221 6700 or after hours on telephone (02) 4222 5000,
- **SafeWork NSW** - on telephone 13 10 50 or (02) 4428 6700 (Nowra Office),
- **Poisons Information Centre** - on telephone 13 11 26,
- **SES (NSW)** - on telephone 132 500,
- **Endeavour Energy** - on telephone 13 10 03,
- **Shoalhaven Water** - on telephone 1300 662 246,
- **Dial Before You Dig** - on telephone 1100 (freecall),
- **Shoalhaven City Council – Environmental Health Officer** – on telephone (02) 4429 3111 or after hours on telephone (02) 4421 3100,
- **Local Police Station - Nowra** – only if not contacted initially – on telephone (02) 4421 9699 or ‘000’,
- **Local Ambulance Station - Bomaderry** – only if not contacted initially – on telephone 13 12 33 or ‘000’, and
Fire and Rescue NSW – only if not contacted initially – on telephone (02) 4421 4754 or ‘000’.

A copy of the current Pollution Incident Notification Procedure, 6 March 2017 is not included.

9.2.6 Communicating with Neighbours and the Local Community

Early warnings and regular updates to owners and occupiers of neighbouring properties who may be affected by a pollution incident shall be notified. The notification mechanism to be employed in the event of an incident is Shoalhaven City Council’s Waste and Recycling Services website. Council’s website address is www.shoalhaven.nsw.gov.au.

The notification shall provide specific information to the neighbouring properties and local community so it can minimise the risk of harm. Information could include instructions to remain within buildings or close all windows and doors likely to be affected, by a pollutant discharge.

9.2.7 Minimising Harm to Persons on the Premises

In the event of an incident, actions and arrangements are in place to minimise the risk of harm to persons who are at the premises or are likely to be at the premises.

The actions to be followed, by the Team Coordinator Waste Operations, to minimise the risk of harm to persons are to:

- Follow the instructions outlined in Site Emergency Procedure Manual – West Nowra Recycling and Waste Depot, 28 June 2017, in particular Section 4.3 Emergency Response Guidelines, and
- Contact the appropriate persons and relevant authorities, as per the Pollution Incident Notification Procedure, 6 March 2017.

9.2.8 Maps

A copy of a detailed site plan showing the location of the Depot, and the potential locations of landfill gas emissions is included as Appendix 5.

9.2.9 Actions to be taken During or Immediately After a Pollution Incident

In the event of a potential failure of the Depot’s landfill gas collection and extraction systems the following actions shall be taken during or immediately after identifying the pollution incident:

- Isolate the area, and ensure that there is no access,
- Surface gas monitoring of final capped landfill cell surfaces and surrounding buildings shall be carried out as per requirements of the EPL,
- If the concentrations of gas exceed the allowable limits of methane at any point on the landfill cell surface and surrounding buildings, the following actions shall be taken:
  1. Repair or replace the final capping material and layer, and
  2. Adjust or install gas collection and extraction equipment, and
  3. Continuation of ongoing inspection, maintenance, testing and monitoring of whole gas collection and extraction system.

In the event of a potential fire, at the Depot, the following actions shall be taken during or immediately after identifying the pollution incident:

- Isolate the area, and ensure that there is no access,
Stockpiles of combustibles, fuels and flammable solvents shall be inspected on a daily (combustible wastes), weekly (fuels) and quarterly (flammable solvents) basis for fire risk, and

Any fire occurring at the Depot shall be investigated and the causes, damage and impact shall be fully documented. The cause of any fires shall be determined and appropriate work procedures shall be put in place to minimise re-occurrence.

9.2.10 Staff Training

All Council Employees and Agents of Council (Contractor) at the Premises shall be trained on the implementation of the PIRMP as follows:

- Existing Council Employees – during the regular toolbox meetings,
- New Council Employees – as part of the employee’s induction at the Premises,
- Existing Agents of Council (Contractors) – during regular Contractor toolbox meetings, and
- New Agents of Council (Contractors) – as part of the Contractor’s employee induction at the Premises.

Refresher training shall be conducted annually. A written record of all Council Employees trained must be kept and maintained, the same applies to all Agents of Council (Contractors). Records may be audited.
REFERENCES

1. Environment Protection Authority, *Environment Protection Licence Number 5877*


4. State of NSW, as amended by the *Protection of the Environment Operations (General) Amendment (Pollution Incident Response Management Plans) Regulation, 2012*

5. Shoalhaven City Council, *Shoalhaven, Local Environmental Plan (SLEP) (2014)*,


7. State of NSW, *POEO Act – Part 5.7A Duty to Prepare and Implement Pollution Incident Response Management Plans*


13. Shoalhaven City Council, *Pollution Incident Notification Procedure, 6 March 2017*
APPENDICES
APPENDIX 1

Environment Protection Licence (EPL) – NOT INCLUDED
APPENDIX 2

APPENDIX 3

Pollution Incident Notification Procedure – West Nowra Recycling and Waste Facility – NOT INCLUDED
APPENDIX 4

Potential Leachate and Sediments Discharge Plan – West Nowra Recycling and Waste Facility
APPENDIX 5

Potential Landfill Gas Emissions Plan – West Nowra Recycling and Waste Facility