EMS0007

Waste Management Plan

Borg Panels

124 Lowes Mount Road, Oberon NSW

Borg Panels Pty Ltd

18 January 2021

This document should be read in conjunction with EMS0060 Construction Environment Management Plan, EMS0001 Operational Environment Management Plan, EMS0006 Surface Water Management Plan, SEP Waste Storage Areas and SEP Stockpile Map

Revision History

Rev No.	Revision Date	Author / Position	Comments	Details	Authorised	
					Name / Position	Signature
0	24/11/17	Carly McCormack Planning and Environmental Officer		Final	Victor Bendevski Environmental and Regulatory Compliance	
1	02/11/18	Jacqui Blomberg Environmental Manager	Update 2.4 Environment Protection Licence condition L3 & L7	Review as per SSD7016 C10(d)	Victor Bendevski Environmental and Regulatory Compliance	
1	07/12/18	J Blomberg Environmental Manager	No updates necessary, remains as Rev. 1	Review as per SSD7016 C10(a) MOD 1 granted 20/11/18		
2	02/10/19	J Blomberg Environmental Manager	Update Section 2.4 to include for EPL waste			
3	18/01/21	J Blomberg Environmental Manager	Update as per SSD 7016 condition B52		V Bendevski Environmental and Regulatory Compliance	

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1 Introduction

1.1 Background

Borg Panels operates a medium density fibreboard (MDF) and particleboard facility in Oberon NSW manufacturing a range of Customwood MDF and particleboard products including:

- Standard MDF;
- Moisture resistant MDF;
- E0 (low formaldehyde emitting) MDF;
- Ultraprime MDF mouldings;
- Standard particleboard;
- Moisture resistance particleboard;
- Decorative laminated MDF and particleboard; and
- Treated paper for the lamination of MDF and particleboard

On 29 May 2017 Development Consent SSD 7016 was granted by the Minister for Planning to construct a particleboard manufacturing facility, modify the existing MDF manufacturing facility and undertake general site works (the Project) at the existing site located at 124 Lowes Mount Road, Oberon.

Conditions contained within the Consent require Borg to provide for the ongoing environmental management of the Development. Though initially developed to satisfy conditions B51, C4 and C9, this Waste Management Plan has been updated as per condition B52 that states:

> *Prior to commencement of operation of the Project, the Applicant must update the WMP required under Condition B51 to incorporate the Project and its management to the satisfaction of the Secretary. The updated plan must be prepared in accordance with the requirements of Condition B51, and must incorporate the following:*
> *(a) details of the materials to be reused and recycled for the Project; and*
> *(b) details of the procedures for managing, handling and accepting materials to be reused or recycled on-site for the Project.*

1.2 Purpose and Objectives

The purpose of this WMP is to provide the management and performance requirements related to waste at the Borg Panels facility, and includes:

- Requirements for management of waste for operations at the facility as stipulated by regulatory approvals for the Development;
- Description of potential sources of wastes and risks related to waste management;
- Detail the ‘waste’ materials to be reused/recycled for production;
- Detail procedures for managing, handling and accepting the materials to be reused/recycled;
- Description of the environmental controls to meet objectives, and regulatory approval requirements; and
- Overview of the environmental monitoring programs associated with environmental controls and management actions.

The objectives of the WMP are to:

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

1.3 Structure of this Waste Management Plan

This WMP has been developed to manage waste generated by the facility and to satisfy the requirements set out in conditions of Development Consent SSD 7016, and includes information on the following:

- Section 2 – Legislative and Regulatory Compliance
- Section 3 – Process Overview
- Section 4 – Urban Wood Residue/Reuse Material
- Section 5 – Implementation
- Section 6 – Incidents and Complaints Management
- Section 7 – Monitoring and Review

1.4 Approval of the WMP

The WMP was submitted to the Secretary of the (then) Department of Planning and Environment (DP&E) on 30 November 2017. The Department reviewed the Plan and were satisfied it met the terms of the relevant conditions of consent. Accordingly, the WMP was approved by the Department on 21 December 2017.
Any subsequent versions of the WMP will be submitted to DPIE for approval as per SSD 7016 Condition C10 as is necessary.

1.5 Training

Training and Assessment Manual EMS0020 Environmental Standard Awareness Waste has been developed for the site. This training will be delivered to all Supervisors and Operators on site. The Manual outlines Borg employees responsibilities to assist with managing waste across the site and ensure ongoing regulatory compliance.

Standard Operating Procedure EMS0030 Receiving and Accepting Urban Wood Residue (UWR) has been developed for site. This is to ensure the type and quality of UWR received on site which is to be incorporated into new particleboard meets Borg specification, EPA licence and Development Consent conditions, and NSW Government Regulations.

All training records are maintained in DataStation.

2 Legislative and Regulatory Compliance

2.1 Relevant Legislation

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

- *Protection of the Environment Operations Act 1997;*
- Protection of the Environment Operations (Waste) Regulation 2014; and
- *Waste Avoidance and Resource Recovery Act 2001*.

2.2 Conditions of Consent

The operations at Borg Panels are subject to the conditions contained in Development Consent SSD 7016 and the following modifications:

- MOD 1 – extension of mouldings warehouse, reorientation of materials handling building, layout change to particleboard chipper/debarker building, extension of northern noise bund, reconfiguration of elements of the surface water management system, reclamation of the Spring Dam* (approved 20 November 2018)
  *MOD 1 condition B33A requires preparation of a Spring Fed Dam Reclamation Management Plan therefore details are not included in this SWMP.
- MOD 2 – installation of an electricity generation gas turbine and ancillary equipment (approved 29 November 2019)
- MOD 3 – additional materials handling equipment, extension to northern warehouse, changes to the site surface water system and construction of further hardstand

The specific requirements for a WMP (Schedule 2, Condition B51 and B52) and general requirements for environmental management plans (Schedule 2, Condition C9) are detailed in Table 1.

Table 1 - Development Consent Conditions

No.	Requirement	Document Reference
	WASTE MANAGEMENT	
	Waste Management Plan	
B51.	Within 6 months of the date of this consent, the Applicant must prepare a Waste Management Plan (WMP) for the Existing Development to the satisfaction of the Secretary. The WMP must form part of the OEMP required by Condition C4 and be prepared in accordance with Condition C9. The WMP must:	This Plan
	a) detail the type and quantity of waste generated by the Existing Development;	Section 3
	b) describe the handling, storage and disposal of all waste streams generated on site, consistent with the POEO Act, *Protection of the Environment Operations (Waste) Regulation 2014* and the *Waste Classification Guideline* (Department of Environment, Climate Change and Water, 2009);	Section 4

No.	Requirement	Document Reference
	c) detail the materials that are being reused or recycled, either on or off site; and	Section 4
	d) include the Management and Mitigation Measures included in Appendix B.	Section 2.3
B52	Prior to commencement of operation of the Project, the Applicant must update the WMP required under Condition B51 to incorporate the Project and its management to the satisfaction of the Secretary. The updated plan must be prepared in accordance with the requirements of Condition B51, and must incorporate the following:	This Plan
	(a) details of the materials to be reused and recycled for the Project; and	Section 4
	(b) details of the procedures for managing, handling and accepting materials to be reused or recycled on-site for the Project.	Section 4
	MANAGEMENT PLAN REQUIREMENTS	
C9	The Applicant must ensure that the environmental management plans required under Condition C4 of this consent are prepared by a suitably qualified person or persons in accordance with best practice and include:	Revision History
	a) detailed baseline data;	Section 3
	b) a description of: (i) the relevant statutory requirements (including any relevant approval, licence or lease conditions); (ii) any relevant limits or performance measures/criteria; and (iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the Development or any management measures;	Section 2
	c) a description of the management measures that would be implemented to comply with the relevant statutory requirements, limits or performance measures/criteria;	Section 4
	d) a program to monitor and report on the: (i) impacts and environmental performance of the Development; and (ii) effectiveness of any management measures (see (c) above);	Section 6
	e) a contingency plan to manage any unpredicted impacts and their consequences;	Section 5.4
	f) a program to investigate and implement ways to improve the environmental performance of the Development over time;	Section 4.3

No.	Requirement	Document Reference
	g) a protocol for managing and reporting any: (i) incidents; (ii) complaints; (iii) non-compliances with statutory requirements; and (iv) exceedances of the impact assessment criteria and/or performance criteria; and	Section 5
	h) a protocol for periodic review of the plan.	Section 6.5
	Note: *These requirements also apply to the preparation or updates of management plans for the Existing Development and the Project.*	

2.3 Development Consent SSD 7016 Mitigation Measures

Appendix B Applicant's Management and Mitigation Measures to Development Consent SSD 7016 details the reasonable and practical measures to avoid or minimise impacts to the environment that may arise as a result of the Project. The following is included for waste:

Recovered Wood Material/Products

EPA approval will be obtained prior to the use of recycled materials in the particleboard manufacturing process.

2.4 Environment Protection Licence

Environment Protection Licence 3035 (EPL 3035) specifies waste that may be received at the premises and use of that waste during operation of the facility.

Condition L3 Waste of EPL 3035 states:

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

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

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

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

Code	***Waste***	***Description***	***Activity***	***Other Limits***
NA	General or Specific exempted waste	Borg Panels Urban Wood Residue that meets all the conditions of 'The Borg Urban Wood Residue Trial Order September 2019' under Part 9 Clause 93 of the Protection of the Environment Operations (Waste) regulation 2014	As specified in each particular resource recovery exemption	NA
NA	General or Specific exempted waste	Soil that meets all the conditions of the Sydney Trains screened soil order under Part 9 Clause 93 of the Protection of the Environment Operations (Waste) regulation 2014	As specified in each particular resource recovery exemption	NA

Code	Waste	Description	Activity	Other Limits
NA	General or Specific exempted waste	Reclaimed Asphalt, that meets all the conditions of the reclaimed asphalt pavement order under Part 9 Clause 93 of the POEO (Waste) Regulation 2014	As specified in each particular resource recovery exemption	NA
NA	General or Specific exempted waste	Waste glass, that meets all the conditions of the recovered glass sand order under Part 9 Clause 93 of the POEO (Waste) Regulation 2014	As specified in each particular resource recovery exemption	NA
NA	General or Specific exempted waste	Waste ceramic tiles, sourced from National Ceramic Industries Australia Pty Limited, Rutherford NSW, that meets all the conditions of the recovered aggregate resource recovery order under Clauses 91-96 of the POEO (Waste) Regulation 2014	As specified in each particular resource recovery exemption	NA
NA	Non-standard Fuel sourced from materials generated within the Oberon Timber Complex	As defined in condition L7.2		Used in accordance with conditions L7.1 and L7.2
NA	Non-standard Fuel generated offsite from material originally manufactured within the Oberon Timber Complex	As defined in Condition L7.2		Used in accordance with conditions L7.1 and L7.2

Note: For the purposes of condition L3.1, the Oberon Timber Complex refers to the businesses known as Structaflor, Highland Pine Products, Borg Panels and Woodchem.

Condition L7 Other limit conditions of EPL 3035 states:

L7.1 Only the following materials may be used as fuel within the Conti 1 and Conti 2 heat plants: -

a) Standard Fuel; and
b) Non-Standard Fuel.

L7.2 For the purposes of condition L7.1, Non-Standard Fuels are those fuels that have been assessed by the EPA as being appropriate for use as a fuel additive and

comprise those materials that are derived from Oberon Timber Complex activities. Non-Standard Fuels currently approved for use are: -

a) MDF Board;
b) Particle Board sourced from Borg Panels and Structaflor premises;
b) Shredded MDF Board;
c) Sander Dust;
d) Laminated MDF Board;
e) Water Treatment Plant sludge; and
f) Saw dust/off-cuts sourced from Bearers 4 U Pty Limited (Lot 4 Albion Street, Oberon)

Licence version date 4 September 2019 includes section 8 Special Conditions which are specific to the UWR trial. Condition E1 Trial of Urban Wood Residue – Particleboard Factory states:

The licensee must undertake a trial of the receipt, storage, processing and use of Urban Wood Residue (UWR) as an alternative raw material to be use at the particleboard factory within the premises. The trial is to be conducted over a period of 12 months and conclude on 30 August 2020.

All UWR received at the premises must be managed n accordance with the Urban Wood Residue Quality Assurance and Control Plan, v2.0.

The condition also outlines requirements for sampling and testing of the material, and the preparation of a Report following the conclusion of the trial.

3 Process Overview

3.1 MDF Plant

The MDF plant produces MDF from the compression and densification of wood fibres treated with Melamine/Urea Formaldehyde polymer and wax. The MDF plant operates with two fully automated press lines producing boards of various dimensions. Product from the MDF plant is also used in the mouldings plant.

There are two heat plants (HP) in operation supplying heat to the facility. Fuel from the heat plants is sourced from both raw materials purchased for the plants and waste products obtained in accordance with EPL 3035 requirements (Section 2.4).

A schematic overview of the MDF process is shown in Figure 1.

3.1.1 Waste Streams

The following waste streams are generated in the MDF plant:

- Bark;
- Oversize and undersize wood chips;
- Fibre;
- Off-spec product / reject board;
- Sawdust and sanding belts;
- MDF trim;

- Packaging materials; and
- Heat plant ash.

3.1.2 Bark

Sorted logs are transferred to a debarking plant either directly from incoming trucks or from the log yard. Bark from this process falls to a lower deck and is collected by a scraper, which feeds the bark to a conveyor and stockpile.

Bark and other log wood refuse is then used as fuel for the heat plant or on-sold for landscaping purposes.

3.1.3 Oversize and Undersize Woodchips

De-barked logs are fed into a chipper, which converts the full log into a standard size chip suitable for further processing. The created chip is then fed by conveyor onto the chip piles. Chips are stored in large chip piles that utilise horizontal screw reclaimers at the base of the piles to feed chips into the refining process. Chips are screened and washed prior to the refining process to remove any oversize or undersize chip fractions and any stones, metal, or dirt that may cause process disruptions or flaws in the finished product. Undersize and oversize chip is collected and fed as fuel to the MDF heat plants.

3.1.4 Fibre – Prior to Press Line

Following washing, dewatered chips are refined into fibre. Fibre is produced by passing wood chip through a defibrator, a steam pressurised disk refinement process. The fibre produced is light and fine, which means it is easily spread by wind.
Wax and resin are added to the fibres before the fibre drying process. Wax is added to improve the moisture resistance of the board, and resin is added as an adhesive for the MDF board pressing process.

Process disruptions during start-up or fibre production can lead to a ‘fibre dump’ from the dryer start-up cyclone. Dumped fibre is collected in designated fibre dump pits located in the outdoor MDF plant area. The quantity of fibre dumped is not officially recorded either manually or automatically as part of the process control system. The size of the fibre ‘dump’ varies according to whether the dump is due to process start-up and shut-down or process disruptions.

The fibre dumps are generally constructed with three surrounding walls and an open front to allow collection of the fibre by a front-end loader. This design provides some protection from the risk of windblown fibre spreading throughout the plant.

Additionally, a street sweeper operates on a full-time basis to collect and control the spread of fibre across the outside areas of the MDF plant, and subsequently the spread of windblown fibre to other areas of the timber complex and surrounding properties. Fibre collected by the street sweeper is placed in the fibre dumps.

Fibre from the fibre dumps is taken to the fuel storage and mixing bunker at the MDF plant for blending with other approved fuels for use in the MDF heat plants.

Loose fibres from within enclosed buildings of the MDF plant are collected with a vacuum, which is also emptied into the fibre dumps.

3.1.5 Fibre – Press Line

Ensuring the fibre matt is of appropriate quality and thickness is essential to achieving the required finished product standard. Therefore, the fibre quality is subject to online analysis following the pre-press. If unsatisfactory, the load of fibre on the conveyor can be 'dumped' prior to entering the press.

The edges of the pre-pressed matt are trimmed to provide a clean edge prior to the main press. Trimmed fibre is recycled back into the process, with return to fibre storage prior to the pre-press. There is no online analysis of the flowrate of fibre back into the process from the pre-press, or of reject fibre to the fibre dumps.

3.1.6 Reject Board

The quality of MDF exiting the main press is analysed online, with board that fails to meet the required standard being rejected prior to entering the star cooling wheel. The quantity of reject board from both the Conti 1 and Conti 2 press lines is recorded in the daily operations reports.

Board can also be rejected at later stages of the process by visual inspection. Board can be rejected from the production line by operators following sanding and trimming, and prior to packaging.

Rejected board from the press-line and later production stages is stockpiled for later use, predominantly as product packaging bearers. Leftovers and offcuts from the bearer making process are used as fuel in the MDF heat plant.

3.1.7 Sawdust and Sanding Belts

Following cooling and storage, MDF is sanded down to the required thickness and finish. Sawdust from the sanding process is collected under vacuum to a baghouse filter, prior to being blown across to sawdust storage silos at the MDF heat plant.

Sanding belts are approximately 2.65m x 2.8m and come packaged in large cardboard boxes. Approximately 1 belt per head requires changing each 12-hour shift. There are two thicknesses of finishing heads. Both the sanding belts and their cardboard packaging are disposed of as general waste to landfill.

3.1.8 MDF Trim

MDF is cut to the required size boards according to different product requirements. Trim offcuts can vary according to the product being produced. Wood trim from the trim saws (both the length and width cut) is automatically dropped onto a conveyor belt and fed to a wood hogger. The board is crushed and broken into smaller pieces in the hogger, which is then blown across to the fuel storage and mixing bunker for the MDF heat plant.

3.1.9 Product Packaging

MDF products are packaged using wood bearers, plastic strapping and plastic shrink wrap. All packaging wastes are disposed of as general mixed waste to landfill.

The plastic strap used in the MDF plant is recyclable, however there is no segregated collection of plastic strap for recycling at the MDF plant.

3.1.10 Heat Plant Ash

Ash is the main waste stream from the heat plant. Ash is currently disposed of to landfill.

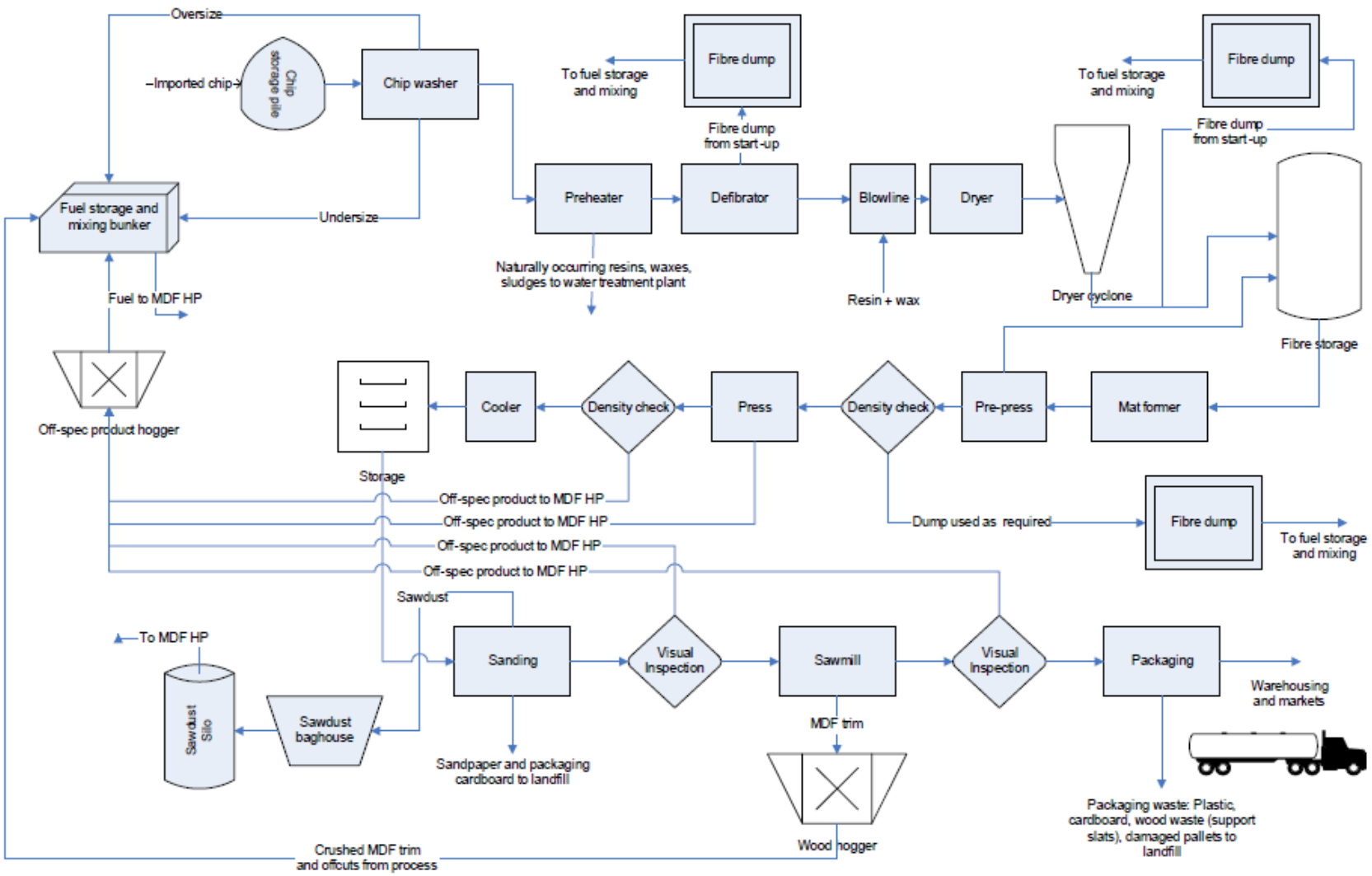

Figure 1 – Schematic Overview of the MDF Production Process

3.2 Particleboard

Particleboard manufacturing involves both the processing of virgin wood, residual wood waste from sawmills and the recycling and processing of appropriate used wood to create suitable sized particles. These particles are blended with glue and a blend of urea formaldehyde with a paraffin wax emulsion. After blending, the particles are sent to the appropriate mat forming stations. The mat is then conveyed to the press via the forming line. The forming line is able to reject and recycle mat before pressing. Any reject material is reused on the site. Once processed, the board it cut, cooled and sanded, then stored for shipping.

3.2.1 Waste Streams

Waste streams generated from the manufacturing of particleboard include the following:

- Bark;
- Oversized and undersized wood ships;
- Off-spec product/board reject;
- Sawdust and sanding belts;
- Particleboard trim;
- Packaging materials; and
- WESP waste material.

3.2.2 Bark

Plantation timber logs are brought to site from external locations and processed through the timber yard. This includes processing the timber through a debarker and chipper. This chip is then fed on a covered conveyor to the chip storage silos (x2). Any fallen chip is swept up and added to the stockpile in the silos or taken to the fuel storage area.

3.2.3 Flaking

Chips are moved from the silos via covered belts and conveyors to the knife ring flakers designed to produce the optimum macro sized particles for processing. Saw dust is also introduced to the particles at this point. The flakers are located within an enclosed building. Any dust/small particles deposited outside the ring flaker are manually swept up and either used to fuel the heat plants or reintroduced into the particleboard production system.

3.2.4 Dryer

The dry saw dust and wet wood particles are then dried in a fully enclosed rotating drum drier. Any small particles generated during the drying process which are smaller than required are removed using cyclone extractors. Any surplus air generated which is not required for the drying process is cleaned using a Wet Electrostatic Precipitator (WESP) prior to being released to the atmosphere as clean air. Once dry and processed in this manner, the particles are removed and stored in a third silo.

Once this process has been carried out, screening is undertaken with any appropriate sized particles and dust sent to storage. Any oversized particles are sent to the grinding mill to reduce them to an appropriate size.

Dump chutes similar to those described in section 3.1.4 Fibre – Prior to Press Line are located in this area and waste from these are managed in the same way.

3.2.5 Blending, Forming, Pressing

Particles are then blended with glue and additives including urea formaldehyde and paraffin wax emulsions and sent to the mat forming stations. The forming stations ensure that there is an even distribution of particles across both the width and thickness of the board. The mat is weighed and adjusted to ensure the finished product has a consistent density. Any reject mat is returned to the flaking system and reintroduced into the manufacturing process.

The forming line then transports the layered mat in a continuous format to the press. The forming line is able to reject and recycle the mat before pressing if the specified product parameters are not of a suitable standard. Any rejected material is reused on site. The press then applies the specified heat and pressure to cure and consolidate the board to meet or exceed Australian Standards.

3.2.6 Trimming, Sanding, Finishing

Once processed, the pressed board is then square cut, cooled and stored in an automated storage system. Any off cuts are put back through the system to create particleboard.

Once cooled and cured, the boards are removed from storage and processed through the sander to ensure they meet final standards. Sawdust from the sanding process is manually swept up by a mechanical sweeper for reuse on site.

Product packaging for particleboard is the same as for MDF described in section 3.1.9 above.

3.3 Mouldings Plant

3.3.1 General

The mouldings plant processes MDF sheets into finished (painted) mouldings suitable for use as skirting boards, doorjambs and architraves.

The main input materials to the mouldings process include MDF sheets from the MDF plant, paint, plastic wrap and strapping used in the final product packaging.

MDF sheets are cut to the required size using a multi-saw, prior to moulding and sanding to the required style and shape. The mouldings undergo a two stage (two coat) painting process with drying and intermediate de-nibbing (rubbing down) between paint stages, prior to visual inspection of the product, packaging, storage and delivery of product to markets.

A schematic overview of the mouldings process is shown in Figure 2.

3.3.2 Waste Streams

The following waste streams are generated in the mouldings plant:

- Plastic strapping and packaging from MDF receival;
- Product trim and offcuts;
- Sawdust;
- Paint, paint filters, and paint washdown;
- Product packaging; and
- Reject material.

3.3.3 Plastic Strapping and Packaging from MDF Receival

MDF sheets delivered to the mouldings plant are stacked on wood bearers supported with plastic strapping and are labelled.

The plastic strapping removed from the MDF is recyclable, however there is no segregated collection of plastic strap for recycling at the mouldings plant. MDF labels (equivalent to a printed A4 sheet) are disposed of as general waste.

Wood bearers are reused wherever possible. Undamaged wood bearers are returned to the MDF plant for reuse. Damaged wood bearers are collected and sent to the heat plants for use as fuel.

3.3.4 Product Trim and Offcuts

MDF offcuts from the initial sawing process are collected and sent to the MDF heat plants for use as fuel. The number of offcuts is dependent on the product specification and size of MDF board.

3.3.5 Sawdust

Sawdust from the sawing line, moulder, and sander is collected under vacuum to a baghouse filter, prior to being blown across to sawdust storage silos at the MDF heat plants.

Material removed from the painted timber surface in the denibbing process (following the first painting stage) is collected under vacuum to a baghouse filter, prior to being blown across to sawdust storage silos at the MDF heat plants.

Sawdust is also used to clean up any paint spillages. Paint soaked sawdust is dried and disposed of to a suitable landfill location.

3.3.6 Paint, Paint Filters and Paint Washdown

Painting is undertaken in a bunded area, allowing for cleaning and washdown of each painting area. The area is cleaned using water, and the washdown water is recycled back into the process via mixing with fresh paint in the paint day-tank or is sent to the water treatment plant for treatment.

Paint filters are cleaned and reused as required.

3.3.7 Product Packaging

Waste streams generated from the packaging line include:

- Cardboard boxes (received from delivery of packaging materials);
- Cardboard cores from rolls of plastic wrap;
- Damaged wood bearers;
- Plastic wrap; and
- Plastic strapping offcuts from the strapping machine.

Finished mouldings are stacked on laminated wooden bearers prior to strapping and covering with plastic wrap. Plastic wrap used in the wrapper is coiled over a cardboard core that is currently not returnable to the manufacturer, thus the cores are disposed of as general waste to landfill.

Bearers used to support mouldings products are made from MDF or untreated wood, therefore they are suitable for use as fuel in the MDF heat plants. Attempts are made to repair and reuse damaged wood bearers as much as possible. Broken bearers are used for fuel in the MDF heat plants.

3.3.8 Reject Material

Product is subject to visual inspection following application of the second coat of paint and prior to packaging. Product that fails to meet the required quality standard is removed from the process and recorded as reject. Rejected product is stockpiled for use as fuel in heat plants.

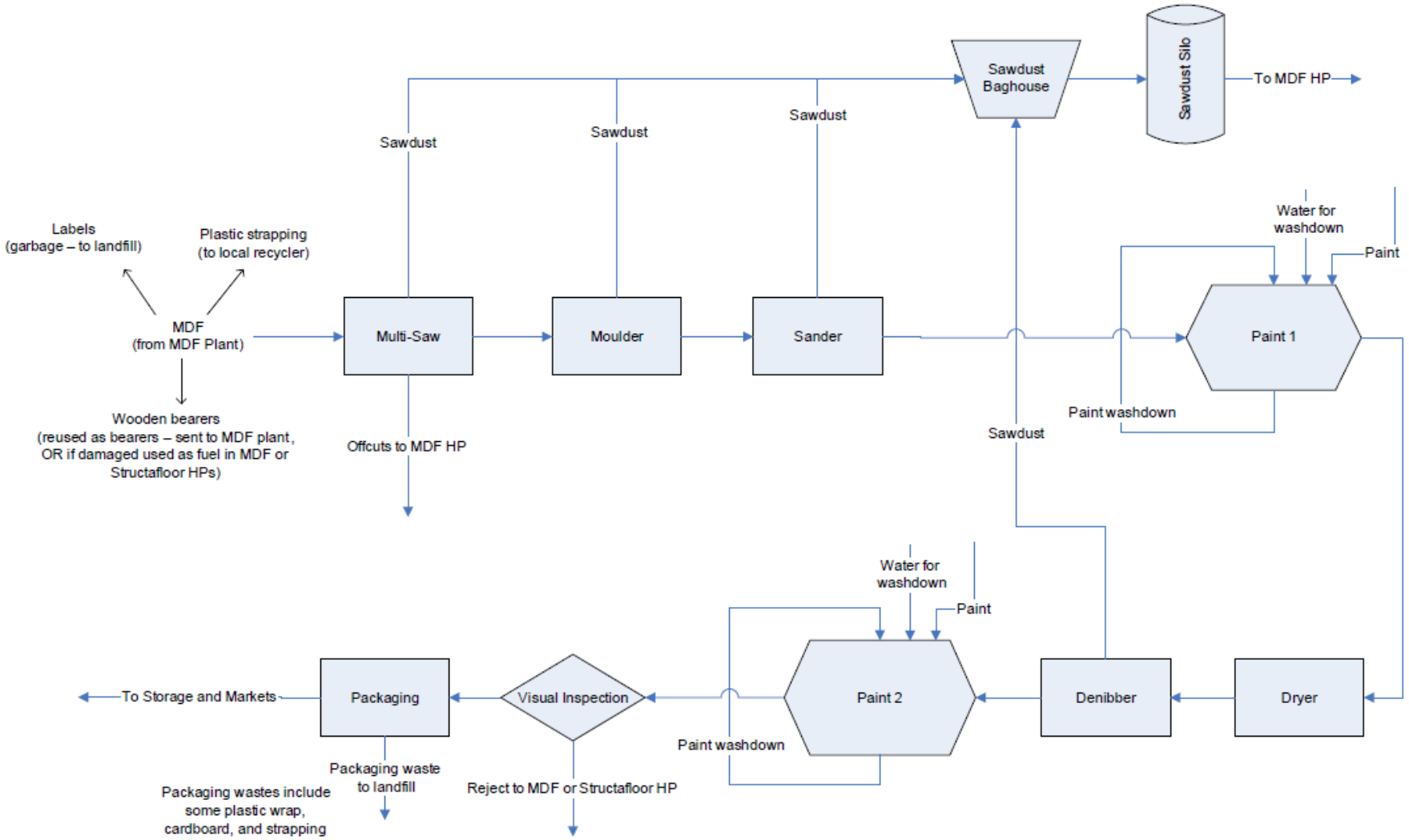

Figure 2 – Schematic Overview of the Mouldings Production Process

3.4 Paper Treater

3.4.1 General

The paper treater manufactures resin treated paper films that are used to laminate onto the surface of the MDF and particle board sheets. These films provide colour, texture and durability to the surface of the board.

The paper treatment process uses urea and melamine formaldehyde adhesives which are saturated into and onto a continuous paper web. The resin filled paper web is dried sufficiently, in gas fired flotation ovens, until they no longer tack together when placed in contact with one another.

The continuous web is then cut into suitable sized sheets or reeled onto a core for use on a continuous laminating press line.

3.4.2 Waste Streams

Waste streams generated from the paper treatment process include the following items:

- Raw paper;
- Cardboard cores;
- Waste resin;
- Dried treated paper; and
- Wet treated paper.

3.4.3 Raw Paper

The dense cardboard protective outer wrapping of the paper rolls is removed prior to preparation for the paper treatment process. Additionally, some of the decorative raw paper is also recycled or sent to the MDF heat plant to be used as fuel.

3.4.4 Cardboard Cores

Raw decorative paper is coiled over a cardboard core. Used cardboard cores are disposed of as general waste to landfill.

3.4.5 Waste Resin

Waste resin is generated at the end of a production run, or when there are process upsets to out of specification resin. End of run material can be pH stabilised and utilised during the next suitable production run. Out of specification material can be reused in the MDF board making process if the opportunity exists, otherwise it is chemically set to solidify and disposed of to landfill.

3.4.6 Dried Treated Paper

Dried treated paper is generated in process upset conditions when the continuous web is broken. This paper is very brittle and has no alternatives uses and is therefore sent to landfill.

3.4.7 Wet Treated Paper

Wet treated paper is generated in process upset conditions when the continuous web is broken. This wet paper has no alternative uses and is also sent to landfill.

3.5 Laminating Presses

3.5.1 General

Laminating presses are used to thermally fuse the treated paper to the surface of the MDF and particleboard substrate. They operate by applying heat and pressure to the treated paper leaf and board assembly, which activates the glue causing it flow and bond to the surface of the board product.

3.5.2 Waste Streams

Waste streams generated from the laminating press process include the following:

- Dry treated paper;
- Reject laminated board;
- Plastic film from wrapping; and
- Packaging.

3.5.3 Dry Treated Paper

Dry treated paper that is broken or damaged during setup of the laminating process is sent to landfill.

3.5.4 Reject Laminated Board

Board that is not suitable for resale after the laminating process is generally reused by sanding and then re-laminated into A grade product. Alternatively, the board product is used in the bearer making process. Offcuts from the bearer making process are used onsite as fuel in heat plants.

3.5.5 Plastic Film Wrapping

Plastic film is used for wrapping treated paper to prevent moisture ingress. Used plastic film is sent to landfill.

3.5.6 Packaging

Treated paper is transported for use at other manufacturing sites in flat sheets. The paper sheets are protected with thick MDF top and bottom. Treated paper for use onsite is rolled onto aluminium cores.

Both the MDF used for transport and aluminium cores used onsite are reused in the same process until end of life, at which time the MDF is sent to the heat plants for fuel and aluminium cores are recycled.

3.7 Water Treatment Plant

3.7.1 General

The on-site water treatment plant processes all the effluent (process water) generated from various activities at site. The water treatment plant utilises filtration and biological degradation to remove contaminants from the water for re-use, capturing over 300kL per day from the site and reusing it in the manufacturing process.

More detail on the function and operation of the water treatment plant is provided in EMS0006 Surface Water Management Plan.

3.7.2 Waste Streams

Waste streams generated from operation of the water treatment plant include the following:

- Chemical containers;
- Brine; and
- Solids from filtration.

3.7.3 Chemical Containers

The water treatment plant requires chemicals for its operation, the chemicals are generally supplied in IBCs or bags for solid materials. Management of IBCs on-site is detailed in Section 3.6.3. Empty bags are disposed of to landfill.

3.7.4 Brine

The water treatment plant produces brine, a waste product from the Reverse Osmosis (RO) system, which is high in dissolved solids. Brine solids are currently treated within the water treatment plant by way of dilution then reused in the manufacturing process.

3.7.5 Solids from Filtration

Dewatered waste sludge (biomass) from the centrifuge is sent to the heat plant as fuel for the furnace.

3.8 Common Waste Streams

The following waste streams are common to more than one process on-site, and are handled, processed and recorded collectively for the facility.

3.8.1 Scrap Metal

Scrap metal with potential for reuse within the plant is stockpiled on site and reused wherever possible.

Other scrap metal that is not stockpiled is placed in scrap metal skip bins for removal from site to a metal recycler.

3.8.2 Waste Oil

Waste oil is collected from site for recycling by Cleanaway.

3.8.3 Chemical Containers

Empty chemical containers (IBCs) are washed and stored on-site prior to recycling, reuse or disposal. The majority of IBC's are reused at site, with the remainder that are not re-purposed or are at end of life being cut up or crushed and sent to landfill.

Waste drums of metal construction are triple rinsed and sent to the recyclers.

Waste requiring burial is made up of urea formaldehyde spade-able resin and paraffin wax bladders. Quantities of these are sporadic and disposal of resin in this manner is considered as a last resort as the product has a high capital cost. This waste is disposed of to Bathurst Regional Council Waste Management Centre.

3.8.4 General Waste

All general waste from work areas, offices and staff amenities is collected in bulk skip bins and taken to Oberon Council Waste Depot for disposal. There is no segregation of recyclable materials.

3.9 Waste Quantities

A summary of estimated waste generation at the Borg Panels facility is provided in Table 2.

Table 2 – Summary of Waste Generated in Borg Panels Facility

Waste Stream	Estimated Annual Waste Generation	Disposal / End Use
Bark	30,000 tonnes	Fuel in heat plant or on-sold for landscaping purposes
Oversize and undersize woodchips	190,000 tonnes	particleboard manufacturing
Fibre	Not recorded	Fuel in heat plant or particleboard manufacturing
Reject Product	2,200 tonnes (assumed average density of 730kg/m3)	Fuel in heat plant or particleboard manufacturing
Ash	800m^3	Landfill
Sawdust	9,000 tonnes	particleboard manufacturing
Trim and Offcuts	7,000 tonnes	Fuel in heat plant or particleboard manufacturing
Wood Bearers	Included in MDF trim and offcuts	Fuel in heat plant
Scrap Metal	Not recorded	Recycled
Waste Oil	40,000 litres	Recycled
Oil Drums	500 drums	Reused or returned
General Mixed Waste (sanding belts, cardboard, plastic strapping, shrink wrap, labels, paint filters, treated paper, general waste)	7,000 m^3	Landfill
Brine (from WTP)	100% reuse captured in board production	Reuse
Sludge (from WTP)	Not recorded	Fuel in heat plant
Chemical Containers (IBCs)	Included in general mixed waste	Reuse, recycle and landfill

Waste Stream	Estimated Annual Waste Generation	Disposal / End Use
Waste resin (spade-able or solidified) and paraffin wax bladders	150 tonnes	Bathurst Council Waste Management Centre – waste requiring burial

4 Implementation

4.1 Minimising Waste Production

Borg Panels aim to appropriately manage and minimise waste generation at the Oberon facility, including domestic waste production and the reuse and recycling of waste where possible.

4.2 Waste Hierarchy

Borg Panels will endeavour to manage the waste generated on site by following the best practices as set out in the *Waste Avoidance and Resource Recovery Act 2001*. The Waste Hierarchy of Control is detailed in Figure 3.

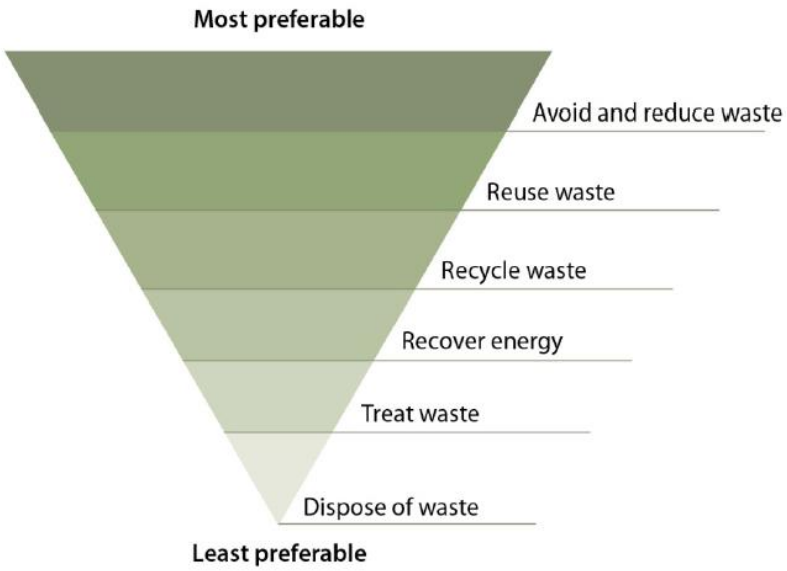

Figure 3 – Waste Hierarchy of Control

Waste is separated on site into different classes in accordance with the NSW EPA *Waste Classification Guidelines*. Before waste is removed from site it is assessed for suitability for the intended destination. Waste is classified into the groups identified in Table 3.

4.3 Waste Monitoring

Waste monitoring is undertaken at a corporate level. The focus of the monitoring program is to investigate and implement ways to reduce waste generation and increase recycling opportunities of the facility

4.4 Management of Waste Streams

Waste produced at the site is disposed of either by Borg staff or licenced contractors to licenced waste facilities. The classification, management and disposal of wastes is outlined in Table 3.

Table 3 – Waste Classification, Management and Disposal

Waste Category	Source	Management	Disposal
General solid waste (putrescible)	Food scraps and wrappers from site personnel	No separation from general solid waste (non-putrescible)	Off site disposal at Oberon Council Licenced Waste Facility
General solid waste (non-putrescible)	Sanding belts	Collected in skip bins	Off site disposal at Oberon Council Licenced Waste Facility
	Heat plant ash	Stockpiled and disposed of to landfill as general waste	Off site disposal at Oberon Council Licenced Waste Facility
	Paint solids, filters, spillages and linings	Dried and disposed of to landfill as general waste	Off site disposal at Oberon Council Licenced Waste Facility
	Plastic strapping and wrapping	Collected in skip bins	Off site disposal at Oberon Council Licenced Waste Facility
	Cardboard cores and cardboard boxes	Collected in skip bins	Off site disposal at Oberon Council Licenced Waste Facility
	Treated paper	Collected in skip bins	Off site disposal at Oberon Council Licenced Waste Facility
	Waste resin (spade-able or solidified) and paraffin wax bladders	Collected in skip bins	Bathurst Council Waste Management Centre – Waste requiring burial
General solid waste (recyclable)	Bark, oversize and undersize woodchip, fibre, sawdust, wood trim, bearers and reject product	Stored on site	Fuel in heat plants or particleboard manufacturing
	Scrap metal	Metal recycling facility or reused on site	Off site to metal recycler
	Oil drums	Reused or returned	Off site to drum re-conditioner

Waste Category	Source	Management	Disposal
	Sludge (from WTP)	Stored on site	Fuel in heat plants
Liquid waste	Waste oil	Cleanaway	Off site disposal by licenced contractor
	Brine (from WTP)	captured in production process	As detailed in EMS0006 *Surface Water Management Plan*
Hazardous waste	Chemical containers	Recycled, reused or disposed	Cleaned, cut up or crushed and sent to Bathurst Regional Council Waste Management Centre
Special waste	Asbestos waste	Asbestos register	Off site disposal by licenced contractor
	Waste tyres (any used, rejected or unwanted tyres including shredded or tyre pieces)	Tyres collected and stored on site for disposal as required	Off site disposal by licenced contractor

4.5 Waste Storage Areas

Designated waste storage areas are provided at various locations around the facility as follows:

- Paper treater building;
- Board offcuts skip bins in various locations;
- Metal recycling skip bins at various locations;
- Small general waste bins throughout the facility; and
- Large general waste skip bin.

4.6 Waste Minimisation and Avoidance

Borg Panels aim is to avoid and reduce waste wherever possible. Borg Panels has implemented a waste minimisation program by:

- Waste monitoring and tracking to enable Borg Panels to account for trends in waste generation and set targets for reduction where possible;
- Incorporating information on waste classification and disposal into personnel training and communication material;
- Provision and clear identification of separate waste stream disposal bins and/or locations; and
- Discussion of opportunities for waste minimisation during staff and contractor meetings.

4.7 Waste Receipt and Handling On-Site

As described in Section 2.4 of this Plan, EPL 3035 allows specified waste to be received at the premises and stipulates use of that waste at the facility.

Each waste identified as *General or Specific exempted waste* in Section 2.4 must be managed in accordance with the particular resource recovery exemption as issued by the NSW EPA.

5 Incidents and Complaints Management

5.1 Incidents

Any environmental incident relating to waste management will be managed in accordance with the procedures in EMS0001 Operational Environmental Management Plan (OEMP).

5.2 Complaints

Community complaints will be managed in accordance with the procedures in EMS0001 Operational Environmental Management Plan (OEMP).

5.3 Non-Compliances

In the event it is determined that a non-compliance with waste legislation has occurred, notification procedures will be as per EMS0001 Operational Environmental Management Plan (OEMP).

5.4 Contingency Planning

If any unclassified waste material is encountered, it is to be classified in accordance with the NSW EPA *Waste Classification Guideline* prior to disposal off site by a licenced waste contractor to a licenced waste facility.

Any emergency involving the generation of waste is to be managed in accordance with the Borg Panels *Emergency Response Plan*.

6 Monitoring and Review

6.1 Inspections

The Yard Supervisor is responsible for managing waste on a daily basis. The Yard Supervisor undertakes daily inspections and arranges weekly disposal of waste to landfill, and other collections as required.

Regular inspection of waste storage facilities is also undertaken as part of routine environmental inspections.

6.2 Waste Tracking

Waste generated by Borg Panels is weighed by either the licenced waste disposal contractor or receiving waste management facility. Oberon Council receive waste based on a cubic metre volume. Bathurst Regional Council Waste Management Centre records waste received in tonnage. The following details are recorded:

- Amount and classification of waste transported;
- Date transported;
- Truck registration; and
- Name and location of the receiving waste facility.

Borg Panels undertakes a review of waste management data on an annual basis and reports the findings in the Annual Review report.

6.3 Documentation and Record Keeping

Borg Panels retains all records of waste disposal for traceability, including:

- Waste receipts; and
- Waste Transfer Certificates.

Records relating to waste disposal are kept for a minimum of 4 years.

6.4 Reporting

Relevant information relating to waste management will be reported by Borg Panels as follows:

- Annual Review. A copy of the Annual Review is sent to relevant stakeholders, including DPIE, EPA and Oberon Council and is available on the Borg website.

6.5 Review and Auditing of this Plan

In accordance with Development Consent SSD 7016 Condition C10, this WMP will be reviewed and if necessary revised within 3 months of an:

- Approval of a modification;
- Submission of an incident report under Condition C13;
- Approval of an Annual Review under Condition C11; or
- Completion of an audit under Condition C15.

Revisions to the WMP will be submitted to the Secretary DPIE for approval.