



Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014

The ash from burning biomass order 2014

Introduction

This order, issued by the Environment Protection Authority (EPA) under clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014 (Waste Regulation), imposes the requirements that must be met by suppliers of ash to which 'the ash from burning biomass exemption 2014' applies. The requirements in this order apply in relation to the supply of ash for application to land as a soil amendment.

1. Waste to which this order applies

- 1.1. This order applies to ash. In this order, ash means the waste generated by burning biomass from agriculture, forestry and sawmilling residues, uncontaminated wood waste and/or organic residues from virgin paper pulp activities.

2. Persons to whom this order applies

- 2.1. The requirements in this order apply, as relevant, to any person who supplies ash that has been generated, processed or recovered by the person.
- 2.2. This order does not apply to the supply of ash to a consumer for land application at a premises for which the consumer holds a licence under the POEO Act that authorises the carrying out of the scheduled activities on the premises under clause 39 'waste disposal (application to land)' or clause 40 'waste disposal (thermal treatment)' of Schedule 1 of the POEO Act.

3. Duration

- 3.1. This order commences on 24 November 2014 and is valid until revoked by the EPA by notice published in the Government Gazette.

4. Generator requirements

The EPA imposes the following requirements on any generator who supplies ash.

Sampling requirements

- 4.1. On or before supplying ash, the generator must:
 - 4.1.1. Prepare a written sampling plan which includes a description of sample preparation and storage procedures for the ash.
 - 4.1.2. Undertake sampling and testing of the ash as required under clauses 4.2 and 4.3 below.

- 4.2. Where the ash is generated as part of a continuous process, the generator must undertake the following sampling:
- 4.2.1. Characterisation of the ash by collecting 20 composite samples of the waste and testing each sample for the chemicals and other attributes listed in Column 1 of Table 1. Each composite sample must be taken from a batch, truckload or stockpile that has not been previously sampled for the purposes of characterisation. Characterisation must be conducted for ash generated and processed during each 2-year period following the commencement of the continuous process; and
 - 4.2.2. Routine sampling of the ash by collecting either 5 composite samples from every 1000 tonnes (or part thereof) processed or 5 composite samples every year (whichever is the lesser); and testing each sample for the chemicals and other attributes listed in Column 1 of Table 1 other than those listed as 'not required' in Column 3. Each composite sample must be taken from a batch, truckload or stockpile that has not been previously sampled for the purposes of routine sampling. However, if characterisation sampling occurs at the same frequency as routine sampling, any sample collected and tested for the purposes of characterisation under clause 4.2.1 may be treated as a sample collected and tested for the purposes of routine sampling under clause 4.2.2.
- 4.3. Where the ash is not generated as part of a continuous process, the generator must undertake one-off sampling of a batch, truckload or stockpile of the ash, by collecting 10 composite samples from every 1000 tonnes (or part thereof) processed and testing each sample for the chemicals and other attributes listed in Column 1 of Table 1. The test results for each composite sample must be validated as compliant with the maximum average concentration or other value listed in Column 2 of Table 1 and the absolute maximum concentration or other value listed in Column 4 of Table 1 prior to the supply of ash.

Chemical and other material requirements

- 4.4. The generator must not supply ash to any person if, in relation to any of the chemical and other attributes of the ash:
- 4.4.1. The concentration or other value of that attribute of any sample collected and tested as part of the characterisation or the routine or one-off sampling of the ash exceeds the absolute maximum concentration or other value listed in Column 4 of Table 1, or
 - 4.4.2. The average concentration or other value of that attribute from the characterisation or one-off sampling of the ash (based on the arithmetic mean) exceeds the maximum average concentration or other value listed in Column 2 of Table 1, or
 - 4.4.3. The average concentration or other value of that attribute from the routine sampling of the ash (based on the arithmetic mean) exceeds the maximum average concentration or other value listed in Column 3 of Table 1.
- 4.5. The absolute maximum concentration or other value of that attribute in any ash supplied under this order must not exceed the absolute maximum concentration or other value listed in Column 4 of Table 1.

Table 1

Column 1	Column 2	Column 3	Column 4
Chemicals and other attributes	Maximum average concentration for characterisation (mg/kg 'dry weight' unless otherwise specified)	Maximum average concentration for routine testing (mg/kg 'dry weight' unless otherwise specified)	Absolute maximum concentration (mg/kg 'dry weight' unless otherwise specified)
1. Mercury	0.5	Not required	1
2. Cadmium	0.5	0.5	1
3. Lead	50	Not required	100
4. Arsenic	10	10	20
5. Chromium (total)	50	50	100
6. Copper	50	20	100
7. Molybdenum	5	Not required	10
8. Nickel	30	30	60
9. Selenium	5	Not required	10
10. Zinc	100	100	200
11. Boron	Not required	Not required	60
12. Electrical Conductivity ¹	NA	NA	NA
13. pH ¹	NA	NA	NA

1. Note that while limits are not included for electrical conductivity and pH these must be tested in each sample and records kept of results.

Test methods

- 4.6. The generator must ensure that any testing of samples required by this order is undertaken by analytical laboratories accredited by the National Association of Testing Authorities (NATA), or equivalent.
- 4.7. The generator must ensure that the chemicals and other attributes (listed in Column 1 of Table 1) in the ash it supplies are tested in accordance with the test methods specified below or other equivalent analytical methods. Where an equivalent analytical method is used the detection limit must be equal to or less than that nominated for the given method below.
- 4.7.1. Test method for measuring the mercury concentration:
- 4.7.1.1. Analysis using USEPA SW-846 Method 7471B Mercury in solid or semisolid waste (manual cold vapour technique), or an equivalent analytical method with a detection limit < 20% of the stated maximum average concentration in Table 1, Column 2 (i.e. < 0.1 mg/kg dry weight).
- 4.7.1.2. Report as mg/kg dry weight.
- 4.7.2. Test methods for measuring chemicals 2 - 10:
- 4.7.2.1. Sample preparation by digesting using USEPA SW-846 Method 3051A Microwave assisted acid digestion of sediments, sludges, soils, and oils.
- 4.7.2.2. Analysis using USEPA SW-846 Method 6010C Inductively coupled plasma - atomic emission spectrometry, or an equivalent analytical method with a detection limit < 10%

of stated maximum concentration in Table 1, Column 2 (i.e. 1 mg/kg dry weight for lead).

4.7.2.3. Report as mg/kg dry weight.

4.7.3. Test methods for measuring the boron concentration:

4.7.3.1. Water soluble boron using a calcium chloride extractable method. Rayment, G.E. and Higginson, F.R. 1992. Method 12C1 or 12C2. In Australian laboratory handbook of soil and water chemical methods, Inkata Press, Australia (or an equivalent analytical method with a detection limit for hot water soluble boron or calcium chloride extractable boron < 10% of stated total concentration).

4.7.3.2. Report as mg/kg dry weight.

4.7.4. Test methods for measuring the electrical conductivity and pH:

4.7.4.1. Sample preparation by mixing 1 part ash with 5 parts distilled water.

4.7.4.2. Analysis using Method 103 (pH) and 104 (Electrical Conductivity) in Schedule B (3): Guideline on Laboratory Analysis of Potentially Contaminated Soils, National Environment Protection (Assessment of Site Contamination) Measure 1999 (or an equivalent analytical method).

4.7.4.3. Report electrical conductivity in deciSiemens per metre (dS/m).

Notification

4.8. On or before each transaction, the generator must provide the following to each person to whom the generator supplies the ash:

- a written statement of compliance certifying that all the requirements set out in this order have been met;
- a copy of the ash from burning biomass exemption, or a link to the EPA website where the ash from burning biomass exemption can be found; and
- a copy of the ash from burning biomass order, or a link to the EPA website where the ash from burning biomass order can be found.

Record keeping and reporting

4.9. The generator must keep a written record of the following for a period of six years:

- the sampling plan required to be prepared under clause 4.1.1;
- all characterisation, routine and/or one-off sampling results in relation to the ash supplied;
- the quantity of the ash supplied; and
- the name and address of each person to whom the generator supplied the ash.

4.10. The generator must provide, on request, the most recent characterisation and sampling (whether routine or one-off or both) results for ash supplied to any consumer of the ash.

4.11. The generator must notify the EPA within seven days of becoming aware that it has not complied with any requirement in clause 4.1 to 4.7.

5. Definitions

In this order:

application or apply to land means applying to land by:

- spraying, spreading or depositing on the land; or
- ploughing, injecting or mixing into the land; or
- filling, raising, reclaiming or contouring the land.

composite sample means a sample that combines five discrete sub-samples of equal size into a single sample for the purpose of analysis.

consumer means a person who applies, or intends to apply, ash to land.

continuous process means a process that produces ash on an ongoing basis.

generator means a person who generates the ash.

transaction means:

- in the case of a one-off supply, the supply of a batch, truckload or stockpile of ash that is not repeated.
- in the case where the supplier has an arrangement with the recipient for more than one supply of ash the first supply of ash as required under the arrangement.

Manager Waste Strategy and Innovation

Environment Protection Authority

(by delegation)

Notes

The EPA may amend or revoke this order at any time. It is the responsibility of each of the generator and processor to ensure it complies with all relevant requirements of the most current order. The current version of this order will be available on www.epa.nsw.gov.au

In gazetting or otherwise issuing this order, the EPA is not in any way endorsing the supply or use of this substance or guaranteeing that the substance will confer benefit.

The conditions set out in this order are designed to minimise the risk of potential harm to the environment, human health or agriculture, although neither this order nor the accompanying exemption guarantee that the environment, human health or agriculture will not be harmed.

Any person or entity which supplies ash should assess whether the material is fit for the purpose the material is proposed to be used for, and whether this use may cause harm. The supplier may need to seek expert engineering or technical advice.

Regardless of any exemption or order provided by the EPA, the person who causes or permits the application of the substance to land must ensure that the action is lawful and consistent with any other legislative requirements including, if applicable, any development consent(s) for managing operations on the site(s).

The supply of ash remains subject to other relevant environmental regulations in the POEO Act and Waste Regulation. For example, a person who pollutes land (s. 142A) or water (s. 120), or causes air pollution through the emission of odours (s. 126), or does not meet the special requirements for asbestos waste (Part 7 of the Waste Regulation), regardless of this order, is guilty of an offence and subject to prosecution.

This order does not alter the requirements of any other relevant legislation that must be met in supplying this material, including for example, the need to prepare a Safety Data Sheet. Failure to comply with the conditions of this order constitutes an offence under clause 93 of the Waste Regulation.