



**Bluegums Landfill  
Odour Management Plan**

Prepared for  
Marlborough District Council

Prepared by  
Tonkin & Taylor Ltd

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## Document Control

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## **Executive summary**

This document addresses Landfill Resource Consent U000950, Air Discharge, Conditions 4 – 11. The main focus of this plan is the prevention of objectionable odours that may result in offsite odours rather than the amelioration of odours to reduce their effect. However this plan incorporates both approaches and also addresses the requirement of Condition 10 of the Air Discharge Consent in respect of provision of remedial measures if the air resource is significantly affected.

This plan supersedes section 4.23.2 of the Landfill management Plan.

## 1 Odour Sources

There are potential sources of odour at the landfill

- General refuse;
- Buried refuse which is then exposed;
- Sewage sludge;
- Special/odorous waste;
- Leachate;
- Landfill gas.
- Other activities

## 2 Procedures to minimise odours

The Landfill Operator will employ all practicable measures that may be necessary, including those outlined in this plan, to minimise unacceptable odours on the Landfill site and to prevent detection of offensive or objectionable odours beyond the boundary of the site.

### 2.1 Odour from General Refuse

The Landfill Manager will, on a daily basis, determine and operate the minimum practicable size of the active fill area/exposed refuse in accordance with Air Discharge Condition 8(b), taking into account:

- Current rate of acceptance;
- Compaction requirements; and
- Health and safety requirements.

A maximum area of exposed refuse at any time of 900m<sup>2</sup> (30m x 30m) will be targeted under normal operational conditions with a maximum limit of up to 2,500m<sup>2</sup> (50m x 50m) when required (e.g. transitioning to a new filling area). The perimeter of the active fill area will be delineated by road cones in order that the area can be controlled and monitored.

The application of daily cover and intermediate cover will be used to minimise the generation of odours and their transmission off site. The Landfill Operator will ensure that sufficient stockpiles of clean fill and sawdust are maintained near the working face for this purpose.

### 2.2 Odour from Previously Buried Refuse

#### 2.2.1 Removing Cover

At the start of each day any nightly soil cover will be removed or partially removed to enable the free flow of leachate and landfill gas between successive layers of deposited refuse. If sawdust or alternative cover systems are used removal may not be necessary. The underlying refuse is potentially odorous.

The Landfill Manager is responsible for ensuring that, when opening up the work face at the start of each day, there will be sufficient persons and equipment ready, available and in working order at all times to undertake the tasks required.

When filling recommences over an area where intermediate capping has been placed, the intermediate capping must be removed before more waste is placed. This will expose old, previously placed and potentially odorous refuse.

The Landfill Manager will minimise the area and duration of exposed previously placed refuse by synchronising the removal of cover with the deposition of new refuse.

If, in the opinion of the Landfill Manager, there is a risk of odours being offensive near the boundary, the amount of cover removed will be the minimum amount required to enable the free flow of leachate and landfill gas. The deodorant spray system will also be activated when the risk of offensive odours beyond the site boundary becomes significant. Hand held backpack spray equipment may also be used to apply deodorant chemical to odorous refuse.

### **2.2.2 Excavating into Old Refuse**

Excavations in refuse will be kept to a minimum. The Landfill Manager will notify council of any such excavation in order that appropriate notification can be provided to the community and other council departments as required.

On occasions, old refuse will need to be excavated e.g. to access pipe work, or install gas laterals.

Before this is carried out, the Landfill Manager will discuss with site staff the procedures to be carried out to ensure that odours are minimised.

Such discussion will include:

- Consideration of alternatives;
- Timing the works to coincide with favourable meteorological conditions i.e. wind speed greater than 10km/hr from the north west to north east quarter;
- Carrying out the work as quickly as possible and in stages to limit the area of the odour source;
- Covering odour sources if works are to be left over night; and
- The use of portable deodorant spray systems and application of deodorant chemicals by spray onto and near the excavation if this is practicable (only for small excavations).
- Activation of the deodorant spray system if, in the opinion of the Landfill Manager, there is a risk of odours being offensive near the boundary.

If excavations into old refuse are to be undertaken the Council will be notified.

## **2.3 Odour from Special/Odoriferous Wastes**

The acceptance of odorous wastes at the landfill will be minimised as far as possible.

Customers who deliver potentially odorous waste are generally known to Council and odour from such wastes will be minimised by requiring the generators of odorous waste to deliver the waste prior to putrefaction, or if appropriate and practicable, treat it to combat odours before delivery. Conditions of acceptance may also include when such wastes are to be delivered, to give the Landfill Operator sufficient time to prepare for receipt of the waste and to bury the waste as soon as practicable after placement in the landfill. The Landfill Operator is also aware of waste types that may be odorous and when such wastes arrive at the weighbridge, the weighbridge operator will alert the machine operator at the tip face that a potentially odorous load is being delivered so that it may be buried immediately.

In the event that an odorous load is unexpectedly deposited at the working face the Landfill Operator will order its immediate burial. Operators and machinery drivers will communicate by radio or cellphone with the Landfill Manager. An operator will notify the Landfill Manager of the carrier and waste type. The Landfill Manager will record this as an environmental incident and follow this up with the waste carrier to prevent recurrence.

If, in the opinion of the Landfill Manager, there is a risk of odours being offensive near the boundary, the deodorant spray system will also be activated. Odours from odorous waste loads may also be minimised by the application of deodorant chemicals. A backpack sprayer and deodorising spray are available at the landfill and will be available for use as necessary.

## **2.4 Odour from Leachate**

Landfill leachate is collected in a drainage system and has not historically been a source of odour at Bluegums Landfill. However odours can be experienced from the leachate pond (which only has leachate in it when there is significant rain) and from the drainage system (manholes etc.) The leachate pond and manholes will be monitored for odour and remedial actions developed and implemented should a significant source of odour be identified.

## **2.5 Odour from Landfill Gas**

Odours originating from landfill gas can generally be controlled by the implementation of landfill gas control systems. Odours will be minimised by progressive construction of capping and construction, maintenance and operation of landfill gas controls in accordance with the Landfill Management Plan, including installation of new gas extraction systems as soon as practicable as the waste volume increases. The landfill gas extraction system will be monitored and maintained to maximise landfill gas extraction and appropriate remedial measures will be implemented if necessary to correct any deficiencies.

All landfill gas collected into the gas system will be treated (burned) at the landfill gas flare. No untreated gas will be vented within 200m of the site boundary in compliance with Air Discharge Condition 7.

## **2.6 Other Activities**

Other activities that may generate odour include burning of waste and composting. These activities are expressly prohibited by the resource consent (Air Discharge conditions 5 and 6) and will not be undertaken at Bluegums landfill.

# **3 Deodorant Spray System**

A permanent fixed deodorant system comprising a series of fogging nozzles installed along the top of the litter net system has been installed at Bluegums Landfill.

This system uses an odour neutralising chemical to ameliorate potentially offensive odours as required.

The system will typically be operated for a period each morning and each evening when the wind speed is, or is forecast to be, 10km/hr or less and blowing from the SW to SE quadrant. The control of operation and times of operation will be refined as familiarity with the operation of the system and its effectiveness is developed.

The system may also be operated in response to receipt of an offsite complaint or the identification of an odour on site or at the site boundary that it is considered has the potential to cause an offsite odour.

The deodorant products used will be odour neutralising as opposed to masking. Prior to use the Safety Data Sheet will be assessed and the product confirmed to be suitable for use at the landfill. The deodorant will be used in accordance with the manufacturer's instructions; at no time will the maximum recommended dose be exceeded.

## 4 Odour Monitoring

All site employees are required to notify the Landfill Manager in the event that, in their opinion, odours are present on site that may give rise to odour beyond the site boundary.

In accordance with Air Discharge condition 9(b), monitoring of odour around the perimeter of the site will be undertaken. The Landfill Operator will undertake monitoring of downwind boundaries for odour movement offsite will be undertaken routinely at least once per day and more frequently if odours are suspected or likely based on site activities being undertaken.

Monitoring for odours around the site will also be undertaken as part of gas well monitoring/adjustment (approximately weekly) undertaken by Council. This involves walking over the landfill to visit each gas well. During this work any unusually strong or unexpected odours (note refuse odour will always be present at and immediately downwind of the active filling area), particularly any odours having the potential to cause odour beyond the site boundary, will be identified and recorded. These odours will be reported to the landfill Operator who will investigate and implement remedial measures if necessary.

Odours will be reported using the intensity scale below and the nature of the odour will also be recorded e.g. 'refuse', 'gas', 'bad eggs' etc.

### Odour Intensity Scale

Odour intensity	Intensity level
Extremely strong	6
Very strong	5
Strong	4
Distinct	3
Weak	2
Very weak	1
Not perceptible	0

## 5 Odour Amelioration Contingency Actions

If a notification of odour is received by the Landfill Operator (either directly or through MDC) at the time of the complaint an immediate investigation into the potential source of odour will be undertaken if this is possible (e.g. safety considerations mean this is not possible at night). The Landfill Operator will cooperate with and assist MDC in any investigation that they undertake at the time of the complaint if requested to do so by MDC. This will include facilitating access to the landfill, subject to safety constraints. If notification is received after the event (or investigation at the time of the complaint is not possible) an investigation will be carried out as far as is possible and relevant as soon as possible.

A similar investigation into the source of any odours identified by monitoring carried out on site (see above) will also be undertaken.

If a source of odour is identified that is likely to be the cause of an odour complaint or which has the potential to cause odour beyond the site boundary this will be ameliorated as soon as possible using one of the techniques set out in this plan.



## 6 Notification and Reporting

If any activity is required to be undertaken that may result in the generation of odours (e.g. excavation into refuse) this activity will be advised to Marlborough District Council at least one day in advance of it being carried out to enable MDC to issue a notice to local residents advising them of the potential for odour.

The Landfill Operator will maintain a record of complaints regarding odours in accordance with Air Discharge condition 11. This will include details of the weather conditions, deliveries of particular (odorous wastes) wastes, any activities or incidents on the landfill that may have resulted in an offsite odour and investigations/actions undertaken. The Landfill Operator will provide a brief report (no more than one page) for each odour complaint notified by MDC, including this information, and this report will be provided to MDC within two working days of the complaint being received by the Landfill Operator. The report will be in a form agreed with MDC.

## 7 Applicability

This report has been prepared for the exclusive use of our client Marlborough District Council, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

Tonkin & Taylor Ltd

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