

Appendix 8: Solid and Liquid Waste Management Plan

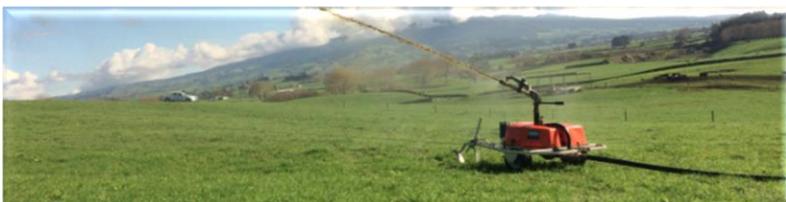
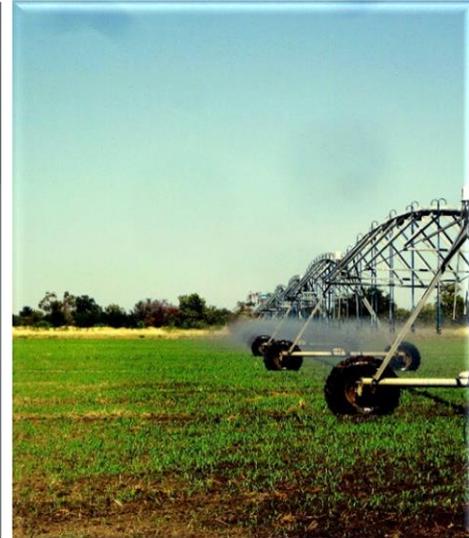
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“Rivendell” Feedlot

Solid Liquid Waste Management Plan

Lot 63 in Deposited Plan 753316

Prepared for: Na & ML Jamieson

June 2021

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1 Introduction

This Solid and Liquid Waste Management Plan has been developed for the construction and the operation of the proposed Feedlot expansion at “Rivendell” 698 Woodstock Road, Woodstock, NSW 2360.

The Feedlot currently has capacity of 470 head. This will be increased to a 2,000-head capacity. The feedlot will comprise the following:

- Upgrade of thirteen (13) existing pens;
- Cattle lanes;
- Hospital pen and cattle yards;
- Feed truck driving and turning lanes;
- Manure stockpile area;
- Carcass composting areas;
- Expansion of existing sediment pond and construction of effluent pond;
- Establishment of a Controlled Drainage Area (installation of drains and contour banks).

Rivendell is located in north-west NSW approximately 20 kilometres east of Inverell. The property is located in a low valley and extends on both sides of the Swan Creek. The proposed Feedlot site is gently sloping. The Feedlot is within the Macintyre River Basin. The closest watercourses to the proposed feedlot site are Main Gully and Swan Brook, located approximately 320m north and 350m south of the site, respectively.

The site is sufficiently separated from sensitive receivers including waterways and groundwater sources to adequately reduce the potential risks associated with solid and liquid waste generated on the site.

The following plan present a preliminary layout of pens and the effluent collection system.

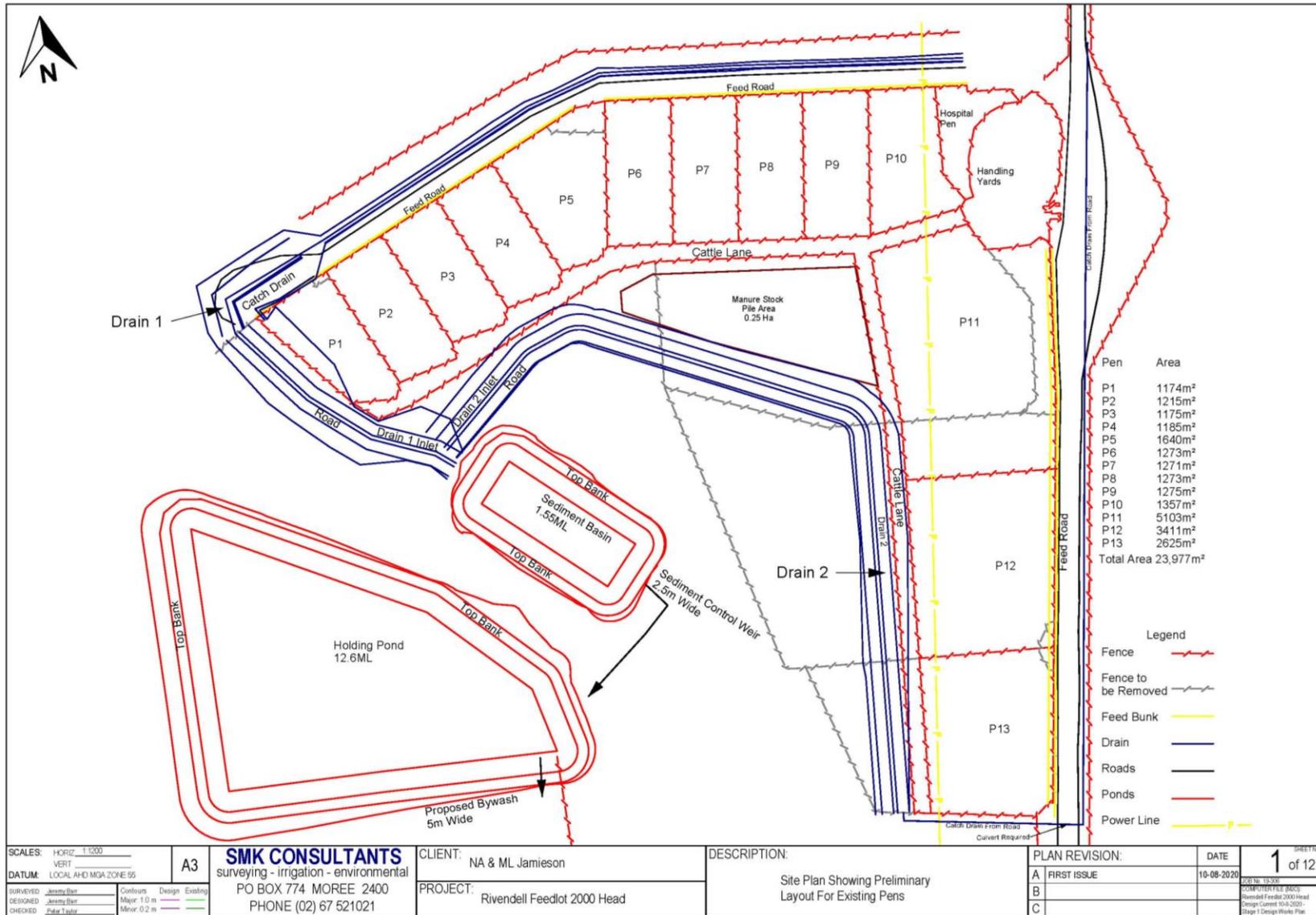


Figure 1: Site Plan

2 Purpose

This Solid and Liquid Waste Management Plan (SLWMP) outlines Rivendell's requirements for managing solid and liquid waste at the feedlot. The objective of this SLWMP is to ensure Rivendell minimises waste related impacts, protects the environment and health and safety of personnel and the community. This will be achieved through responsible handling and disposal of any waste that may be generated during activities, to minimise impacts on local infrastructure.

The objectives are:

- To ensure that all waste material generated on site is handled in a responsible manner, and in accordance with legislative requirements whilst promoting sustainable resource use.
- To establish procedures and management actions consistent with the waste minimisation hierarchy principles of avoid, reduce, reuse, recycle and dispose.
- To increase employee and subcontractor awareness and their obligations to waste management.
- To maximise the reuse of materials during the project such as spoil reuse in backfilling, establishment of earthen bunds, pad and road construction and rehabilitation works.

2.1 Scope

This document is applicable to all wastes generated during the site preparation, construction and operation of the Rivendell feedlot, but not limited to:

- The legislative requirement for the management of wastes;
- The waste management hierarchy;
- Activities resulting in the generation of waste;
- The transfer of wastes within and between properties as well as the external transport of wastes from the site;
- Incident management, emergency response; and,
- Record keeping.

2.2 Regulatory Framework

Table 1 below details the State and commonwealth legislation that relates to the generation, handling and disposal of wastes. The table also details the Australian Standards relevant to waste.

Table 1: State and Commonwealth Legislation Relevant to Waste

| |
|---------------------------------------------------------------------------------------------|
| Commonwealth Legislation |
| <i>Australian Dangerous Goods Code 2007</i> |
| New South Wales Legislation |
| <i>Contaminated Land Management Act 1997</i> |
| <i>Environmental Hazardous Chemicals Act 1985</i> |
| <i>National Environmental Protection Council Act 1985</i> |
| <i>Pesticides Act 1999</i> |
| <i>Protection of the Environment Operations Act 1997 & Amendment Act 2011</i> |
| <i>Protection of the Environment Operations Amendment (Illegal Waste Disposal) Act 2013</i> |
| <i>Protection of the Environment Operations (Waste) Regulations 2014</i> |
| <i>Waste Avoidance and Resource Recovery Act 2001</i> |
| <i>Waste Recycling and Processing Corporation Act 2001</i> |
| <i>Waste Minimisation and Management Act 1995</i> |
| Australian Standards |
| <i>AS1940:2004 – Storage and Handling of Flammable and Combustible Liquids</i> |
| <i>AS1216:2006 – Class Labels for Dangerous Goods</i> |
| <i>AS3790:1994 – The Storage and Handling of Corrosive Substances</i> |
| Guidelines |
| <i>NSW EPA Waste Classification Guidelines 2014</i> |

3 Waste Minimisation

In all cases, the employee and contractors responsible for the construction and operation on the site will be expected to adhere to the legislation above to minimise the amount of waste generated on site, and consequently, achieve the best environmental outcomes.

The following figure presents the hierarchy that should be followed.

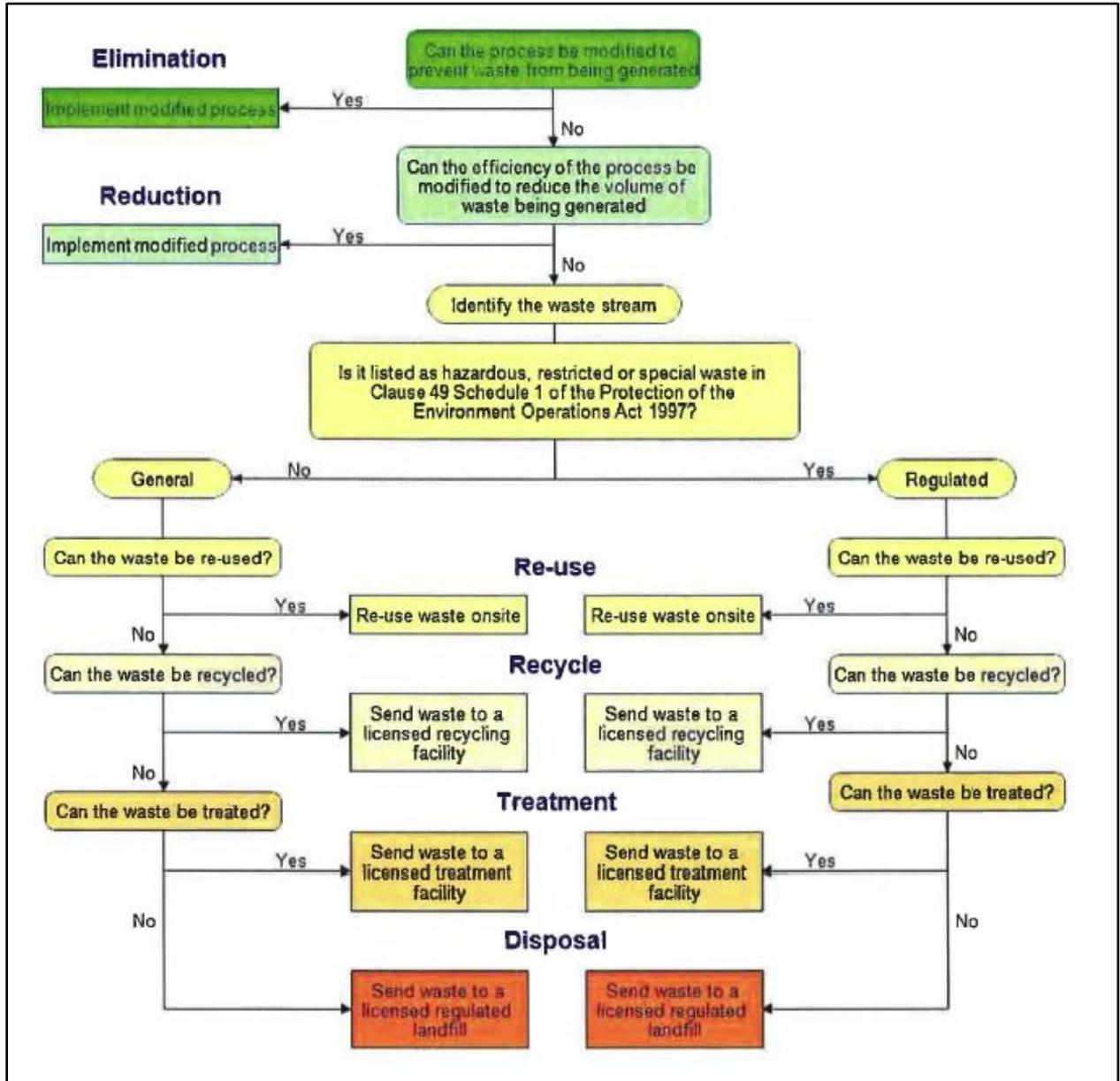


Figure 2: Waste Management Flow Chart

4 Waste Generation and Identification

The waste expected to be generated during the construction and operational phases of the Feedlot are shown in Table 2 and Table 3, respectively.

Table 2: Construction Activities Resulting in Waste Generation

| Waste Type | Source(s) | Management Method | Approximate Quantity |
|---------------------------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| Excavated Waste (Soil) | Earthworks, wastewater ponds, feedlot pens, compost manure pad | Top soil reused where possible, unsuitable soils stockpiled for use in earthen bunds. | N/A - The design results in negligible leftover soil. |
| Steel/Metal offcuts | Pen and yard fences, property fences | Reused where possible, taken to licensed landfill for disposal or recycling. | <30 m ³ |
| General Wastes including putrescibles & organic (food waste), some plastics and paper | Office | Where possible recyclables separated, and disposed of at the local recycling facility, other wastes to be disposed of at a licenced waste management facility. | <30 m ³ |

Table 3: Operations Activities in Waste Generation

| Waste Type | Source(s) | Management Method | Approximate Quantity |
|---------------------------------------------------------------------------------------|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| Feed Spoilage | Feedmill, pen and yards | Placed into windrows for composting. | <100 m ³ |
| Batteries and Tyres | Internal cars only | Taken to a licenced landfill for disposal. | <5 batteries <10 tyres |
| Paints and Resins | Buildings | Disposed of at a licence waste management facility. | <10 L paints and resins |
| General Wastes including putrescibles & organic (food waste), some plastics and paper | Operations, office, feedmill | Where possible recyclables separated and disposed of at the local recycling facility, other wastes to be disposed of at a licenced waste management facility. | <20 m ³ |
| Waste oils and greases | Placed within bunded storage area. | Collected as required by a licensed waste contractor and transported to an appropriately licensed facility for recycling. | <300L |
| Sewage Effluent | Operation office, staff amenities | Treated and disposed of onsite using an existing septic system. | 200 L /day (50 L/day based on 4 people) |
| Effluent | Pens, yards, manure, storage pad | Liquid effluent from the system will flow into the | 12-15 ML |

| Waste Type | Source(s) | Management Method | Approximate Quantity |
|--------------------|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------------------------|
| | | primary wastewater treatment pond for anaerobic treatment and reuse on the irrigation areas. | |
| Manure | Pens, yards, trucks, sediment basin, truck wash | Stockpiled and composted onsite. Compost to be recycled on site for crop production. | 3,000 m ³ of manure/feedstock/sludge |
| Biohazardous Waste | Veterinary products, blood samples, quarantine products, carcasses, out of date chemicals | Disposed of at a certified waste facility. | <100 kg |
| Dead Carcasses | Death by natural causes | To be disposed on site via composting. | <25 per year |

5 Implementation

5.1 Waste Management Tracking

Waste listed as hazardous, restricted or special waste under Schedule 1 of the Protection of the Environment Operations Act 1997 must be disposed of at a licenced and regulated landfill. A copy of Clause 49 Schedule 1 is attached in Appendix 1.

All waste removed from the site requires a receipt from the facility it is disposed at. Disposal should only be at a licenced facility.

5.2 Waste Handling and Management

Waste will be classified and segregated on site, with each waste stream having a determined storage location within the development footprint. Waste stockpiles will be clearly labelled for easy identification, thus ensuring that all waste is clearly defined and isolated from other waste types. Contaminated and non-contaminated waste will be separated by an appropriate distance to minimise the risk of cross-contamination. Stockpiles will be regularly inspected to ensure that waste is properly segregated.

The following mitigations measures will be implemented to minimise onsite and off-site pollution:

- Waste storage containers and areas will be provided at safe and convenient locations;
- Each container will be identified with the type of wastes which may be disposed of in each container. Each container or area will be designed to prevent the escape of materials;
- Recycling bins are emptied when full and materials which may cause land contaminations are not disposed of on site;

- Stockpiles will be separated from sensitive environmental receptors by an appropriate buffer and where necessary will be bunded to reduce sediment laden stormwater runoff;
- Tyre stockpiles will not exceed 50 tonnes at any one time and will be located in a clearly defined area away from the tipping face;
- Bunding will be constructed of material which is impervious to the wastes stored;
- Bunds will be kept in good condition (e.g. no cracks, gaps or leaks);
- Roofed storage facilities will be provided where possible;
- Stormwater captured within bunding will be removed as soon as practicable and disposed of as contaminated water (if required); and
- Empty hydrocarbon and chemical containers will be stored with closures in place on a hardstand or within a bunded area.

Records of classified waste generated at the site, treatment and disposal methods, approved contractors used for transporting and disposing of waste and the location of the facility for accepting the waste will be documented and retained. Written records of waste sampling and classification results shall also be retained, in accordance with EPA's Waste Classification Guidelines (2014). Records will include details such as information on the nature of the waste (classification, name and address of its origin and quantity), and copies of waste dockets/receipts for the waste facility (date, time of delivery, name and address of the facility, its ABN and a contact person).

The Proponent is aware of the relevant legislative requirements for disposal of the waste, including any relevant Resource Recovery Exemptions, as gazetted by EPA from time to time.

5.3 Waste Transport

Waste transported to a lawful facility will be adequately covered to ensure that it does not fall or spill onto the road, and create dust or litter, or damage to other vehicles.

The following measures will be implemented to ensure that any waste leaving the site is transported and disposed of lawfully and in a way that does not pose a risk to human health or the environment:

- Waste will be covered during transportation unless the waste consists solely of waste tyres or scrap metal;
- The vehicle used to transport the waste must be maintained so as to avoid the waste spilling, leaking or otherwise escaping from the vehicle;
- Containers used to transport waste should be checked to ensure they are safely secured to the vehicle; and
- For higher risk wastes (i.e. trackable waste), an EPL would be obtained prior to transportation.

5.4 NSW Waste Avoidance and Resource Recovery Strategy 2014-21

The proposal was considered against the following targets of the NSW Waste Avoidance and Resource Recovery Strategy 2014-21 (EPA 2014):

1. Avoid and reduce waste generation;

2. Increase recycling;
3. Divert more waste from landfill;
4. Manage problem wastes better;
5. Reduce litter;
6. Reduce illegal dumping.

The proposal has identified the waste generated on the feedlot and provided for appropriate methods of managing these using the waste hierarchy to avoid and reduce, reuse or recycle if possible. Items that cannot be safely recycled will be disposed of at a licenced waste facility.

5.5 Waste Storage Requirements

5.5.1 Manure

The manure pad in the pens will be scraped, stockpiled and then removed every 12 weeks (maximum 84 days between) to reduce manure loads to the drainage systems. Frequent, scheduled pen cleaning will ensure the depth of dry manure is maintained at 50mm or less. Manure waste is to be stored on the manure compost pad on the south of the site. The manure is to be stockpiled in windrows as in Figure 3, and turned over regularly to facilitate the composting process.

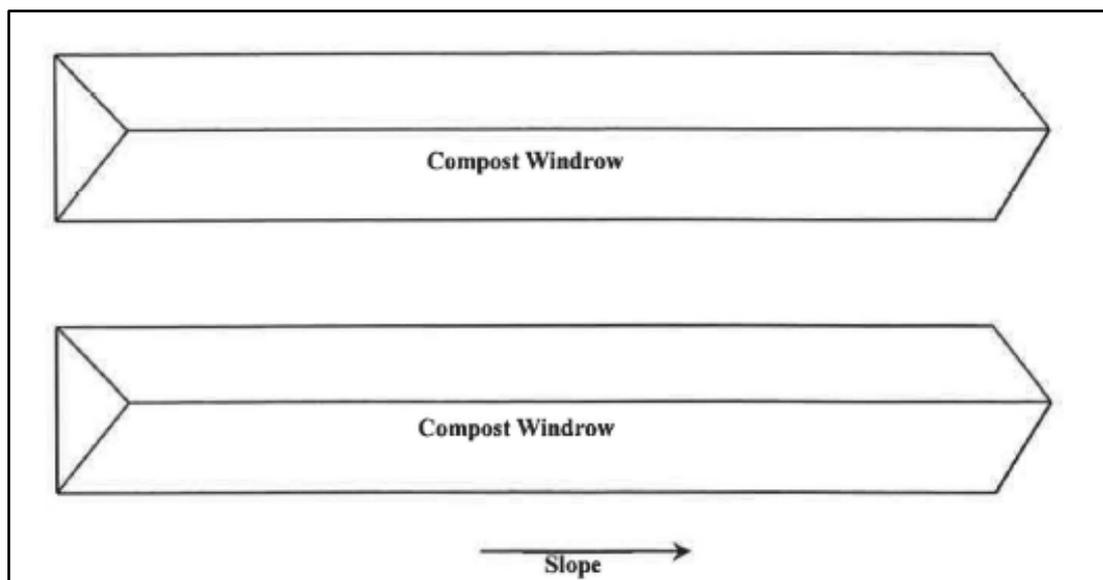


Figure 3: Composting Windrows

Table 4 describes the compost conditions that will be maintained to ensure an efficient composting process that does not create undue dust or odour. These conditions will be monitored on a daily basis or as otherwise required based on the compost windrow's age and process performance.

Individual dead carcasses will be composted onsite. Effective carcass composting requirements as described in the MLA Guideline for Beef Cattle Feedlots include:

- Carcasses should be placed in purpose-built compost bays;
- They should be placed on at least 300mm of the material being used as a carbon source and covered with the same material to a similar depth on all sides;

- The composting area should be protected from scavenging animals;
- A front-end loader should be used to turn the compost pile every 2-3 months; and,
- Compost turning should not occur on windy days, due to dust nuisance.

Table 4: Compost Conditions Recommended by the National Beef Cattle Feedlot Guidelines

| Parameter | Acceptable Range | Optimum Range |
|-----------------------------|------------------|---------------|
| Carbon:Nitrogen | 15:1 – 40:1 | 25:1 – 30:1 |
| Moisture Levels (%) | 45 – 65 | 50 – 60 |
| Oxygen Levels (%) | >5 | >5 |
| pH | 5.5 – 8.0 | 5.5 – 8.0 |
| Temperature (°C) | 40 – 65 | 55 – 60 |
| Particle Size Diameter (mm) | 5 – 50 | 5 – 25 |

5.5.2 Wastewater Treatment

All ponds will have compacted clay lining. All ponds will possess 1:3 sloped batters and include a crest that can be accessed by a body truck so that sludge can be removed using an excavator or front-end loader. Sludge from the sediment basin and drainage systems will be scraped up and added to the manure stockpile for composting.

The treated wastewater in the holding pond will be used on an irrigable area of 12 ha of cultivated land. Effluent will be applied via spray irrigation over 10 Ha and using a tractor-drawn irrigator over an area of 2 Ha. Improper irrigation management may lead to contamination of the local groundwater aquifer by way of nutrient leaching. To minimise the risks of irrigating with wastewater, irrigation rates and frequencies can be closely monitored to account for leaching fractions and nutrient balance.

To ensure the reuse of effluent is undertaken in a sustainable manner, the following measures should be implemented:

- Soil moisture should be checked prior to application to ensure the soil profile is not over wet;
- Volume of treated wastewater applied to the irrigation paddock will be recorded;
- Physical and chemical properties of the soils of the irrigation paddock will be recorded;
- Active plant growth should be maintained;
- Organic matter content should be increased to maximise nutrient holding capacity; and
- Crop should be harvested to increase nutrient removal.

5.5.3 General Waste

General waste from the site (including putrescibles and organics (food waste), some plastics and paper) is to be placed in the skip bin, which will be taken to a licenced waste management facility and emptied on a regular basis.

5.5.4 Construction Waste

Construction waste is to be separated and stockpiled, where possible, into waste type (e.g. Steel, plastic, timber, organic). Where possible, waste is to be reused or recycled in the first instance. In the second instance, waste is to be transported to a licenced waste management facility for disposal.

5.5.5 Hazardous Waste

Biohazardous waste is to be contained in one area of the site. All needles are to be disposed of in a certified sharps disposal container. Biological waste and veterinary waste are to be removed from the site by a certified agent. Any application equipment to be cleaned after use in accordance with the product label and or industry guidelines (ensuring soil, groundwater and surface water are not contaminated). Empty chemical, drug, antibiotic, vaccine and disinfectant containers are to be disposed of at an appropriately licensed waste management facility. Unused chemicals, spilt product or contaminated materials are to be disposed of in a manner approved by the Environment Protection Authority.

5.6 Environmental Monitoring

5.6.1 Surface Water

It is expected that conditions requiring surface water monitoring will be detailed within the POEO Licence, in the event that the proposal is approved.

However, surface waters should generally be analysed several times before effluent irrigation (upstream and downstream of the effluent reuse site), following storms and during high flows. In the event of approval, a sampling program will be developed in accordance with licensing requirements.

Monitoring would be conducted in a manner consistent with the sample collection, handling and preservation principles enunciated in the current version of Standard Methods for the Examination of Water and Wastewater (APHA, 1998). Monitoring samples would be analysed for water pollutants by the methods set out in the DEC's Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (DEC 2004).

As a minimum, attributes that will be measured in surface waters will include:

- pH
- EC (dS/m)
- thermotolerant coliforms (cfu/100 mL)
- BOD5 (mg/L)
- N: total, oxidised nitrogen and ammonia (mg/L)
- P: total and plant-available (mg/L).

5.6.2 Groundwater

The effluent guidelines state that *'Groundwater need only be monitored if it is within 10 metres of the ground surface and/or if the existing groundwater quality is at risk from the effluent irrigation scheme.'*

Given that the property is dominated by clay-based soils which have relatively impermeable qualities, and that based on available data, there are no shallow groundwater reserves (<10m) in the area, it is not considered necessary to implement a groundwater monitoring program. However, a groundwater monitoring program would be developed if required by the EPA, in accordance the licensing requirements.

5.6.3 Soil

It is expected that conditions requiring monitoring will be detailed within the POEO Licence. However, soils monitoring should, at a minimum, include the following parameters:

Effluent Reuse Paddocks:

Prior to Application

| | | |
|--------------------------------|---------|---------------------|
| Available Phosphorous | mg/kg | |
| Cation Exchange Capacity | Cmol/kg | |
| Chloride | mg/kg | |
| Conductivity | us/cm | |
| Exchangeable Calcium | Cmol/kg | |
| Exchangeable Magnesium | Cmol/kg | |
| Exchangeable Potassium | Cmol/kg | |
| Exchangeable Sodium | Cmol/kg | |
| Exchangeable Sodium Percentage | % | |
| Nitrate | mg/kg | |
| Nitrogen (total) | mg/kg | Topsoil sample only |
| Organic Carbon | % | Topsoil Sample only |
| pH | | |
| Sodium Absorption Ratio | | |

Every Three (3) Years

| | |
|------------------------------|-------------------|
| Aggregate Stability | As appro. |
| Bulk Density | kg/m ³ |
| Phosphorus Sorption Capacity | kg/ha |

Manure Reuse Paddocks:

Prior to Application:

| | |
|--------------------------------|-------------------|
| Aggregate Stability | As appro. |
| Available Phosphorous | mg/kg |
| Bulk Density | kg/m ³ |
| Cation Exchange Capacity | Cmol/kg |
| Chloride | mg/kg |
| Conductivity | us/cm |
| Exchangeable Calcium | Cmol/kg |
| Exchangeable Magnesium | Cmol/kg |
| Exchangeable Potassium | Cmol/kg |
| Exchangeable Sodium | Cmol/kg |
| Exchangeable Sodium Percentage | % |
| Nitrate | mg/kg |

| | | |
|------------------------------|-------|---------------------|
| Nitrogen (total) | mg/kg | Topsoil sample only |
| Organic Carbon | % | Topsoil Sample only |
| pH | | |
| Phosphorus Sorption Capacity | kg/ha | |
| Sodium Absorption Ratio | | |

5.7 Roles and Responsibilities

The roles and responsibilities pertaining to this plan are highlighted in Table 5.

Table 1: Responsibilities under the SLWMP

| Position | Responsibilities |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Manager | <p>Ensure that this SLWMP is implemented and that each type of waste is disposed of properly;</p> <p>Ensure that all personnel are aware of and adhere to SLWMP procedures;</p> <p>Carry out staff training and induction to make staff aware of their obligations under the SLWMP;</p> <p>Review SLWMP annually and additionally when changes occur (including any legislative changes);</p> <p>Ensure that testing of the treated wastewater and utilisation area occurs prior to sludge/solids being applied and at the end of each cropping sequence;</p> <p>The effluent quality should be monitored quarterly;</p> <p>Soil samples of the irrigation area should be taken yearly; with additional bulk aggregate stability and bulk density analyses carried out every 3 years; and</p> <p>Sample the wastewater holding pond in the event of an overtop event.</p> |
| Farm Workers | <p>Ensure that manure is cleaned at least every 12 weeks, and maintained below 50mm dry manure;</p> <p>Undertake weather monitoring program to ensure odour does not carry to sensitive receptors through wind;</p> <p>Monitoring of compost moisture levels and ensure that these levels are optimal to reduce dust and increase composting efficiency;</p> <p>Turn compost windrows, but only in low wind conditions and when moisture levels are optimal;</p> <p>Ensure that compost is spread on cultivation paddocks only when wind conditions are favourable;</p> <p>Monitor compost piles for presence of vermin;</p> <p>Monitoring of the water levels in the sediment and effluent ponds on a weekly basis; and</p> <p>Monitor irrigation schedule to ensure that the irrigation paddock is not saturated with water.</p> |
| All Employees and Contractors | <p>Any cracks or leaks in bunding or dam/pond walls are reported; and</p> <p>Any odours coming from wastewater, compost manure pad and irrigation paddocks are reported.</p> |

5.8 Training and Induction

All employees and contractors entering the site to undertake work activities will be inducted prior to commencing work. This will ensure that they are aware of their obligations under the SLWMP. Re-training will be undertaken if there are any changes to the procedures outlined

in this plan, or if there are any non-conformances to procedures noted by management or external authorities. Records of training will be kept onsite for a minimum of five years.

5.9 Incident and Emergency Management

Materials and waste related incidents should be recorded. Spill kits will be made available onsite.

5.9.1 Mass Death

In an event of a mass death occurs at the sites, then the National AUSVET management plan for the same will be invoked. People that would need to be advised about the mass death issue are the Chief Vet and the Australian Quarantine Inspection Services (AQIS).

The site will be a secure quarantine facility. Entry will be appointment only and the facility will be designed to limit entry by the general public. The site will be fenced with a 5-barb boundary fence with an electric fence offset from this main fence.

All workers on the site will sign in and out each day. All contractors will be 'approved' contractors. An office will be located prominently at the main access road. The office will be manned during operating hours.

5.9.2 Incident Reporting

If a spill or an environmental incident occurs all relevant people must be notified. Pollution incidents that cause or threaten material harm to the environment must be notified to each of the following authorities:

- The appropriate regulatory authority (ARA)
- The Environment Protection Authority (EPA) if they are not the ARA;
- The Ministry of Health
- The Workcover Authority
- The local authority, e.g. the local council, if this is not the ARA;
- Fire and Rescue NSW.

If adequate resources are not available to contain material released in a pollution incident and it threatens public health, property or the environment, Fire and Rescue NSW, NSW Police and the NSW Ambulance Service should be contacted for emergency assistance - phone 000.

5.10 Document Review

This SLWMP applies current management practices, guidelines and policies and will be reviewed annually and when circumstance change that may affect the content of this plan.

6 References

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Appendix A: Soil Test Results



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ANALYSIS REPORT SOIL

| | |
|------------------------------------------------------------------------|------------------------------------------|
| PROJECT NO: EW200587 | Date of Issue: 12/05/2020 |
| Customer: SMK CONSULTANTS | Report No: 1 |
| Address: PO BOX 774 PO Box 774 Moree NSW 2400 MOREE NSW 2400 | Date Received: 4/05/2020 |
| Attention: Marie Duffy | Matrix: Soil |
| Phone: 0421 659 017 | Location: 19-306 Rivendell Feedlo |
| Fax: 6752 5070 | Sampler ID: Client |
| Email: marie@smk.com.au | Date of Sampling: 24/04/2020 |
| | Sample Condition: Acceptable |

Results apply to the samples as submitted. All pages of this report have been checked and approved for release.

Signed: **Stephanie Cameron**
Laboratory Operations Manager



East West is certified by the Australian-Asian Soil & Plant Analysis Council to perform various soil and plant tissue analysis. The tests reported herein have been performed in accordance with our terms of accreditation.

This report must not be reproduced except in full and EWEA takes no responsibility of the end use of the results within this report.

This analysis relates to the sample submitted and it is the client's responsibility to make certain the sample is representative of the matrix to be tested.

Samples will be discarded one month after the date of this report. Please advise if you wish to have your sample/s returned.



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Issue No: 3
Issued By: S. Cameron
Date of Issue: 16/12/2019

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ANALYSIS REPORT

PROJECT NO: EW200587

Location: 19-306 Rivendell Feedlot

| | | | | | CLIENT SAMPLE ID | | | |
|------------------------------|--------------------|------------------|---------|------|------------------|----------|--|--|
| | | | | | 19-306-2 | 19-306-3 | | |
| | | | | | DEPTH | | | |
| | | | | | 0-100mm | 0-100mm | | |
| Test Parameter | Method Description | Method Reference | Units | LOR | 200587-1 | 200587-2 | | |
| Aggregate Stability | Physical | USDA | % | na | 31.9 | 36.4 | | |
| Bulk Density | Cylinder | ASTMF 1815-97 | g/cm3 | na | 1.2 | 1.2 | | |
| Chloride Soluble | Electrode | FMS-05 | mg/kg | 2 | 9.98 | 20.2 | | |
| Electrical Conductivity | Electrode | R&L 3A1 | dS/m | 0.01 | 0.06 | 0.21 | | |
| Total N (LECO) | LECO | R&L 7A5 | mg/kg | 50 | 1381 | 1874 | | |
| pH | Electrode | PMW-04 | units | na | 6.97 | 5.40 | | |
| Extractable Nitrate-N | H2O/UV-Vis | FMS-08 | mg/kg | 0.5 | 10.7 | 93.7 | | |
| Organic Carbon (LECO) | LECO | R&L 6B3 | % | 0.05 | 1.80 | 1.82 | | |
| Phosphorus Buffer Index | UV-Vis | FMS-12 | mg/kg | na | 140 | 248 | | |
| Phosphorus (Colwell) | Bicarb/UV-Vis | R&L 9B1 | mg/kg | 1 | 71.9 | 41.5 | | |
| Phosphorus Sorption Capacity | Calc | FMS-12 | mg/kg | na | 651 | 844 | | |
| Phosphorus Sorption Capacity | Calc | na | kg/ha | na | 6507 | 8441 | | |
| Sodium Adsorption Ratio | Calc | SAR | na | na | 1.7 | 1.9 | | |
| Exchangeable Potassium | NH4Cl/ICP | R&L 15A1 | mg/kg | 10 | 264 | 72.7 | | |
| Exchangeable Calcium | NH4Cl/ICP | R&L 15A1 | mg/kg | 20 | 3961 | 269 | | |
| Exchangeable Magnesium | NH4Cl/ICP | R&L 15A1 | mg/kg | 10 | 1615 | 50.8 | | |
| Exchangeable Sodium | NH4Cl/ICP | R&L 15A1 | mg/kg | 10 | 43.3 | 20.1 | | |
| Exchangeable Potassium | R&L 15A1 | R&L 15A1 | cmol/kg | na | 0.68 | 0.19 | | |
| Exchangeable Calcium | R&L 15A1 | R&L 15A1 | cmol/kg | na | 19.8 | 1.35 | | |
| Exchangeable Magnesium | R&L 15A1 | R&L 15A1 | cmol/kg | na | 13.5 | 0.42 | | |
| Exchangeable Sodium | R&L 15A1 | R&L 15A1 | cmol/kg | na | 0.19 | 0.09 | | |
| ECEC | Calculation | PMS-15A1 | cmol/kg | na | 34.1 | 2.04 | | |
| Ca/Mg Ratio | Calculation | PMS-15A1 | cmol/kg | na | 1.47 | 3.18 | | |
| K/Mg Ratio | Calculation | PMS-15A1 | cmol/kg | na | 0.05 | 0.44 | | |
| Exchangeable Potassium % | Calculation | PMS-15A1 | % | na | 1.98 | 9.13 | | |
| Exchangeable Calcium % | Calculation | PMS-15A1 | % | na | 58.0 | 65.9 | | |

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results you can rely on

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PROJECT NO: EW200587

Location: 19-306 Rivendell Feedlot

| | | | | | CLIENT SAMPLE ID | | | |
|--------------------------|--------------------|------------------|-------|-----|------------------|----------|--|--|
| | | | | | 19-306-2 | 19-306-3 | | |
| | | | | | DEPTH | | | |
| | | | | | 0-100mm | 0-100mm | | |
| Test Parameter | Method Description | Method Reference | Units | LOR | 200587-1 | 200587-2 | | |
| Exchangeable Magnesium % | Calculation | FMS-15A1 | % | na | 39.4 | 20.7 | | |
| Exchangeable Sodium % | Calculation | FMS-15A1 | % | na | 0.55 | 4.28 | | |
| Soluble Calcium | 1:5 soil/H2O/ICP | FMS-29 | mg/kg | 1 | 35.5 | 60.0 | | |
| Soluble Magnesium | 1:5 soil/H2O/ICP | FMS-29 | mg/kg | 1 | 15.4 | 31.0 | | |
| Soluble Sodium | 1:5 soil/H2O/ICP | FMS-29 | mg/kg | 1 | 57.2 | 89.0 | | |

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Soils are air dried at 40°C and ground <2mm.

NB: LOR is the Lowest Obtainable Reading.

DOCUMENT END



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Appendix A: Clause 49 Schedule 1 – Waste Management and Pollution Control Regulation

Protection of the Environment Operations Act 1997 No 156 [NSW]
Schedule 1 Scheduled activities

| Column 1 Activity | Column 2 Criteria |
|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| transportation of category 2 trackable waste (other than tyres) | involves the transportation of more than 200 kilograms of category 2 trackable waste in any load |

Part 3 Definitions

Division 1 Waste classifications

49 Definitions of waste classifications

(1) In this Schedule:

general solid waste (non-putrescible) means waste (other than special waste, hazardous waste, restricted solid waste, general solid waste (putrescible) or liquid waste) that includes any of the following:

- (a) glass, plastic, rubber, plasterboard, ceramics, bricks, concrete or metal,
- (b) paper or cardboard,
- (c) household waste from municipal clean-up that does not contain food waste,
- (d) waste collected by or on behalf of local councils from street sweeping,
- (e) grit, sediment, litter and gross pollutants collected in, and removed from, stormwater treatment devices or stormwater management systems, that has been dewatered so that it does not contain free liquids,
- (f) grit and screenings from potable water and water reticulation plants that has been dewatered so that it does not contain free liquids,
- (g) garden waste,
- (h) wood waste,
- (i) waste contaminated with lead (including lead paint waste) from residential premises or educational or child care institutions,
- (j) containers, having previously contained dangerous goods, from which residues have been removed by washing or vacuuming,
- (k) drained oil filters (mechanically crushed), rags and oil absorbent materials that only contain non-volatile petroleum hydrocarbons and do not contain free liquids,
- (l) drained motor oil containers that do not contain free liquids,
- (m) non-putrescible vegetative waste from agriculture, silviculture or horticulture,
- (n) building cavity dust waste removed from residential premises, or educational or child care institutions, being waste that is packaged securely to prevent dust emissions and direct contact,
- (o) synthetic fibre waste (from materials such as fibreglass, polyesters and other plastics) being waste that is packaged securely to prevent dust emissions, but excluding asbestos waste,
- (p) virgin excavated natural material,
- (q) building and demolition waste,
- (r) asphalt waste (including asphalt resulting from road construction and waterproofing works),
- (s) biosolids categorised as unrestricted use, or as restricted use 1, 2 or 3, in accordance with the criteria set out in the *Biosolids Guidelines*,

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Current version valid from 1.12.2015 to date (generated on 9.12.2015 at 13:15)

Protection of the Environment Operations Act 1997 No 156 [NSW]
Schedule 1 Scheduled activities

- (t) cured concrete waste from a batch plant,
- (u) fully cured and set thermosetting polymers and fibre reinforcing resins,
- (v) fully cured and dried residues of resins, glues, paints, coatings and inks,
- (w) anything that is classified as general solid waste (non-putrescible) pursuant to an EPA Gazettal notice,
- (x) anything that is classified as general solid waste (non-putrescible) pursuant to the Waste Classification Guidelines,
- (y) any mixture of anything referred to in paragraphs (a)–(x).

general solid waste (putrescible) means waste (other than special waste, hazardous waste, restricted solid waste or liquid waste) that includes any of the following:

- (a) household waste containing putrescible organics,
- (b) waste from litter bins collected by or on behalf of local councils,
- (c) manure and nightsoil,
- (d) disposable nappies, incontinence pads or sanitary napkins,
- (e) food waste,
- (f) animal waste,
- (g) grit or screenings from sewage treatment systems that have been dewatered so that the grit or screenings do not contain free liquids,
- (h) anything that is classified as general solid waste (putrescible) pursuant to an EPA Gazettal notice,
- (i) anything that is classified as general solid waste (putrescible) pursuant to the Waste Classification Guidelines,
- (j) a mixture of anything referred to in paragraphs (a)–(i).

hazardous waste means waste (other than special waste or liquid waste) that includes any of the following:

- (a) anything that is classified as:
 - (i) a substance of Class 1, 2, 5 or 8 within the meaning of the *Transport of Dangerous Goods Code*, or
 - (ii) a substance to which Division 4.1, 4.2, 4.3 or 6.1 of the *Transport of Dangerous Goods Code* applies,
- (b) containers, having previously contained:
 - (i) a substance of Class 1, 3, 4, 5 or 8 within the meaning of the *Transport of Dangerous Goods Code*, or
 - (ii) a substance to which Division 6.1 of the *Transport of Dangerous Goods Code* applies,
 from which residues have not been removed by washing or vacuuming,
- (c) coal tar or coal tar pitch waste (being the tarry residue from the heating, processing or burning of coal or coke) comprising more than 1% (by weight) of coal tar or coal tar pitch waste,
- (d) lead-acid or nickel-cadmium batteries (being waste generated or separately collected by activities carried out for business, commercial or community services purposes),
- (e) lead paint waste arising otherwise than from residential premises or educational or child care institutions,
- (f) anything that is classified as hazardous waste pursuant to an EPA Gazettal notice,

Protection of the Environment Operations Act 1997 No 156 [NSW]
Schedule 1 Scheduled activities

(g) anything that is classified as hazardous waste pursuant to the Waste Classification Guidelines,

(h) a mixture of anything referred to in paragraphs (a)–(g).

liquid waste means any waste (other than special waste) that includes any of the following:

(a) anything that:

- (i) has an angle of repose of less than 5 degrees above horizontal, or
- (ii) becomes free-flowing at or below 60°C or when it is transported, or
- (iii) is generally not capable of being picked up by a spade or shovel,

(b) anything that is classified as liquid waste pursuant to an EPA Gazettal notice.

restricted solid waste means any waste (other than special waste, hazardous waste or liquid waste) that includes any of the following:

(a) anything that is classified as restricted solid waste pursuant to the Waste Classification Guidelines,

(b) anything that is classified as restricted solid waste pursuant to an EPA Gazettal notice.

special waste means any of the following:

- (a) clinical and related waste,
- (b) asbestos waste,
- (c) waste tyres,
- (d) anything that is classified as special waste pursuant to an EPA Gazettal notice.

(2) Despite subclause (1), in this Schedule, any waste that is classified as one of the following classes of waste, in accordance with an immobilised contaminants approval granted under Part 10 of the *Protection of the Environment Operations (Waste) Regulation 2014*, is taken to be waste of that class:

- (a) general solid waste (non-putrescible),
- (b) general solid waste (putrescible),
- (c) hazardous waste,
- (d) restricted solid waste,
- (e) special waste.

Division 2 Other definitions

50 Other definitions

(1) In this Schedule:

animal waste includes dead animals and animal parts and any mixture of dead animals and animal parts.

asbestos means the fibrous form of those mineral silicates that belong to the serpentine or amphibole groups of rock-forming minerals, including actinolite, amosite (brown asbestos), anthophyllite, chrysotile (white asbestos), crocidolite (blue asbestos) and tremolite.

asbestos waste means any waste that contains asbestos.

Australian Explosives Code means the document entitled *Australian Code for the Transport of Explosives by Road and Rail*, published by the Commonwealth Department of Infrastructure, Transport, Regional Development and Local Government and as in force from time to time.