

EMS0006
Surface Water Management Plan
Borg Panels
124 Lowes Mount Road, Oberon NSW

Borg Panels Pty Ltd

27 November 2020

This document should be read in conjunction with EMS0060 Construction Environment Management Plan and EMS0001 Operational Environment Management Plan

Revision History

Rev No.	Revision Date	Author / Position	Comments	Details	Authorised	
					Name / Position	Signature
0	06/09/17	Carly McCormack Planning and Environmental Officer		Draft	Victor Bendevski Environmental and Regulatory Compliance	
1	03/10/17	Carly McCormack Planning and Environmental Officer		Final Draft for Consultation with DPI	Victor Bendevski Environmental and Regulatory Compliance	
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4	13/12/17	Carly McCormack Planning and Environmental Officer		Final Incorporating DP&E Comments	Victor Bendevski Environmental and Regulatory Compliance	
5	02/11/18	Jacqui Blomberg Environmental Manager	Remove reference to Trade Waste Licence/Service Contract	Review as per SSD7016 C10	Victor Bendevski Environmental and Regulatory Compliance	
6	27/11/20	J Blomberg Environmental Manager		Review and update as per SSD7016 B33 & C10	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 manufacturing facility in Oberon, NSW. This facility manufactures a range of Customwood MDF and Custompine particleboard products including:

- Standard MDF;
- Moisture Resistant MDF;
- E0 (Low Formaldehyde Emitting) MDF;
- Ultraprime MDF Mouldings;
- Standard 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 Particle Board manufacturing facility, modify the existing MDF manufacturing facility and undertake general site works (the Project) at the existing Borg Panels facility located on 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 B32, C4 and C9, this Surface Water Management Plan (SWMP) has been updated as per condition B33 which states:

Prior to commencement of operation of the Project, the Applicant must update the SWMP required under Condition B32 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 B32, and must incorporate the following:

- (a) details of the proposed mitigation measures outlined in Section 6.0 of Proposed Particle Board Facility Water Cycle Impact Assessment, prepared by the Sustainability Workshop and dated May 2016, in particular, the final design specifications of the additional stormwater treatment and storage pond and emergency spill basin;*
- (b) details of the stormwater harvesting and reuse scheme; and*
- (c) outline the surface water monitoring program to measure the performance of the Development against this consent and the EPL.*

This revision will also address condition C10 where a review of this Plan is required where approval of a modification has been provided by DPIE.

1.2 Purpose and Objectives

The purpose of this SWMP is to:

- Consolidate and address the relevant conditions of Development Consent SSD 7016 and Environment Protection Licence (EPL) 3035 to manage surface water at the Borg Panels facility.

The objectives of the SWMP are to:

- Define the strategies and procedures to be implemented to ensure that the Borg Panels facility does not result in unacceptable off-site impacts on surface water systems and downstream users;
- Define a program to monitor and report on the impacts and environmental performance of the Borg Panels facility, and the effectiveness of any management measures; and
- Define a protocol for managing and reporting any incidents, complaints, non-compliances with statutory requirements, and exceedances of the impact assessment criteria and/or performance criteria.

1.3 Structure of this Surface Water Management Plan

This SWMP has been developed to manage site surface water at Borg Panels and to satisfy the requirements set out in Development Consent SSD 7016, and includes information on the following:

- Section 2 – Legislative and Regulatory Compliance
- Section 3 – Site Water Management
- Section 4 – Stormwater Management
- Section 5 – Erosion and Sediment Control
- Section 6 – Surface Water Monitoring Program
- Section 7 – Surface Water Impact Assessment Criteria
- Section 8 – Reporting
- Section 9 – SWMP Review

1.4 Consultation

In accordance with condition C4 the SWMP (dated 28 November 2017) was provided to NSW EPA for review and consultation and submitted to the Secretary of the Department of Planning and Environment for approval on 29 November 2017. The Department were satisfied that the SWMP met with the terms of the relevant conditions of consent and issued approval on 21 December 2017.

As required under condition B33, the SWMP was re-submitted to NSW EPA, DILW and DPIE on 11 December 2020.

As per condition C10, subsequent revised versions of the SWMP will be submitted to the Secretary for approval as is necessary.

1.5 Training

Training and Assessment Manual EMS0017 Environmental Standard Awareness Water 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 potential pollution to the surface water and groundwater systems across the site.

2 Legislative and Regulatory Compliance

2.1 Relevant Legislation

Key environmental legislation relating to surface water management for the site includes:

- *Protection of the Environment Operations Act 1997*; and
- *Environmental Planning and Assessment Act 1979*.

2.2 Conditions of Consent

The facility operations 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 SWMP (Schedule 2, Condition B32 and B33) 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
	SOILS, WATER QUALITY AND HYDROLOGY	
	Surface Water Management Plan	
B32	Within 6 months of the date of this consent, the Applicant must prepare a Surface Water Management Plan (SWMP) for the Existing Development, that incorporates the <i>Oberon Stormwater Management Strategy</i> , Rev G, prepared by Parsons Brinckerhoff, dated March 2012, to the satisfaction of the Secretary. The SWMP must form part of the OEMP required by Condition C4 and be prepared in accordance with Condition C9. The SWMP must:	This Plan
	a) be prepared in consultation with the EPA and DPI;	Section 1.4
	b) detail water use, metering, disposal and management on-site;	Section 3
	c) detail the water licence requirements for the Existing Development;	Section 2
	d) describe the surface water management system on-site;	Section 4
	e) include a program to monitor: <ul style="list-style-type: none"> (i) surface water flows and quality; (ii) surface water storage and use; and (iii) sediment basin operation; 	Section 6 Section 4 Section 5
	f) include a sediment and erosion control plan;	Section 5
	g) include surface water impact assessment criteria, including trigger levels for investigating and potential adverse surface water impacts; and	Section 7

No.	Requirement	Document Reference
	h) include a protocol for the investigation and mitigation of identified exceedances of the surface water impact assessment criteria.	Section 7
B33	Prior to commencement of operation of the Project, the Applicant must update the SWMP required under Condition B32 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 B32, and must incorporate the following:	This Plan
	a) details of the proposed mitigation measures outlined in Section 6.0 of Proposed Particle Board Facility Water Cycle Impact Assessment, prepared by the Sustainability Workshop and dated May 2016, in particular, the final design specifications of the additional stormwater treatment and storage pond and emergency spill basin;	Section 2.3 Section 4
	b) details of the stormwater harvesting and reuse scheme; and	Section 2.7 Section 3.2
	c) outline the surface water monitoring program to measure the performance of the Development against this consent and the EPL.	Section 4, 5 and 6
	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:	
	a) detailed baseline data;	Section 6
	b) a description of: <ul style="list-style-type: none"> (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 Section 6 Section 6
	c) a description of the management measures that would be implemented to comply with the relevant statutory requirements, limits or performance measures/criteria;	Sections 3, 4 and 5
	d) a program to monitor and report on the: <ul style="list-style-type: none"> (i) impacts and environmental performance of the Development; and (ii) effectiveness of any management measures (see (c) above); 	Section 8
	e) a contingency plan to manage any unpredicted impacts and their consequences;	Section 7
	f) a program to investigate and implement ways to improve the environmental performance of the Development over time;	Section 7

No.	Requirement	Document Reference
	g) a protocol for managing and reporting any: <ul style="list-style-type: none"> (i) incidents; (ii) complaints; (iii) non-compliances with statutory requirements; and (iv) exceedances of the impact assessment criteria and/or performance criteria; and 	Section 8
	h) a protocol for periodic review of the plan.	Section 9

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 management and mitigation measures listed below were identified by the Sustainability Workshop in the *Proposed Particle Board Facility Water Cycle Impact Assessment (May 2016)*:

- A new swale with a longer flow path to convey the CHH [Structaflor] runoff around the site and into a new treatment pond should be constructed. This will provide for the additional reduction of TSS and remove tannins. This swale should be vegetated using either appropriate grasses or macrophytes.
- It will be necessary to construct new swales to connect overflows from the proposed pond with the existing creek line and these will all be carried out in accordance with any Controlled Activity guidelines/permits or conditions of consent.
- Construction of a new stormwater treatment pond with a maximum volume of 6ML. This is to be located downstream of the existing pond and will accept runoff for the whole of the subject site, including any overflows from the existing stormwater treatment pond.
- The proposed 6ML water quality dam will be constructed at least 40m from the top of bank of the nearest watercourse. If during detailed design, it needs to be moved closer to the first order creek, a controlled activity permit will be obtained from DPIE.
- Stormwater harvesting will be undertaken as part of the development. The demand for stormwater from both the existing and future pond will be an estimated maximum of 400m³/day, i.e. 200m³/day from each pond with an estimated operational time of 300 days per year. The predicted yield for harvesting is estimated at 120ML/year.

As noted above in Section 2.2, the Project is currently working under approved modification 3 (MOD 3) to SSD 7016 dated 22 May 2020. As such, the mitigation and management measures suggested by Sustainability Workshop in May 2016 do not wholly apply as these subsequent modifications to the building infrastructure resulted in necessary modifications to the site surface water management system. These modifications to the water management system will be discussed further in below sections of this SWMP.

2.4 Environment Protection Licence

Environment Protection Licence 3035 (EPL 3035) specifies discharge to waters points, water concentration limits and monitoring requirements for operation at the facility.

EPL 3035 was varied on 9 October 2017 to align the licence details and conditions with conditions contained in Development Consent SSD 7016 issued by DP&I.

The most current version of EPL 3035 is licence version dated 4 September 2019.

2.5 Water Licences

Borg Panels holds a Water Access Licence for use of groundwater in operations. Current licence details issued under the *Water Management Act 2000* are summarised in **Table 2**.

Table 2 Water Licences

Approval Details	Approval Number	Validity of Licence	Approval Kind	Extraction Limit
WAL28951	80WA715797	16 January 2012 – 01 March 2026	Water Extraction	28 Units

2.6 Trade Waste Licence

Borg Panels were not offered a renewal on the Trade Waste Service Contract with Oberon Council. Further DPI Water did not provide concurrence due to the category of discharge. As such, liquid trade waste is now treated on site via the water treatment plant and does not discharge to the sewerage system.

2.7 Stormwater Harvesting

Only polluted runoff from operational areas and roof runoff is harvested for reuse. This runoff is directed via open swales and underground pipe network to the pre-existing stormwater flush basin and to the newly constructed stormwater flush basin. The site is yet to fully realise those volumes estimated for harvesting by the Sustainability Workshop in the *Proposed Particle Board Facility Water Cycle Impact Assessment (May 2016)*.

See Figure 3 for schematic of the site stormwater/surface water management system and section 3.2 for site stormwater consumption.

No runoff from the undeveloped rural land to the west of Lowes Mount Road is harvested. This unpolluted runoff is separated from the polluted industrial runoff into its own swale.

Given that clean/unpolluted runoff is not harvested, there is no need to calculate or exercise any harvestable rights as the only water harvested is from industrial land uses.

3 Site Water Management

3.1 Overview

The following production processes use water for manufacturing:

- **Chip Wash** – Chip is washed via a water washing system, which is used to remove the contaminants (foreign particles and minerals) from the chip. This process promotes longevity of the refiner discs and improves board quality and usability.
- **Chip Squeeze Out and Steaming Bin** – After the chip washing process large steel vessels are filled with clean chip. These are heated using steam to soften the chips making the refining process easier, this also increases the fibre length as it prevents overworking. Prior to refining, the chip is squeezed to remove excess water. This excess water is used for top up water for the chip wash process.
- **WESP** – is a system for electrical wet waste gas purification which serves to purify waste gases from wood chip drying processes.
- **SAP90** – is a wet extraction system for press exhaust air purification which is used to collect and purify press exhaust vapours from the wood-based panel industry.

In addition to the MDF and particleboard production processes, water is also used:

- In the manufacture of treated paper for use as decorative laminates;
- For creation of steam used in the fibre preparation process; and
- In cooling water for the refiner seals.

Figure 1 provides an overview of the major components of the site water management system and shows metering locations.

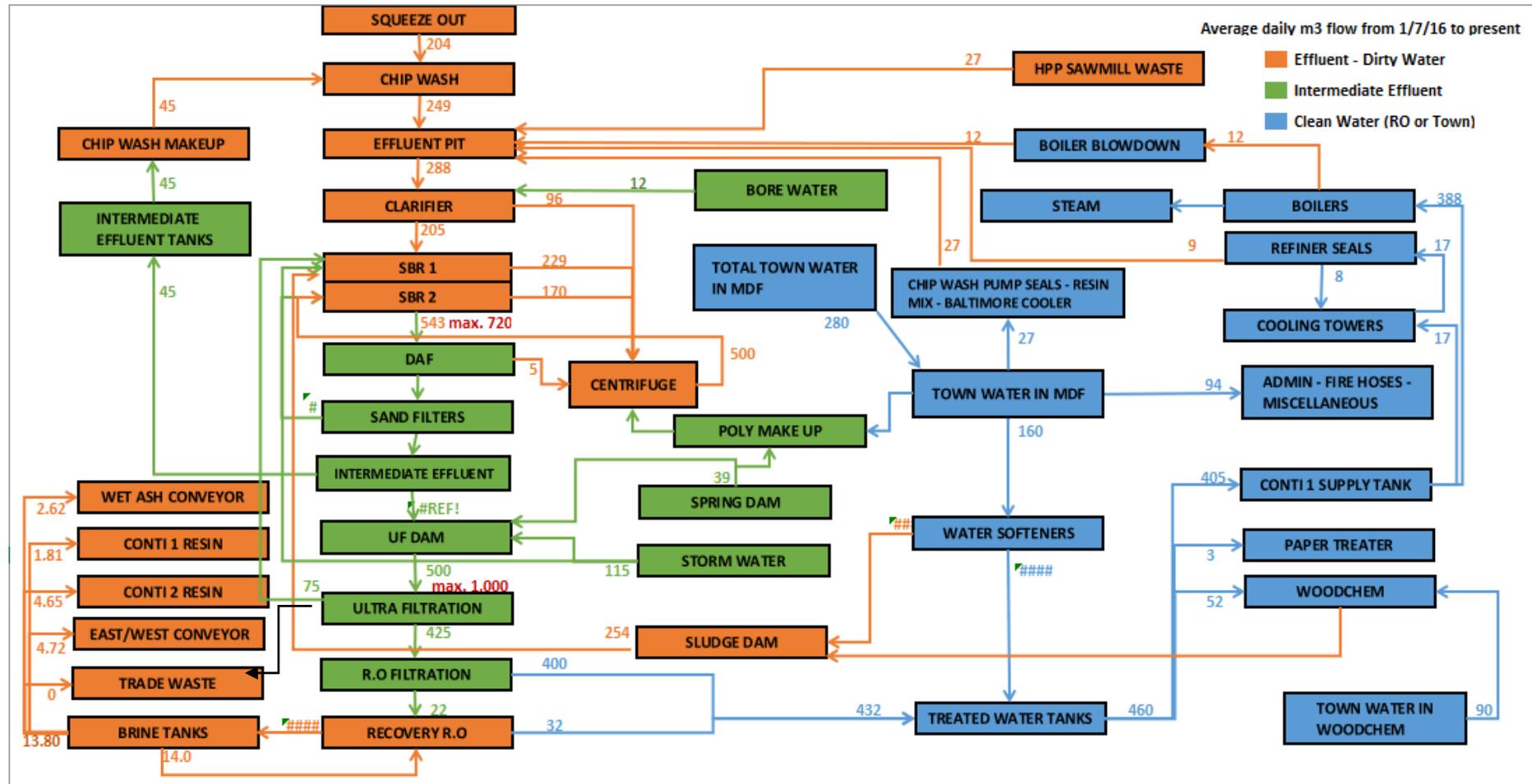
3.2 Water Consumption

Inflow water sources to the Borg Panels facility (refer **Figure 1**) include:

- Town Water – average daily flow of 280m³ metered at entry to the facility on Lowes Mount Road; and
- Recycled water from water treatment plant – average total daily flow of 432m³. Recycled water is made up of:
 - Spring Dam Water (Ground Water Access Licence 28951 (refer **Section 2.5**)) – average daily flow of 39m³ up to a maximum extraction of 28 mega litres per annum, metered at Spring Dam pump station;
 - Harvested Stormwater – average daily flow of 115m³ metered at FF2 Dam meter;
 - Process Water – average daily flow of 280m³ metered at the process locations shown on **Figure 1**.

The total daily site water usage for the facility is estimated at approximately 750m³. All water meters are read and recorded daily.

Figure 1 Average Daily Flow



3.3 Water Treatment

All site effluent (wastewater) is treated in the water treatment plant. Effluent is also received from HPP Sawmill Site 2 and Woodchem in the form of boiler blow down, cooling tower bleed water and wash down water.

The water treatment plant utilises filtration and biological degradation to remove contaminants from the water for re-use, capturing over 400kL per day from the site and reusing it in the manufacturing process.

Borg Panels produces most of the incoming effluent and consumes a large proportion of recycled water, mainly in steam generation. Effluent is generated by the washing and squeezing of chip during the initial stages of MDF manufacturing. The volume of effluent generated depends on chip volumes (production rates) and chip moisture. Moist chip will generate more waste effluent than dry chip and typically a greater volume of effluent is generated during the winter months. Air emission control devices that were installed for the particleboard line also generate effluent. This is from the WESP and SAP90 purification systems. Approximately 400-500kL/day of effluent is generated by the facility.

High quality recycled water produced by the Reverse Osmosis (RO) system is used for the boiler (300-400kL/day approximately) and Woodchem (100-150kL/day approximately). The Paper Treater also requires a small amount of high-quality RO or soft water.

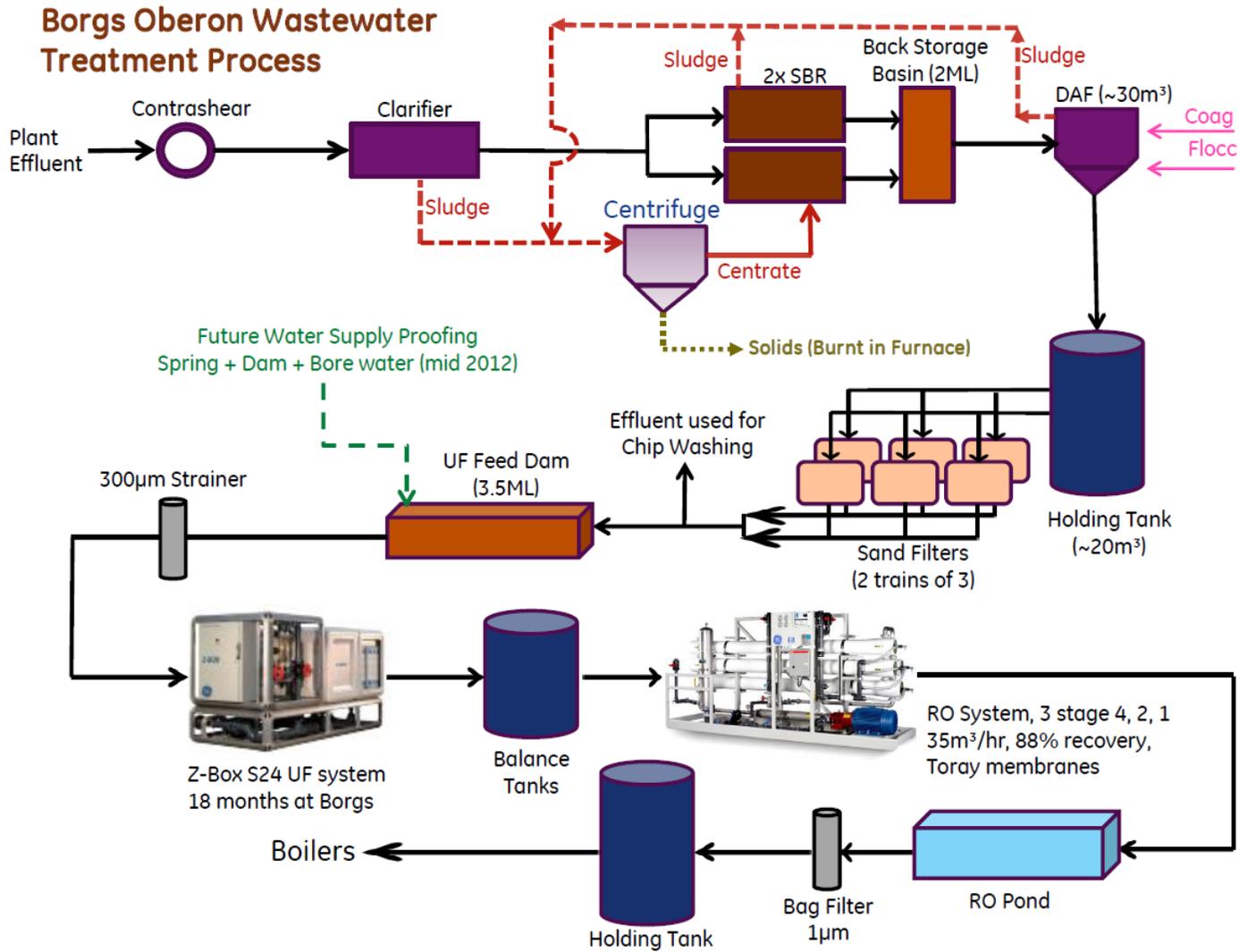
Intermediate effluent or low-quality recycled water treated by dissolved air floatation (DAF) is used for the chip wash systems (approximately 50kL/day). Dewatered waste sludge (biomass) from the centrifuge is sent to the heat plant as fuel for the furnace.

Figure 2 provides an overview of the major components of the water treatment system.

3.4 Wastewater

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 recycled within the water treatment plant and reused by way of dilution in the MDF and particleboard manufacturing process.

Figure 2 Major Components of Water Treatment System



4 Stormwater Management

4.1 Overview

Generally, the site grades towards the east, and the licenced discharge points to the tributary which runs to Kings Stockyard Creek are located in the north eastern corner of the site. A high ground water table is known to exist at the site and generally flows towards the north eastern corner. This fluctuating ground water table is a significant constraint of the site since excavation below this level cannot occur without consequential groundwater recharging taking place however is not expected that any excavation will occur which will intercept the groundwater table.

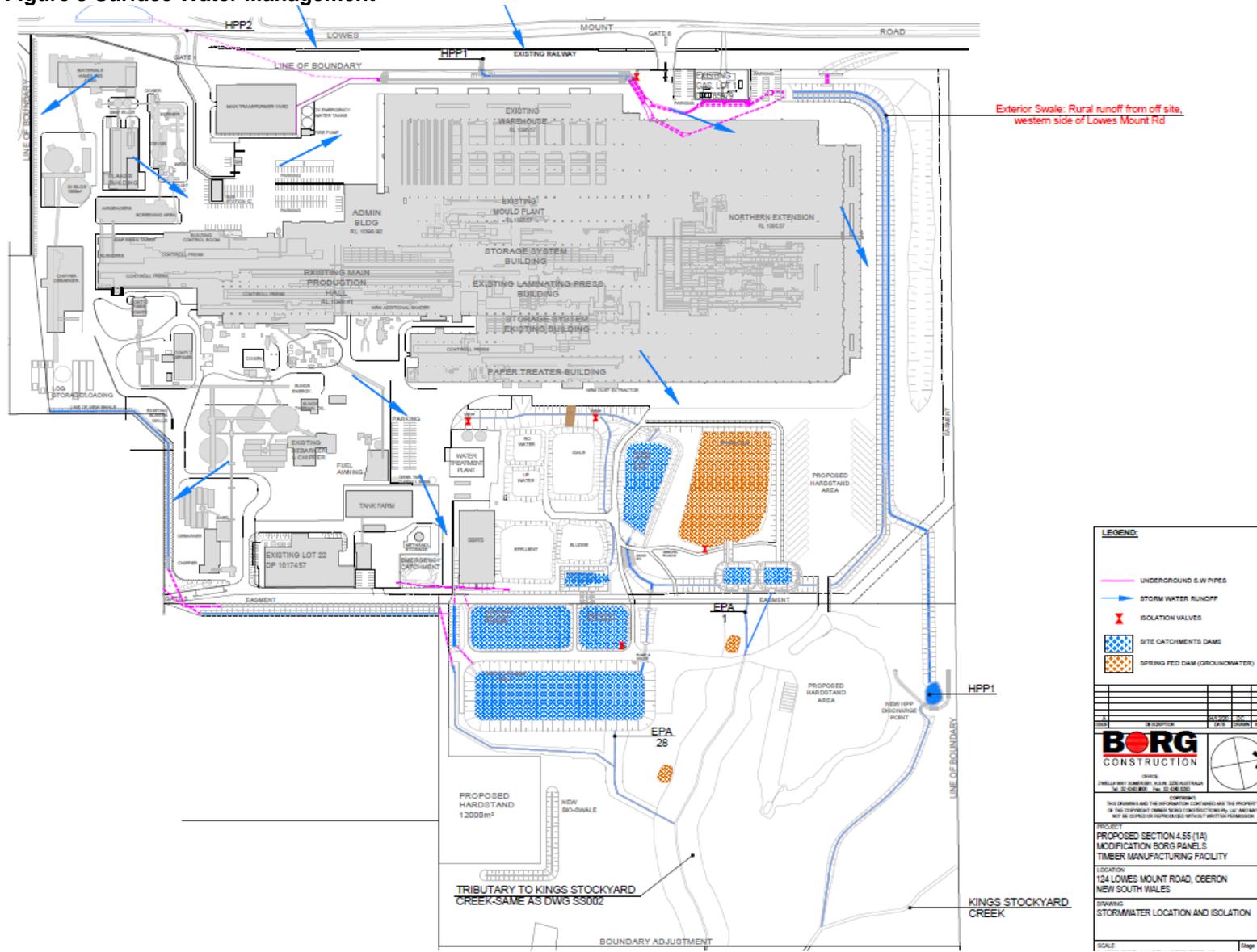
The surface water management system includes runoff from adjoining properties in the Oberon Timber Complex on the western side of Lowes Mount Road, and operates as follows:

- Runoff from Structaflor and Highland Pine Products (HPP) facilities flow across Lowes Mount Road and is directed onto the site in a 'dirty' water swale. This swale was extended to provide a longer flow path during construction under SSD 7016.
- Clean water from rural undeveloped parts of Lowes Mount Road is also directed onto the site in a 'clean' water swale, which runs alongside the dirty water swale.
- Borg Panels roof runoff and runoff from the western side of the facility is directed into the dirty water swale and then conveyed into the existing stormwater flush basin (Flush basin 1) and from there, into the newly constructed stormwater flush basin (Flush basin2) with a holding capacity of 9ML.
- Runoff from the eastern and open parts of the site, which contains fine fibrous wood material, is directed first to a gross pollutant trap and then into the stormwater treatment pond.
- Runoff from the southern part of the facility drains into open swales before being piped to the new stormwater flush basin.
- Emergency catchment dams strategically located to contain runoff in the event of a contamination event.

In accordance with EPL 3035, Borg Panels monitor discharge from the 'v'-notch weir (EPA Point 1) and from the new stormwater flush basin (EPA point 28) to the unnamed creek that discharges to Kings Stockyard Creek. The location of the 'v'-notch weir is on the outflow of the southern dam (MDF Dam). The outflow from the new stormwater flush basin is on the eastern side of the basin where a spill way has been constructed. Overflow from this spill way makes its way through riprap to existing grassed swales connected to the tributary which flows to Kings Stockyard Creek. This is shown on **Figure 3**.

Figure 3 shows the current design specifications including the additional stormwater treatment and storage basin (First Flush Basin), additional effluent storage pond and emergency spill catchments.

Figure 3 Surface Water Management



Exterior Swale: Rural runoff from off site, western side of Lowes Mount Rd

4.2 Objectives

The main objectives of the stormwater management system are to:

- Ensure water quality discharging from the site adheres to the sites various Environmental Protection Licence 3035 requirements;
- Be capable of conveying the 100-year ARI rainfall event to the discharge location on Kings Stockyard Creek;
- Provide adequately sized retention basins to allow water to be reused on-site;
- Minimise peak flow rates; and
- Maintain the separation of upstream HPP Site 1/rural runoff clean stormwater flows.

4.3 Site Strategy

The main stormwater strategy for the site is to convey and treat stormwater from both the Borg Panels facility and upstream sites using large, flat grassed swales, underground pipe network and stormwater flush basins. The two flush basins allow water to be captured for reuse on-site and for sediments to settle out. A detailed schematic of the stormwater system is shown in **Figure 3**.

A 1050 mm diameter culvert under Lowes Mount Road connects Structaflor/HPP2 with the western grass dirty water swale. A 900 mm diameter culvert connects HPP Site 1 with the western clean water swale.

Due to the flat topography of the site the western grassed swales act as elongated basins holding a significant volume of water prior to discharging into the channel systems downstream from Gate 6.

These swales are linked to the channel systems which run along the northern boundary via four (4) x 1050mm diameter culverts constructed in two separate arrangements. The inlet levels to these culverts are raised slightly higher than the upstream swale invert and a large concrete pit connects the culverts below Gate 6.

The northern boundary channel system continues to separate the Structaflor/HPP2 (herein referred to as HPP2) and Borg flows from the HPP1/rural runoff flows (herein referred to as HPP1). The culverts and swales are sized to convey the 100-year flow rates from upstream catchments. In rainfall events greater than 1-year ARI water from all sites converge.

As can be seen in Figure 3, the clean water swale conveying HPP1 will be directed into a new basin/discharge point located in the north-eastern part of site. This diversion will occur once the MDF and HPP1 catchment basins are removed and infrastructure installed to direct site runoff to each of the flush basins. Water from the Spring Dam will continue to be conveyed via grassed swale to the tributary which runs to Kings Stockyard Creek.

Water from the southern and eastern parts of the site drains towards the north eastern corner and licenced discharge points through a series of swales, underground pipes and sediment basins. Water from the log yard containing fine fibrous wood material, is directed first to a gross pollutant trap and then into the stormwater flush basins.

4.4 Controls

Infrastructure for the protection of stormwater quality at the Borg Panels facility includes the following:

- Bunding of chemical and petroleum products tanks;
- Segregation of stormwater and process waters;
- Treatment and reuse of harvested stormwater;
- Gross pollutant trap to remove fine fibrous wood material; and
- Penstock gate valves to allow for shutting down the stormwater system in the event of a spill or fire emergency.

4.5 Maintenance

Regular cleaning, through manual sweeping and mechanical street sweeping of production areas is undertaken to help prevent dirt, wood fines and chip from entering the stormwater system. The gross pollutant trap also catches debris that is not swept up, further preventing entry to the stormwater basins. This cleaning of production areas helps ensure the final water quality discharging from the site is within EPL limits.

Regular maintenance of the penstock, headwall and other valves, trash racks, gross pollutant trap, and 'v'-notch weir ensure the system runs smoothly and that in the event of an emergency all items of equipment are operational. These areas are inspected at least monthly with condition and any identified actions captured on the Monthly Inspection Checklist. Action items are tracked using DataStation.

Due to the flat longitudinal swale grades it is possible that sediment will build up in the swale system. The swales and basins are to be cleaned when a significant amount of sediment builds up to keep the swales operating at their optimal performance level.

Monthly inspections are undertaken which identify the need to clean any excess sediment build up.

5 Erosion and Sediment Control

5.1 Overview

Changes in land use have the potential to disturb soils, alter drainage patterns and affect environmental values both on and off site (Landcom, 2004). The operation is a MDF and particleboard manufacturing facility with limited potential for erosion and sediment generation. The facilities and surface water management system have been developed over time as the site has developed and any undeveloped areas are well vegetated.

Erosion is mostly a short-term problem that results from the removal of vegetation and ground cover for construction purposes. The MDF infrastructure areas were constructed many years ago and have become stabilised over time. The newer infrastructure constructed for the particleboard line under SDD 7016 has seen an increase in hardstand area, reducing the potential for erosion and excess sedimentation to occur across the facility.

5.2 Site Activities and Potential for Soil Erosion

The MDF manufacturing facility is well established and areas that were disturbed during the construction phase have been stabilised. Construction for the particleboard facility is

complete though subsequent modifications see continued additions to the original development consent under SSD 7016. Where these activities have potential to impact on erosion and sedimentation, management and mitigation measures are captured in the Construction Environmental Management Plans.

Surface water has the potential to cause erosion and is managed as part of the normal site operations. Figure 3 shows the surface water management system for the entire Borg Panels site.

Several types of erosion control measures have been implemented with the aim of preventing soil erosion and the entry of sediments into any of the surrounding water bodies.

Open swales and drains shown on Figure 3 are typically constructed with either a parabolic or trapezoidal cross section rather than a V-shape, which can be easily eroded. Channels and associated banks have been grassed or had concrete applied to assist with stability during water flows and to minimise sediment movement. Channels are periodically inspected (at least monthly or following significant rainfall events) to identify and repair damage caused by scour, sediment deposition, channel obstruction and loss of vegetative cover.

Stormwater flush basins constructed within the surface water management system shown on Figure 3 have been designed and located to contain dirty water runoff which is then typically harvested for reuse in the production process.

This infrastructure is regularly maintained and cleaned out once the capacity of the structure is deemed to have been reduced significantly. The structures are inspected after major rainfall events and repairs made as required.

5.3 Maintenance of Erosion and Sediment Controls

The Borg Panels facility has been operational for many years and there are relatively limited opportunities for erosion and sediment generation at this established site, including for the new particleboard facility. Regardless, regular inspection and maintenance of permanent structures ensures that the water management system and erosion controls remain effective. At active disturbed areas, regular inspections are undertaken to monitor the condition and effectiveness of controls.

Measures to minimise erosion and sediment generation include:

- Identification and review of surface activities that may change surface water flows and result in erosion;
- Minimising the clearing of vegetation and where clearing is necessary site rehabilitation of disturbed areas;
- Regular checking of rehabilitated areas;
- Installation of temporary and/or additional permanent controls to manage locations that have been identified as requiring attention;
- Diversion of surface and road runoff away from disturbed areas;
- Regular inspection and cleaning of catch drains and structures following storm events or other activities such as vehicle movements that may result in damage; and
- Clearing of excessive vegetation and weeds along drainage lines.

6 Surface Water Monitoring Program

Surface water monitoring is undertaken in accordance with the requirements of EPL 3035 issued under the *Protection of the Environment Operations Act 1997*.

6.1 Location of Monitoring/Discharge Points

Surface water is discharged from site via EPA Identification/Licensed Discharge Points 1 and 28. Both points discharge to a tributary (unnamed creek) of Kings Stockyard Creek as shown on Figure 3.

The locations and type of surface water monitoring and discharge points are listed in **Table 3**.

Table 3 – EPL 3035 Surface Water Monitoring and Discharge Points

EPA Identification No.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Discharge to waters; Discharge quality monitoring	Discharge to waters; Discharge quality monitoring	Discharge from 'v'-notch weir to unnamed creek that discharges to Kings Stockyard Creek as shown on the monitoring point figure provided to the EPA on 22 August 2017
28	Discharge to waters; Discharge quality monitoring	Discharge to waters; Discharge quality monitoring	Discharge from First Flush Basin to unnamed creek as shown on monitoring point figure provided to the EPA on 22 August 2017

6.2 Concentration Limits

The concentration of a pollutant discharged from EPA Identification/Licensed Discharge Points 1 and 28 must not exceed the water concentration limits specified in **Table 4**.

Table 4 – Water Concentration Limits EPA Identification Point 1

Pollutant	Units of Measure	50 percentile concentration limit	100 percentile concentration limit
Aldrin	µg/L		0.3
Biochemical Oxygen Demand (BOD)	mg/L		20
Colour	Hazen	80	160
Dieldrin	µg/L		0.3
Methylene Blue Active Substances (MBAS)	mg/L		0.5
Nitrogen (Total)	mg/L		10
Oil and Grease	mg/L		10
pH	pH		6.5-8.5
Phosphorus (Total)	mg/L		0.3
Total Suspended Solids	mg/L		50

6.3 Requirement to Monitor and Frequency

For EPA Identification/Licensed Discharge Points 1 and 28 Borg Panels must monitor, by sampling and obtaining results of analysis, the concentration of each pollutant specified in **Table 4**.

Sampling is undertaken in accordance with the *Approved Methods for the Sampling and Analysis of Water Pollutants in New South Wales* (DEC, March 2004). Water samples are collected by trained personnel and analysed by NATA accredited laboratories.

The frequency of sampling is weekly during any discharge.

6.4 Surface Water Monitoring Data

All surface water monitoring data is uploaded monthly to Borg Panels website:

<https://www.borgs.com.au/locations/oberon-nsw/>

7 Surface Water Impact Assessment Criteria

This section sets out the surface water response plan for Borg Panels facility. Potential impacts on surface water, triggers, actions and responsibilities for addressing impacts are summarised in **Table 7**.

7.1 Water Quality Exceedance

Should water quality monitoring indicate that the criteria set out in EPL 3035 (**Table 4**) have been exceeded, Borg Panels will conduct an incident investigation into the potential sources and/or causes.

As the limits specified in EPL 3035 are the 100-percentile concentration limit, all exceedances will generate an investigation, however the exceedance will need to be determined to be *causing or threatening material harm to the environment* to trigger the pollution incident response measures detailed in the Pollution Incident Response Management Plan.

In the event that a *pollution incident causes or threatens material harm* to the environment, the Borg Panels Pollution Incident Response Management Plan (PIRMP) is to be immediately implemented, including immediate notification to authorities as outlined in the PIRMP.

Environmental incidents which are identified as *not* causing or threatening material harm to the environment should be contained if safe to do so, then the Borg Panels Incident Reporting procedure undertaken. Exceedances classified as not causing or threatening material harm to the environment will be reported annually in the Annual Review.

Full details on environmental incident investigation and reporting are provided in the OEMP.

7.2 Unlicensed Discharge

In the event of an unlicensed discharge, Borg Panels will notify the EPA immediately and undertake an investigation of the discharge event. In the unlikely event that a discharge poses a threat to health of surrounding property owners and occupiers, Borg Panels will implement the Pollution Incident Response Management Plan (PIRMP), which includes notification with those likely to be affected. A list containing surrounding property owner's and occupier's contact details is held by Borg Panels.

The notification procedure is to be initiated by the Environment Coordinator for Borg Panels. In the absence of the Environment Coordinator the notification procedure is to be initiated by the person designated as fulfilling the responsibilities of the Environment Coordinator. Notification will occur within 24 hours of it becoming known to site personnel that surrounding property owners and occupiers are likely to be adversely affected by discharges from the site. A record will be kept of all property owners and occupiers contacted and this will be recorded in DataStation by the Environment Coordinator.

An investigation report on the unlicensed discharge will be prepared and provided to the EPA or other relevant agency, including DPIE.

7.3 Contingency Plan to Manage Any Unpredicted Impacts

Should impacts eventuate that have not been predicted or considered in the SWMP, the following contingency plan will apply:

- 1) Assess whether impacts constitute a material risk of harm to the environment, and trigger the PIRMP and reporting requirements of the OEMP if necessary;
- 2) Investigate the cause of the unpredicted impact. This may include onsite process owners or external specialists as required;
- 3) Consult with government agencies regarding the unpredicted impact if the impact is material and require additional management strategies; and
- 4) Revise the SWMP.

The scale of the unpredicted impact will inform the level of response required through this process and whether the impact is material and therefore requires external notification.

Table 7 – Surface Water Response Plan – Triggers, Actions and Responsibilities

Aspect	Trigger	Action	Timeframe	Responsibility	Further Information
Water quality impacts	Exceedance of water quality criteria set out in EPL 3035 (Table 4)	Determine if the event is a pollution incident causing or threatening material harm to the environment. If yes, implement the Borg Panels Pollution Incident Response Management Plan (PIRMP) immediately. If not a pollution incident causing or threatening material harm to the environment, follow the Borg Panels Incident Reporting procedure.	Material harm incidents are to be reported immediately to DPIE, EPA and any other relevant agency. A written report on the incident is to be provided within 7 days. Incidents/exceedances classified as not causing or threatening material harm to the environment will be reported annually in the Annual Review.	Environment Coordinator/Manager	Section 7.1
Surface water discharge	Surface water discharge that is not licenced under EPL 3035	Notify DPIE, EPA and any other relevant agency and potentially affected persons (where necessary). Trigger the Pollution Incident Response Management Plan immediately if required (PIRMP material harm incident). Investigate and prepare report outlining causes, impacts and recommended mitigation measures. Supply report to agencies. Implement report recommendations.	Notify DPIE, EPA and any other relevant agency immediately. Trigger PIRMP immediately if of sufficient magnitude. Provide written report within 7 days.	Environment Coordinator/Manager	Section 7.2

8 Reporting

8.1 Monitoring Data Review

The Environment Coordinator and/or Environmental Manager will review all surface water quality monitoring results following a licenced discharge and ensure corrective action is taken where results or trends indicate non-compliance or risk of future non-compliance to the development consent or EPL criteria.

The surface water results are included in the Annual Review. The Annual Review includes a summary of monitoring results during the past year, comparison against the water quality criteria specified in the EPL, and summary of the previous year's monitoring results.

The Annual Review also identifies any trends in water quality impacts and any non-conformance over the year, as well as describing any actions currently implemented or planned to ensure compliance with the water quality impact criteria. The Annual Review is available to the relevant authorities including the Department of Planning, Industry and Environment (DPIE) and Environment Protection Authority (EPA). It is also placed on the company's website along with a summary of environmental monitoring results in accordance with the requirements of Development Consent SSD 7016 and EPL 3035.

The EPA is provided with an annual return, statement of compliance and a monitoring and complaints summary annually as required by EPL 3035.

Borg Panels conducted an Independent Environmental Audit in 2018 and will continue at three yearly intervals thereafter in accordance with SSD 7016 condition of consent C15.

8.2 Reporting

8.2.1 Annual Review

In accordance with Development Consent SSD 7016 an Annual Review report is prepared and submitted to the Secretary Department of Planning, Industry and Environment on an annual basis.

The Annual Review summarises the environmental performance of Borg Panels activities for the reporting year. The results of the monitoring undertaken as specified in this SWMP will be compared against the impact assessment criteria in the relevant environmental management plans or monitoring programs and/or limits contained in Development Consent SSD 7016 and EPL 3035 to assess the effectiveness of environmental management.

8.2.2 Exceedance of Criteria / Environmental Incident Management

Notification procedures and actions upon identification of an exceedance of any impact assessment criteria or management levels will be as per the Operational Environmental Management Plan (OEMP), and the Pollution Incident Response Management Plan.

8.2.3 Complaints

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

9 SWMP Review

In accordance with Development Consent SSD 7016 Condition C10, this SWMP 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.

The SWMP will also be updated as required to reflect any change to on-site management or monitoring programs referred to in this document, or any changes to Development Consent SSD 7016 or EPL 3035.

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