Construction Environmental Management Plan

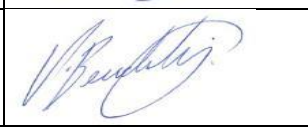
Timber Processing Facility – Particle Board

124 Lowes Mount Road, Oberon NSW

Borg Construction Pty Ltd

17 May 2021

Revision History

Rev No.	Revision Date	Author / Position	Details	Authorised	
				Name / Position	Signature
0	13/04/17	Carly McCormack Planning and Environmental Officer	Draft	Victor Bendevski Environmental and Regulatory Compliance	
1	27/04/17	Carly McCormack Planning and Environmental Officer	Final Draft	Victor Bendevski Environmental and Regulatory Compliance	
2	31/05/17	Carly McCormack Planning and Environmental Officer	Final	Victor Bendevski Environmental and Regulatory Compliance	
3	29/10/18	J Blomberg Environmental Manager	Review post IEA of SSD 7016	V Bendevski Environmental and Regulatory Compliance	
4	17/05/21	J Blomberg Environmental Manager	Review and update as per SSD 7016 condition C10	V Bendevski Environmental and Regulatory Compliance	

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1 Introduction

1.1 Purpose of the CEMP

This Construction Environmental Management Plan (CEMP) details the environmental management and control measures which are to be implemented for construction activities associated with installation of the particle board manufacturing facility, and alterations and additions to the existing medium density fibreboard facility (the Project), to ensure the works are managed so as to reduce adverse impacts on the environment.

The CEMP specifies actions, responsibilities, conformance requirements and mitigation activities to be followed during the construction phase of the Project.

The mitigations and measures detailed in this plan are required to achieve compliance with the requirements of Development Consent SSD 7016 and commitments contained in the Environmental Impact Statement (EIS) and Response to Submissions (RTS) Report.

Prior to the commencement of construction, this CEMP was approved by the Secretary of the then Department of Planning and Environment (now Department of Planning, Industry and Environment (DPIE) on 2 June 2017.

This CEMP is a live document and will be reviewed and updated where necessary to reflect changes introduced by the Project team, site specific outcomes, non-conformances and recommendations arising out of inspections, meetings and audits

Though initially prepared to satisfy the requirements of Conditions C1 and C2 of Schedule 2 in Development Consent SSD 7016 for the Project, this CEMP has been reviewed and updated where necessary as per condition C10.

This CEMP should be read in conjunction with other Project construction and operational plans including:

- Construction Noise Management Plan;
- Construction Traffic Management Plan;
- Spring Fed Dam Reclamation Plan;
- Borg Panels Operational Environmental Management Plan (OEMP);
- Borg Panels Emergency Plan;
- Borg Work Health and Safety Management System;
- Fire Safety Study;
- Hazard and Operability Study;
- Final Hazard Analysis; and
- Construction Safety Study.

1.2 Objectives of the CEMP

The objectives for the Project CEMP are summarised in **Table 1**.

Table 1 – CEMP Objectives

Objectives	Targets	Execution
Compliance with Environmental Legislation	• 100% compliance with all legal requirements	• Review of audit reports
Compliance with Development Consent Conditions	• 100% compliance with consent conditions	• Review of audit reports
Avoidance of Environmental Harm	• Compliance with CEMP and environmental procedures	• Installation and monitoring of environmental controls • Environmental reporting, auditing and recording • Awareness and education
Conformance with best practice environmental management procedures	• Conduct environmental site inductions • Achieve targets in plans and checklists • Undertake environmental inspections • Undertake audits as per audit program • Report and log all environmental incidents and non-conformances • Assign and complete corrective actions in designated timeframe	• Training of personnel in CEMP measures • Environmental monitoring and audits • Review of incidents and non-conformances register • Review of environmental reports
Maintain commitments to stakeholders and community	• Minimal complaints • Respond to all complaints within 48 hour period	Review of complaints register

1.3 Document Control

This CEMP will be issued to the Borg Construction Project Manager and relevant extracts to other parties as controlled copies.

Revisions to this CEMP may be required during the Project to reflect changing circumstances. Revisions may result from:

- Management review;
- Audit (either internal or external);
- Complaints, incidents or non-conformance reports; and
- Changes in legislation.

1.4 Records

The Borg Construction Project Manager shall maintain environmental records as part of the Project records. The following records (**Table 2**) will be maintained during construction.

Table 2 – Environmental Records

Record	Type	Minimum length of time to keep record from completion of construction
Daily diaries	Hard copy	4 years
Inspections	Electronic copy	4 years
Waste dockets (if any)	Hard/Electronic copy	4 years
Monitoring results (including test results as required)	Electronic copy	4 years
Audit reports	Electronic copy	4 years
Incident reports	Electronic copy	4 years
Training records (e.g. Induction)	Electronic copy	4 years
Complaints records	Electronic copy	4 years
Monthly environmental management reports	Electronic copy	4 years
Materials tracking documentation (VENM, ENM, wastes listed in EPL3035)	Hard/Electronic copy	4 years

1.5 Corporate Safety, Health and Environment Policy

Borg Construction is committed to the management of our business in an environmentally responsible manner, to care for the environment in which we live, work and to sustain its quality for the benefit of future generations.

We are committed to being a world-class leader in Safety, Health and Environmental Management.

Safety No job is so important and no task so urgent that we cannot take time to perform our work safely. The safety of people must come first.

Environment We will use resources efficiently, minimise waste and emissions, observe all relevant laws and respect the interests of the community.

Borg believes continuous development of our people and processes will ensure we are always using our finite resources in the most efficient way.

2 Compliance Requirements

2.1 Development Consent Conditions

The construction phase of the Development is subject to conditions contained in Development Consent SSD 7016 dated 29th May 2017 and the following modifications:

- MOD 1 – extension of mouldings warehouse, reorientation of materials handling building, layout changes 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 20th November 2018);

- MOD 2 – installation of an electricity generation gas turbine and ancillary equipment (approved 29th November 2019); and
- MOD 3 – additional materials handling equipment, extension to northern warehouse, changes to the site surface water system and construction of further hardstand (approved 22nd May 2020).

There was one new consent condition included in MOD 1 (C2(h)) which required a Spring Fed Dam Reclamation Plan (as shown in Table 1). Since being approved by DPIE on 12th of July 2019 the works associated with this condition are now complete and this Plan therefore does not require a review or update under condition C10.

There were no new consent conditions for construction in MOD 2 or MOD 3.

The specific conditions relevant to the construction phase are detailed in Table 1 below. The full set of Development Consent conditions can be made available upon request.

Table 1 – Development Consent Conditions

No.	Requirement	Document Reference
	Construction Environmental Management Plan	
C1	The Applicant must prepare a Construction Environmental Management Plan (CEMP) to the satisfaction of the Secretary. The CEMP must:	This Plan
	a) be approved by the Secretary prior to the commencement of construction;	
	b) identify the statutory approvals that apply to the Project;	Section 2.3
	c) outline all environmental management practices and procedures to be followed during construction works associated with the Project;	Section 7
	d) describe all activities to be undertaken on the site during construction of the Project, including a clear indication of construction stages;	Section 4
	e) detail how the environmental performance of the construction works will be monitored, and what actions will be taken to address identified adverse environmental impacts;	Sections 7 & 8
	f) describe the roles and responsibilities for all relevant employees involved in construction works associated with the Project; and	Section 5
	g) include the management plans required under Condition C2 of this consent.	See below
C2	As part of the CEMP required under Condition C1 of this consent, the Applicant must include the following:	
	a) Traffic Management (Condition B34);	Section 7.8 Appendix D
	b) Dust Management (Condition B3);	Section 7.5
	c) Noise Management (Condition B15);	Section 7.4 Appendix C
	d) Mobile Wood Chipper Operation Management (Condition B24);	Section 7.11 Appendix F
	e) Erosion and Sediment Management (Condition B29);	Section 7.3
	f) Waste Management (Condition B50); and	Section 7.7

	g) Community Consultation and Complaints Handling (Condition B58).	Sections 2.5 & 11.4
	h) Spring Fed Dam Reclamation Plan (Condition B33A)	Section 7.12 Appendix G

2.2 Legislative Compliance

The environmental compliance requirements and legislative context of this Project are listed below and addressed in the Environmental Impact Statement for the Project. The primary statutory instruments applicable to this project include but are not limited to those listed in the following sub-sections.

2.2.1 Commonwealth Legislation

- *Environment Protection and Biodiversity Conservation Act 1999*

2.2.2 State Legislation

- *Environmental Planning and Assessment Act 1979*
- *Protection of the Environment Operations Act 1997*
- *Threatened Species Conservation Act 1995*
- *National Parks and Wildlife Act 1974*
- *Native Vegetation Act 2003*
- *Heritage Act 1977*

2.2.3 State Environmental Planning Policies

- State Environmental Planning Policy (State and Regional Development) 2011
- State Environmental Planning Policy 33 – Offensive and Hazardous Development
- State Environmental Planning Policy 55 – Remediation of Land

2.2.4 Regional Context

- Central West and Orana Regional Growth Plan

2.2.5 Local Planning Instruments and Controls

- Oberon Local Environmental Plan 2013
- Oberon Development Control Plan

2.3 Approvals, Licences and Permits

The following environmental approvals, licences or permits are associated with the Project:

- Environment Protection Licence 3035 (EPL 3035) issued under Section 55 of the *Protection of the Environment Operations Act 1997* applies to the premises for the scheduled activities chemical production and wood or timber milling or processing.

- In the event of an Aboriginal artefact or site being discovered during earthworks, excavation or disturbance, work in the immediate area must stop, and the Regional Operations Group of the OEH, Council and the Registered Aboriginal Parties are to be consulted. Under the *National Parks and Wildlife Act 1974*, a permit is required from the OEH for consent to disturb or destroy any Aboriginal artefact or site. An unexpected finds protocol for heritage items is included as **Appendix A**.

- If any archaeological relics are uncovered during the course of work, then all works shall cease immediately in that area and the OEH NSW Heritage Division contacted.

Depending on the possible significance of the relics, an archaeological assessment and an excavation permit under the *Heritage Act 1977* may be required before further works can continue in that area. An unexpected finds protocol for heritage items is included as **Appendix A**.

- Water Supply Works approval 80WA715797 issued under s87B of the Water Management Act 2000 for extraction of groundwater.

- Department of Planning, Industry and Environment Development Consent SSD 7016

Note the above list is not necessarily comprehensive and Borg Construction shall ensure necessary approvals, licences and permits are obtained where applicable for all construction activities.

2.4 Consultation with Key Agencies

Consultation has been undertaken with key agencies throughout the design phase and environmental assessment of the Project, including:

- Department of Planning, Industry and Environment
- Roads and Maritime Services (RMS)
- Department of Premier and Cabinet
- Environmental Protection Authority
- Safework NSW
- Office of Water
- Oberon Shire Council
- Department of Primary Industries
- Office of Environment and Heritage
- NSW Fire Service

Issues raised by each of the above agencies are included in the EIS, Part F Section 9.

In addition, submissions were received following the exhibition of the EIS from OEH, NSW EPA, Oberon Shire Council, Safework NSW, RMS and Office of Water. Submissions were responded to in the *Response to Submissions Timber Processing Facility (Particle Board)* Reports dated 24 October 2016 and 6 December 2016.

2.5 Community Consultation

Condition B58 of Schedule 2 in Development Consent SSD 7016 for the Project requires:

"B58. The Applicant must consult with the community as required under Conditions C1 and C4 for the Development, including consultation with the nearby sensitive receivers, relevant regulatory authorities, Registered Aboriginal Parties and other interested stakeholders."

Close community liaison will be maintained to ensure local residents are kept up to date on the progress of the Project, and to provide an avenue for communication between the community and the Project team.

2.5.1 Community Consultative Committee

Borg has an established joint Community Consultative Committee (CCC) that meets nominally quarterly to discuss environmental and operational aspects of the Borg Panels site. This existing CCC will be utilised to discuss and address general construction impacts

and mitigation measures. The CCC meeting will also provide a forum for feedback to Borg in relation to the environmental management of the Project.

2.5.2 Opportunities for Information Exchange

Borg has in place the following avenues to register inquiries and complaints related to construction and operational activities:

- A 24-hour free call community liaison line (1800 802 795)
- Postal address for written complaints (Borg Panels, Private Mail Bag 1, Oberon NSW 2787)
- Email address for electronic complaints (oberon_site@borgs.com.au)

The telephone number, postal and email address will be clearly displayed on a sign near the entrance to the construction site, in a position that is clearly visible to the public. This information will also be widely disseminated in the community and included on public information, which may include the website, local area advertisements, letterbox notifications and Project specific fact sheets.

3 Existing Environment

3.1 Existing Operations

Borg Panels operates an existing reconstituted wood-based manufacturing facility in Oberon, NSW. This facility manufactures 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 Particle Board; and
- Treated paper for the lamination of MDF and Particle Board.

The infrastructure includes:

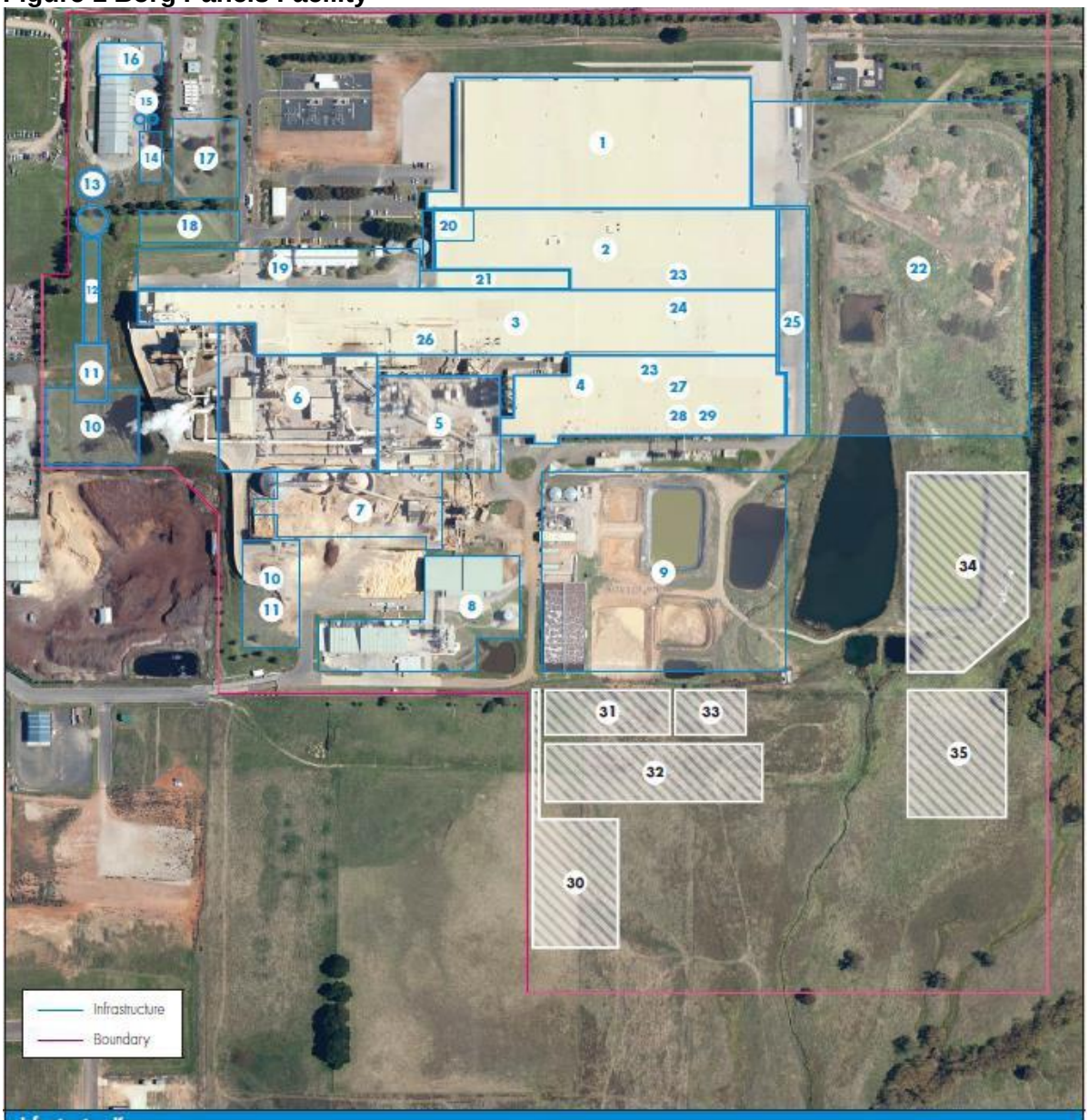
- A number of large industrial scale buildings which contain various processes involved with the manufacture, storage and dispatch of MDF, value add MDF products and particleboard products;
- Concrete hard stand areas;
- A two-storey administration/amenities building with associated staff car parking;
- Various necessary items of infrastructure including venting, conveyors and the like;
- Other facilities/buildings associated with the use of the land (including maintenance areas, security entry/exit gates, weigh bridges and the like); and
- Fencing, landscaping, drainage and other site facilities.

The current maximum output of the site is 380,000m^3 of MDF board and 500,000m^3 of particleboard annually.

Figure 1 below displays the site, site boundary and site facilities both existing and proposed.

The site operates under Development Consent SSD 7016. In addition, Environment Protection Licence 3035 (EPL3035) applies to the site.

Figure 1 Borg Panels Facility



Infrastructure Key

1 Warehouse	**12** Conveyor	**24** Additional Laminating Line
2 Mouldings Plant	**13** Silos	**25** Building Extension
3 Existing Manufacturing Plant	**14** Flaking Building	**26** Additional Sanding Line
4 Existing Manufacturing Plant	**15** Silos	**27** Automated Paper Storage
5 Heat Plant	**16** Building for Fines and Sawdust Storage	**28** Impregnated Paper Treater
6 Manufacturing and Processing Plant	**17** Dryer Area	**29** Impregnated Paper Treater
7 Log Yard	**18** Screening Area	**30** Proposed Hardstand
8 Lot 22 DP1017457	**19** New Press Production Hall	**31** Effluent Storage
- not included in submission	**20** New Administration Area	**32** First Flush Basin
9 Water Recycling Plant	**21** Automated Particle Board Warehouse	**33** Emergencyy Catchment
10 Log Yard	**22** Automated Storage Warehouse System	**34** Hardstand Include Western Area
11 Enclosed Chipper / Debarker	**23** Automated Storage Warehouse System	**35** Hardstand Include Eastern Area

4 Project Description

4.1 General Description of the Project

The Project is the expansion of the existing Borg Panels timber processing facility. The components of the expansion under the initial Development Consent SSD 7016 approval date 29th May 2017 are:

- Allow for the construction of a dedicated Particle Board Manufacturing Line to allow Borg to continue their growth and remain internationally competitive;
- Provide additional infrastructure within existing buildings to value add to existing product;
- Demolition of existing infrastructure to make way for new assets;
- Modernise the existing facility;
- Allow for expansion to Lot 1 and 2 DP 1085563 for the purposes of a wood flake preparation area;
- Construct a new automated storage warehouse part on Lot 24 DP 1148073 and part on Lot 26 DP 1200697;
- Construction of hardstand on Lot 24 DP 1148073;
- Allow for expansion to Lot 1 DP 1076346 for hardstand, water quality ponds and emergency catchment;
- Rationalise the current Conditions of Consent that apply to a number of different lots, all under fragmented ownership and operation;
- Allow for an increase in production by up to 500,000m³, with a commensurate increase in staff levels;
- Boundary adjustment of Lot 1 DP 1076346 to rectify the current split zoning, consolidating the IN1 zoned land into Lot 26, retaining all the RU1 zoned land under the current Lot and DP;
- Lot consolidation of all lots the subject of this application; and
- Surrender of the existing approval (DA 27/95) issued by the Department of Planning for the land identified as being the subject of this application.

Description of works under MOD 1 (approval date 20th November 2018) include:

- Extension of mouldings warehouse
- Reorientation of materials handling building
- Layout changes to particleboard chipper/debarker building
- Extension of northern noise bund
- Reconfiguration of elements of the surface water management system
- Reclamation of a portion of the Spring Dam

Description of works under MOD 2 (approval date 29th November 2019) include:

- Installation of an electricity generation gas turbine and ancillary equipment

Description of works under MOD 3 (approval date 22nd May 2020) include:

- Additional materials handling equipment
- Extension to northern warehouse
- Changes to the site surface water system
- Construction of further hardstand area

4.2 Program of Construction Works

Construction works commenced in June 2017 under approved SSD 7016 dated 29th May 2017, and essentially followed the Stages as outlined below:

- Stage 1 – Demolition of office building and site works, construction of detention basin (required for erosion and sediment control for later stages) and hardstand areas. Within this stage the construction of the detention basin and drainage swales will be undertaken first in order to ensure that the appropriate erosion and sediment control measures can be implemented as support for following stages. Stage 1 is to commence upon approval and is estimated to take approximately 6 months.

- Stage 2 – construction of Particle Board Manufacturing Facility and installation of related plant and equipment, including modernisation of the existing plant. Stage 2 is to commence upon approval or slightly thereafter and is estimated to take up to 18-24 months, dependent on equipment and labour availability.

- Stage 3 – alterations and additions to existing MDF site and construction of new automated storage warehouse. Stage 3 is to commence post completion of Stage 2 and is estimated that this will take up to 9 months.

- Stage 4 – debarker chipper building and chip preparation area. Stage 4 may commence approximately six (6) months after approval and is estimated to take up to 12 months to complete.

The activities included in the above four stages are complete.

The description of works outlined above in Section 4.1 for modifications 1, 2 and 3 have commenced with works under MOD 1 essentially complete. MOD 2 works have been completed with commissioning of the turbine to follow. It is expected that final commissioning will be May/June 2021. Activities under MOD 3 are progressing.

4.3 Outline of Main Construction Activities

The key construction activities included:

- Excavation and construction of new first flush and emergency basin in east of the site;
- Demolition of existing site infrastructure;
- Construction of new site access and hardstand;
- Installation of new services and support infrastructure;
- Construction of new industrial buildings to the south west and north west of the subject site to house new plant and equipment, as well as to provide storage;
- Installation of new plant and equipment in existing industrial buildings;
- Reclamation of a portion of the Spring Dam; and
- Installation of gas turbine.

The above activities have been completed. The following activities have commenced:

- Reconfiguration of elements of the site surface water management system;
- Extensions to existing and new build warehouses;
- Layout changes to new builds; and
- Construction of additional equipment to new builds.

These new builds are generally as follows:

- Debarker and chipping plants were constructed to the south and east of the existing production building. The chippers have been contained in concrete and acoustic panel enclosures;
- A materials handling building has been constructed to the west of the production hall. The building is enclosed with concrete panelling to the north, south and west side with an opening on the eastern side to allow for material to be brought in using a front end loader for processing;
- A flaker building was constructed to the west of the production hall. The building is fully enclosed with acoustic panelling;
- Production building which facilitates the board pressing process. The building is fully enclosed using sheet metal and concrete panelling; and
- Automated storage warehouse building located at the northern end of the site. The building is fully enclosed using sheet metal.

4.4 Construction Site Facilities

Existing site facilities (offices, amenities, dry storage and any chemical storage) will be used where possible during construction activities. Where existing site facilities are insufficient, the following considerations will be made when selecting the location for the construction facilities:

- Within the footprint of the proposed Project;
- Away from natural surface drainage lines;
- Suitable vehicle access;
- Separate storage for fuels, chemicals and hazardous goods, inside bunded area(s);
- Minimise potential for work near dry vegetation which could cause fire; and
- If lighting is required for night-time security, lights will be installed to avoid nuisance to neighbours.

All site sheds and other facilities will present a neat appearance with safety signs erected as required. The construction areas will be regularly maintained and will be kept tidy and free of rubbish. Covered rubbish bins will be provided.

5 Structure and Responsibilities

The Project delivery team, as per the list presented below, shall manage the Project.

During the construction period, all personnel including the Project Manager, Environmental Officer, Safety Officer, Site Supervisor, Work Assistants, and engaged Contractors have general responsibilities in the development of a positive environmental management culture and for ensuring all activities are conducted in a manner that is consistent with the CEMP. Specific project responsibilities in relation to environmental management are shown below.

Borg Managing Director
The Borg Managing Director is responsible for:

- approving appointment of the Project Manager;
- periodic management review of the CEMP and its implementation; and
- investigating any serious incidents, complaints or non-conformances and ensuring necessary corrective action is implemented.

Borg Construction Project Manager

The Borg Construction Project Manager reports to the Borg Managing Director and is responsible for the day-to-day management of environmental performance on the project. The Project Manager is ultimately accountable for the implementation of the requirements contained within this CEMP. The Project Manager is responsible for:

- approving and implementing the CEMP;
- approving any revisions to the CEMP;
- instructing project personnel on how to comply with environmental policy and procedures;
- ensuring the Site Supervisor is aware of and complies with the environmental obligations as detailed within this CEMP;
- ensuring that employees, contractors and sub-contractors are aware of, and comply with, the conditions of consent and requirements of the CEMP relevant to their respective activities;
- tracking and compliance against the conditions of consent for the scope of works being performed;
- evaluation of how effectively environmental controls are performing;
- initiating remedial measures, as recommended by the Environment Officer, when environmental deficiencies are observed or in response to environmental complaints;
- engaging Borg Environment Officer and/or environmental consultants where required to provide support in relation to implementing the CEMP; and
- investigating any incidents or complaints and ensuring necessary corrective action is implemented (in consultation with Borg Managing Director for significant incidents / complaints).

Environment Officer

The Environment Officer will assist the Project Manager in meeting environmental performance targets for the project. The Environmental Officer is responsible for:

- preparing and updating the CEMP;
- assisting the Project Manager in implementing the CEMP;
- assisting in training project personnel on how to comply with environmental policy and procedures;
- undertaking, and/or arranging suitably trained personnel, for periodic monitoring and inspection;
- regular site inspections and the active pursuit of opportunities to enhance environmental outcomes;
- spot checks and general environmental compliance observations;
- tracking and reporting environmental performance;
- monthly evaluation of how effectively environmental controls are performing;
- recommending remedial measures when environmental deficiencies are observed or in response to environmental complaints;
- maintaining environmental performance records;
- investigating any incidents or complaints and ensuring necessary corrective action is implemented (in consultation with Borg Managing Director and Project Manager for significant incidents / complaints).

Safety Officer

The Safety Officer will assist the Project Manager in meeting safety and environmental performance targets for the project. The Safety Officer is responsible for:

- advising on all issues related to work health and safety;

- inducting employees, contractors and sub-contractors to the Project;
- maintaining the SDS register;
- maintaining the hazardous substances register;
- hazardous materials clearance prior to demolition of buildings.

Site Supervisor
The Site Supervisor will report to the Project Manager and is responsible for:

- Managing employees / contractors and construction activities on a daily basis to ensure the appropriate environmental controls are implemented and maintained in accordance with the requirements of the CEMP;
- Ensuring all staff are inducted into the site and undertake daily toolbox talks;
- Undertake daily site inspections of environmental controls and maintain records of environmental actions;
- Reporting any environmental management concerns or incidents immediately to the Project Manager;
- Recommending improvements to the CEMP to the Project Manager; and
- Implementing any corrective actions issued as a result of any site inspections, audits or meetings.

Works Assistants and Contractors
The Work Assistants and Contractors will report to the Site Supervisor and are responsible for:

- Implementing the requirements of the CEMP as they conduct their works; and
- Reporting any environmental management concerns or incidents immediately to the Site Supervisor.

6 Environmental Risk Assessment

Environmental aspects and potential construction stage environmental impacts have been identified based on the Environmental Impact Statement and supporting studies, the Development Consent Conditions and Borg Construction general experience on construction projects as shown on **Table 5**.

The Risk Assessment Matrix in **Table 3** has been used to assess the unmitigated risk of each individual environmental aspect relevant to the construction of the Project.

The level of risk assessed from the matrix informs the level of mitigations required for that environmental aspect. These risks are to be mitigated through the application of measures identified in this CEMP.

Table 3 – Risk Assessment Matrix

		Probability				
Consequence		A	B	C	D	E
	1	H	H	H	H	M
	2	H	H	H	M	M
	3	H	H	M	M	L
	4	M	M	M	L	L
	5	M	L	L	L	L

Table 4 provides explanatory notes on the selection of the consequence and probability for each environmental aspect.

Table 4 – Risk Matrix Explanation

Probability			Consequence		
A	Almost Certain	Expected to occur, quite common	1	Major	• Major environmental harm. e.g. major pollution incident causing significant damage or potential to health or the environment.
B	Likely	Will probably occur, has happened	2	Significant	• Long term or serious environmental damage • Numerous complaints received • Potential for prosecution
C	Possible	Might occur at some time	3	Moderate	• Moderate environmental impact • Will cause complaints • Possible fine
D	Unlikely	Could occur at some time although unlikely	4	Minor	• Minimal environmental harm • Potential for complaints • Fine unlikely
E	Rare	Might occur at some time in exceptional circumstances	5	Insignificant	• Little or no environmental harm • Little potential for fines or complaints

Table 5 – Risk Matrix Explanation

Aspect	Potential Construction Stage Impact	Probability	Consequence	Risk Ranking	Controls
Site security and access	Entry of unauthorised persons or vehicles onto the site	D	4	Low	Refer **Section 7.1**
Sedimentation and erosion control and construction stormwater management	Erosion of sediments from stockpiles or exposed areas	B	3	High	Refer **Section 7.3**
	Discharge of sediment laden stormwater leading to potential impacts to downstream environment	B	3	High	
Unsuitable fill material used in the partial reclamation of the Spring Fed Dam	Localised groundwater mounding negatively effecting on water quality	C	3	Medium	Refer **Section 7.12**
Noise	Excessive noise generated by construction activities, and/or truck and vehicle movements	C	3	Medium	Refer **Section 7.4**
	Excessive noise generated from simultaneous operation of mobile wood chippers and rock/ concrete breaking activities	C	3	Medium	Refer **Section 7.11**
Air quality and dust	Generation of dust from soil stockpiles and other exposed areas	B	3	High	Refer **Section 7.5**
	Generation of dust during handling of soil	B	3	High	
	Generation of dust from vehicle movements	C	4	Medium	
	Unacceptable emissions from vehicles / plant	D	4	Low	
Hazardous materials	Leaking or spillage of fuels or chemicals stored or used on the Site leading to potential impacts to soil, groundwater or surface water	C	1	High	Refer **Section 7.6**
	Explosion of fuels or chemicals stored or used on the Site	E	1	Medium	
Waste management	Inappropriate disposal of waste	D	2	Medium	Refer **Section 7.7**
	Not minimising generation of waste	D	4	Low	

Aspect	Potential Construction Stage Impact	Probability	Consequence	Risk Ranking	Controls
Traffic management	Traffic causing congestion or damage on local roadways	D	3	Medium	Refer **Section 7.8**
	Traffic incident / accident	D	2	Medium	
Materials management	Unintended mixing of materials (clean vs yet to be validated etc)	C	2	High	Refer **Section 7.9**
Contamination management	Covered in remedial action plan for fuel depot	B	2	High	Refer **Section 7.9**
Heritage	Disturbance of aboriginal artefacts or skeletal remains during excavation activities	E	2	Medium	Refer **Section 7.10**

7 Environmental Management and Controls

This section identifies the management measures which will be implemented during the construction of the Project to mitigate against the environmental aspects identified in **Table 5.** The Project Manager will ensure that personnel responsible for undertaking the works are aware of their roles and responsibilities as detailed in this CEMP.

The following sub-plans, which are attached as appendices to this CEMP, have been prepared:

- Construction Traffic Management Sub-Plan;
- Construction Noise Management Sub-Plan;
- Mobile Wood Chipper Operation Management Plan; and
- Spring Fed Dam Reclamation Plan.

Where a sub-plan has been prepared for a particular aspect, the environmental management activities and management measures to be implemented are detailed in the sub-plan. It is intended that this CEMP be a live document and that it be regularly reviewed for effectiveness, with procedures to be modified where considered beneficial. Procedures for review are discussed in **Section 10.1**.

7.1 Site Security and Access

7.1.1 Objectives

- Prevent entrance of unauthorised people to site during construction activities.

7.1.2 Management Measures

1) The site currently operates 24 hours per day 7 days per week and is security fenced. Access is provided via Gate 4, 5 and Gate 6, which are security controlled. Visitors and contractors to the site are required to complete a site induction prior to entry. This aspect will be managed by the Safety Officer.
2) As the site will continue to be operational during the construction phase, existing security measures will be maintained during the construction period.
3) All construction site personnel must undergo site contractor induction, including the requirements of this CEMP. For deliveries and visitors, a separate smaller induction will be undertaken.
4) If deemed necessary, the separation between the Woodchem operations and the rest of the site will be reinforced through additional fencing to clearly delineate the different operations and ensure that access can be achieved without any intrusion into areas of construction or storage.
5) Lighting is currently provided on site to allow the full 24-hour operation of the site in line with the current consent. Lighting is designed to project downwards to minimise impacts on the amenity of the area and to increase overall site safety.

7.1.3 Monitoring and Reporting

Monitoring	Frequency	Person Responsible	Record
Visual check that perimeter fence in tact	Monthly	Site Supervisor / Environment Officer	Monthly Inspection Checklist
All visitors and contractors complete site induction	Daily	Project Manager / Safety Officer	WHSMS Audits

7.2 Hours of Operation

7.2.1 Objectives

- Prevent outside of hours noise and traffic impacts resulting from construction activities.

7.2.2 Applicable Conditions of Approval

Conditions B13 and B14 of Schedule 2 in Development Consent SSD 7016 for the Project requires:

"B13. The Applicant must comply with the hours detailed in Table 1, unless otherwise agreed in writing by the Secretary.

Table 1: Hours of Work

Activity	Day	Time
Earthworks and Construction	Monday – Friday Saturday	7 am to 7 pm 8 am to 1 pm
Operation	Monday – Sunday	24 hours

B14. Works outside of the hours identified in Condition B13 may be undertaken in the following circumstances:
(a) works that are inaudible at the nearest sensitive receivers;
(b) works agreed to in writing by the Secretary;
(c) for the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or
(d) where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm."

7.2.3 Management Measures

1) Construction work shall be conducted within the approved hours as per the above table in **Section 7.2.2**.
2) Construction work may be also undertaken outside these hours if work meets the circumstances in Condition B14.
3) Quarterly construction noise monitoring events performed by an independent third party suitably qualified consultant

7.2.4 Monitoring and Reporting

Monitoring	Frequency	Person Responsible	Record
No construction related complaints	24 hour complaints hotline	Project Manager / Environment Officer	Complaints Register

7.3 Soil and Water Management

7.3.1 Objectives

- The objective of the Soil and Water Management Plan (SWMP) is to set out strategies to control soil erosion and sediment generation close to the source and thereby minimise the potential for construction activities to adversely affect water quality leaving the site.

- Comply with the requirements of the latest version of the *Managing Urban Stormwater: Soils and Construction Guideline* (Landcom, 2004).

7.3.2 Applicable Conditions of Approval

Condition B29 of Schedule 2 in Development Consent SSD 7016 for the Project requires:

"B29. Prior to the commencement of construction, the Applicant must install and maintain suitable erosion and sediment control measures on-site, in accordance with the relevant requirements in the latest version of the Managing Urban Stormwater: Soils and Construction Guideline and the Erosion and Sediment Control Plan included in the CEMP required by Condition C1."

7.3.3 Responsible Officer(s)

An Environmental Officer will be assigned to the Project delivery team. The Environmental Officer will supervise soil and water management controls during construction and respond to environmental incidents.

Borg construction staff have been trained in sediment and erosion control and know how to implement these control measures.

7.3.4 Design Criteria

Assumed Soil Hydrological Group and Type of Basin

It has been assumed that soils on the site are part of hydrological group C, fine clays with mildly dispersible particles that will result in runoff from most but not every rainfall event, i.e. the site soils possess some infiltration capacity. A type D basin would be required for these soil conditions. Some flocculation may be required to hasten settlement.

Rainfall Data

Analysis of several local rainfall gauges indicate an annual average rainfall depth for calculation purposes of 800mm/year. This is based on rainfall at the Jenolan Caves Road gauge, as well as the Spring Bank gauge close to the site. Spring Bank has an annual average rainfall of 840mm and Jenolan Caves Road 745mm/year.

Design Rainfall Depth

A design rainfall depth of the 5 day 75th percentile event has been chosen in accordance with the Blue Book noting that Kings Stockyard Creek is not a sensitive waterway. For example a SEPP14 Wetland would be considered sensitive. A 5 day, 75th percentile rainfall depth for Oberon is 22.50mm.

7.3.5 Mitigation Measures

Localised Sediment Controls

Localised sediment controls shall be used to minimise and prevent sediment laden runoff from entering any waterway. Localised controls would include the use of:

- Sediment fences;
- Geofabric wrapped hay bales within swales;
- Rock check dams; and
- Filter sausages around the opening of all impacted stormwater pits.

Typical details for each of these controls is shown in **Appendix B**.

Figure 2 shows local sediment controls to be installed across the Project site. Where identified necessary, additional sediment controls will be installed by construction staff.

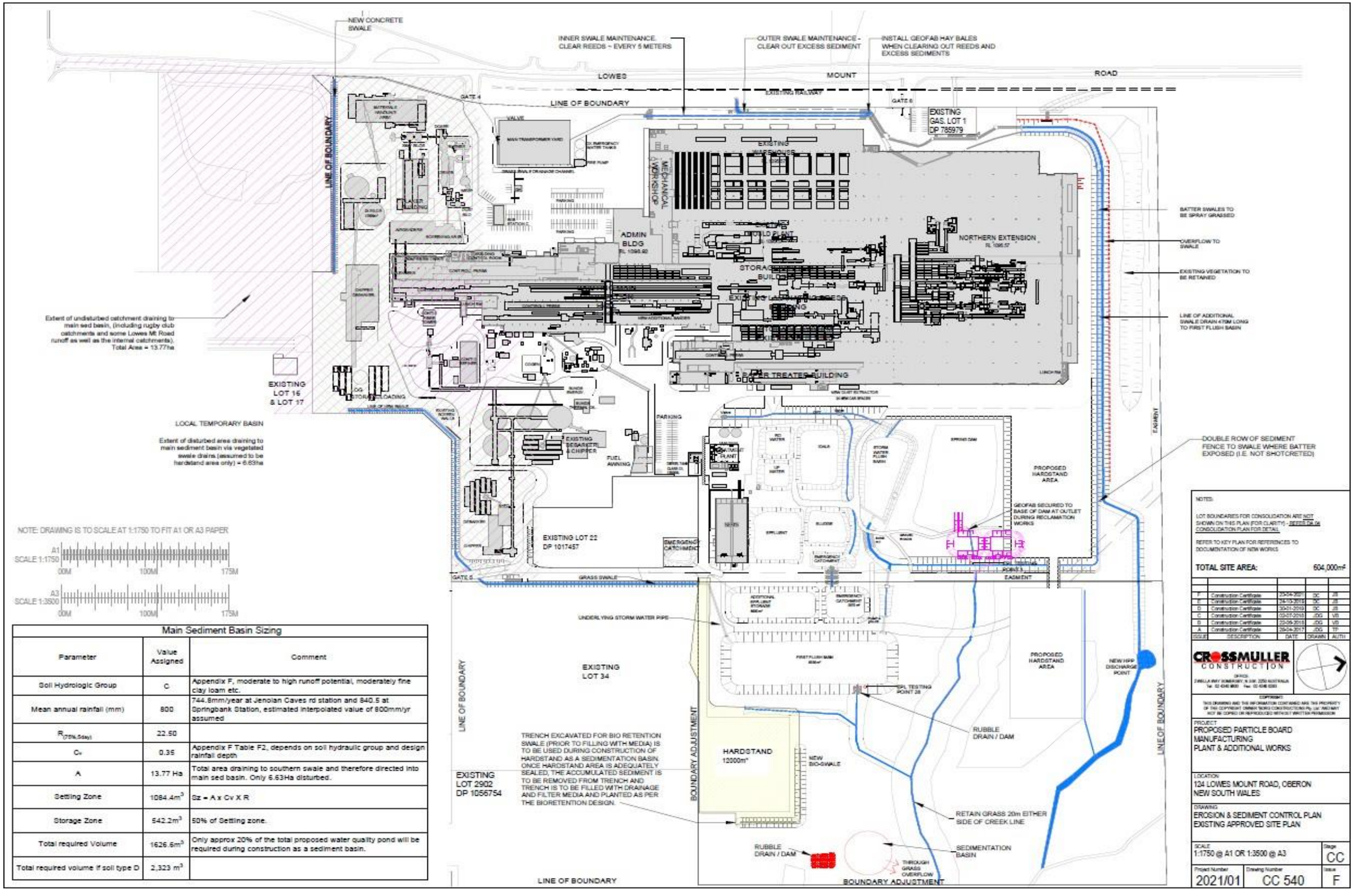
Work Site Access Controls

A minimum of 15m of railway ballast is to be placed at the point of access and egress to all areas with exposed earth works to facilitate the removal of mud from vehicles. The ballast shall be washed down weekly when the site is dry or when clogged.

Stockpiles

Topsoil stockpiles are to be limited to 2m in height to preserve soil microbes. Stockpiles shall be surrounded by a sediment fence and located away from waterways. If stockpiles are to be kept for more than 3 months it is suggested that stockpiles are sprayed with a bitumen emulsion to prevent erosion and promote grass growth.

Figure 2 Erosion and Sediment Control Plan



Main Sediment Basin Sizing

Parameter	Value Assigned	Comment
Soil Hydrologic Group	C	Appendix F, moderate to high runoff potential, moderately fine clay loam etc.
Mean annual rainfall (mm)	800	744.8mm/year at Jenolan Caves rd station and 840.5 at Springbank Station, estimated interpolated value of 800mm/yr assumed
$R_{(75\%,5day)}$	22.50	
Cv	0.35	Appendix F Table F2, depends on soil hydraulic group and design rainfall depth
A	13.77 Ha	Total area draining to southern swale and therefore directed into main sed basin. Only 6.63Ha disturbed.
Settling Zone	1084.4m³	Sz = A x Cv X R
Storage Zone	542.2m³	50% of Settling zone.
Total required Volume	1626.6m³	Only approx 20% of the total proposed water quality pond will be required during construction as a sediment basin.
Total required volume if soil type D	2,323 m³	

Sediment Control Basin

In accordance with the Water Cycle Impact Assessment (Sustainability Workshop, May 2016) and the Blue Book, which requires a basin where the disturbed area exceeds 2,500 square meters, Borg did operate a construction phase sediment basin shown on Figure 2 as First Flush Basin. This basin is now effectively an operational basin however does continue to manage runoff from construction activities.

The basin was designed in accordance with the Blue Book as detailed below.

Minimum Sediment Basin Volumes Required by Blue Book		
Parameter	**Value Adopted**	**Comment or Source of Data**
Soil Hydrologic Group	C	Appendix F, moderate to high runoff potential, moderately fine clay loam etc
Mean Annual Rainfall (mm)	800	744.8mm/year at Jenolan Caves Rd station and 840.5mm at Springbank Station, estimated interpolated value of 800mm/yr assumed
R/(75%, 5day)	22.5	
C/v	0.35	Appendix F Table F2, depending on soil hydraulic group and design rainfall depth
A	13.77 Ha	Total area draining to southern swale and therefore directed into main sediment basin. Only 6.63Ha disturbed
Settling Zone	1084.4m^3	Sz = A x Cv x R
Storage Zone	542.2m^3	50% of Settling Zone
Total Required Volume	1626.6m^3	9,000 m^3 of volume are proposed
Total Required Volume if Soil Type D	2,323 m^3	As above

Assuming a worst-case scenario with type D soils, the sediment basin volume would need to be 2,323 m^3 to comply with the Blue Book. Borg constructed a 9,000 m^3 basin which substantially exceeded the minimum volumes required under the Blue Book.

This basin currently operates at nil discharge as the stormwater is harvested by the site water treatment plant and used in the production process.

Any additional temporary construction sediment basins that are deemed necessary for future modification construction works will be designed in accordance with the Blue Book where appropriate and managed under this Plan including but not limited to the following:

- Installation and maintenance of sediment and erosion controls where required
- Placing topsoil in swales to promote grass growth
- Vegetate or spray grass swales and line base with turf

7.3.7 Monitoring and Reporting

Monitoring	Frequency	Person Responsible	Record
Ensure localised erosion and sediment control devices are installed	Prior to commencement of earthworks	Site Supervisor / Environment Officer	Initial inspection
Work access controls installed at the point of access and egress to all areas with exposed earth works	Prior to commencement of earthworks	Site Supervisor / Environment Officer	Initial inspection
Topsoil stockpiles to be managed in accordance with the SWMP	Monthly	Site Supervisor / Environment Officer	Monthly inspection
Keep records of sediment basin operation	As required	Site Supervisor	Sediment basin operation SOP
Erosion and sediment control devices inspected post-rainfall	During and/or immediately following rainfall event	Site Supervisor / Environment Officer	Post-rainfall inspection
Erosion and sediment control devices inspected routinely	Monthly	Environment Officer	Monthly Inspection Checklist
Follow-up inspection after sediment removal from devices	Within 1 week of sediment removal requirement identified	Environment Officer	Post maintenance inspection

7.4 Noise Management

Refer to the Construction Noise Management Sub-Plan in **Appendix C** for objectives, management measures and monitoring requirements related to construction noise impacts.

7.5 Air Quality (Dust) Management

7.5.1 Objectives

- Minimise air pollution from construction activities.
- Minimise the exposure of areas for wind erosion.
- Control, to the maximum extent practicable, the generation of dust on site and migration of dust offsite.
- Undertake activities with the objective of preventing visible dust emissions from the site.

7.5.2 Applicable Conditions of Approval

Condition B2 and B3 of Schedule 2 in Development Consent SSD 7016 for the Project requires:

"B2. The Applicant must implement all reasonable and feasible measures to minimise dust generated by the Development.

B3. During construction, the Applicant must ensure that:
(a) exposed surfaces and stockpiles are suppressed by regular watering;
(b) all trucks entering or leaving the site with loads have their loads covered;

(c) trucks associated with the Development do not track dirt onto the public road network;
(d) public roads used by these trucks are kept clean; and
(e) land stabilisation works are carried out progressively on site to minimise exposed surfaces."

7.5.3 Management Measures

1) Toolbox meetings will be held to ensure all personnel on site are made aware that if they observe excessive dust in the air leaving the site, they are to immediately inform the Site Supervisor. In such cases, the Site Supervisor will investigate the source of the dust and ensure that proper controls are in place. If those controls prove ineffective that activity will cease until methods to successfully control the dust are employed.
2) The following measures will be implemented to manage dust generation from stockpiles of soil:
    - Minimise the period and volume of stockpiling where practicable;
    - Where any long-term stockpiling is required, stabilise the stockpiles; and
    - Use of water sprays on any un-stabilised stockpiles.
3) Evaluate prevailing weather conditions - excavation/fill works to ceased or be modified if dust generation observed.
4) Stabilise exposed areas as soon as practicable.
5) Spray water on unsealed areas.
6) Minimise the height from which dust-generating material is dropped.
7) Minimise the surface area of a work zone.
8) Construction plant and equipment are to be maintained and serviced regularly.
9) Efficient use of plant and equipment, e.g. turning off idling plant and equipment.
10) Covering of truck loads before leaving the site.
11) Remove dirt and debris from the tyres and underside of trucks prior to leaving the site.
12) Daily visual inspections by the Site Supervisor of the immediate surrounding area to ensure no materials have been lost from vehicles entering or leaving the site, and to assess general dust generation.
13) Visual inspection of plant on a daily basis by the Site Supervisor for excessive exhaust emissions. Defective plant will be stood down until repaired.
14) Offensive odours are not expected to be generated from the site. If this does occur work involved is to stop temporarily, the source of odour investigated, and solutions actioned so that offensive odour production does not continue.

7.5.4 Monitoring and Reporting

Monitoring	Frequency	Person Responsible	Record
Visual inspection of site for excessive dust generation, weather conditions, truck load covers, condition of stabilised site work access controls	Daily	Site Supervisor	Daily Diaries
Visual inspection of stockpile stability	Monthly	Site Supervisor / Environment Officer	Monthly Inspection
Toolbox talks to include reminders about reporting	Weekly	Site Supervisor	Toolbox Record

excessive dust from either internal or external sources, covering loads, efficient use of plant and equipment			

7.6 Storage of Hazardous Materials

7.6.1 Objectives

- Prevent leaks or spills of hazardous materials
- Prevent pollution arising from leakage or spillage of hazardous materials

7.6.2 Applicable Conditions of Approval

Condition B44 and B45 of Schedule 2 in Development Consent SSD 7016 for the Project requires:

"B44. The quantities of dangerous goods stored and handled at the site must be below the threshold quantities listed in the Department's Hazardous and Offensive Development Application Guidelines – Applying SEPP 33 at all times.

B45. The Applicant must store all chemicals, fuels and oils used on-site in appropriately bunded areas in accordance with the requirements of all relevant Australian Standards, and/or the EPA's Storing and Handling of Liquids: Environmental Protection – Participants Handbook."

7.6.3 Management Measures

1) Manufacturer's instructions / Safety Data Sheets (SDS) for substances and materials shall be obtained and kept in a file on site, which will be readily available to site construction personnel when needed.
2) Substance risk assessments to be completed for all hazardous materials brought onto site for construction
3) Minimise fuel and chemical storage on site.
4) Bunds around any chemical, fuel or oil storage (to contain 110% of largest tank / container, or 25% of the total volume of all drums, whichever is greater). Any bunds shall be designed and installed in accordance with the requirements of all relevant Australian Standards, and/or EPA's *Storage and Handling of Liquids: Environmental Protection – Participant's Manual*.
5) Spill kits to be kept onsite in marked containers (containing absorbent materials – granular vermiculite, mats, and pillows) and personnel should be trained in spill response.
6) Vehicles transporting materials on-site will be operated in a manner to prevent any loss of materials during loading, transport and unloading.

7.6.4 Monitoring and Reporting

Monitoring	Frequency	Person Responsible	Record
Visual inspection of chemical and fuel storage areas and bunding	Monthly	Site Supervisor / Environment Officer	Monthly Inspection Checklist
Maintain SDS register	As required	Site Supervisor / Safety Officer	SDS register
Visual inspection of spill kits	Monthly	Site Supervisor /	Monthly Inspection

contents		Environment Officer	Checklist
Maintain Hazardous Substances Register	As required	Site Supervisor / Safety Officer	Hazardous Substances Register

7.7 Construction and Demolition Waste Management Plan

7.7.1 Objectives

- To develop a plan for management of wastes on the site in accordance with the *NSW Waste Avoidance and Resource Recovery Strategy 2014-21* (WARR). This involves managing the waste in accordance with the waste hierarchy established under the *Waste Avoidance and Resource Recovery Act 2001*. The waste hierarchy is shown below in **Figure 3**.

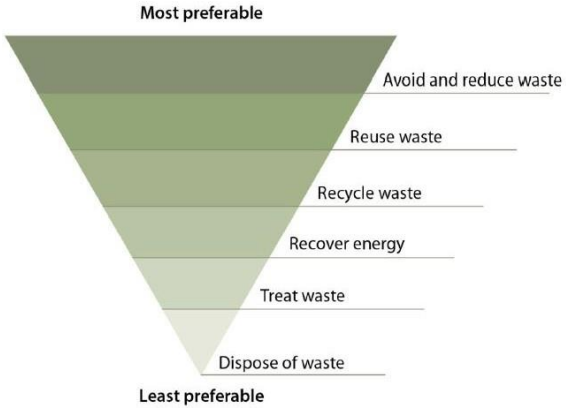


Figure 3 – The Waste Hierarchy

The NSW WARR aims to maximise conservation of natural resources and to minimise environmental harm from waste management and disposal of solid waste.

The specific objectives of the waste management plan include:

- Reduce waste generation associated with site construction activities;
- Where waste generation is unavoidable, promote reuse and recycling;
- Where on-site reuse or recycling is not practicable, appropriate off-site recycling or disposal facilities should be employed, ensuring the responsible treatment of all waste streams; and
- Ensuring all waste disposal is undertaken lawfully.

Contingency procedures will also need to be in place to deal with any waste generated as a result of hazardous material spills (**Section 7.6**).

7.7.2 Applicable Conditions of Approval

Condition B50 of Schedule 2 in Development Consent SSD 7016 for the Project requires:

"B50. Prior to the commencement of construction of the Project, the Applicant must prepare a Construction and Demolition Waste Management Plan for the Project to the satisfaction of the Secretary. The plan must form part of the CEMP required by Condition C1 and must:
(a) detail the quantities of each waste type generated during construction and the proposed reuse, recycling and disposal locations; and

(b) be implemented for the duration of construction works.

7.7.3 Management Measures

Table 6 details the quantities of each waste type generated during construction and the proposed reuse, recycling and disposal locations.

Two Site Environmental Plans have been developed showing stockpile material type and location on site, and waste storage areas including waste type. These Plans will be separate Plans to this CEMP and the Waste Management Plan due to their dynamic nature. The *Site Environment Plan – Waste Storage Areas* and the *Site Environment Plan – Stockpile Map* will be communicated to the workforce via Toolbox talks and displayed in prominent areas at the site. As each Plan is updated as site conditions change, they will be recommunicated to the workforce in the same manner described.

Table 6: Waste types, disposal methods and disposal locations

Construction activity	Waste type	Waste classification	Likely quantity	Disposal methods	Waste disposal location
Clearing and grubbing	Green waste – vegetation	General solid waste (non-putrescible)	20 Cubic metres (m^3)	Re-use on-site as mulch bunds for erosion and sediment controls, landscaping and boosting topsoil organic matter content	On-site
Demolition	Timber	General solid waste (non-putrescible)	5 Tonne (t)	Recycle/reuse of material on-site or send offsite to recycling facility	On-site OR Oberon Council Waste Depot
	Metal – pipes, sheets, reo, fencing	General solid waste (non-putrescible)	20 t	Recycle/reuse of material on-site or send offsite to recycling facility	On-site OR Oberon Council Waste Depot
	Concrete, bitumen, bricks and tiles	General solid waste (non-putrescible)	120 t	General demolition waste expected to be disposed of, unless a reuse option is identified	On-site OR Oberon Council Waste Depot
	Asbestos	Special waste	To be confirmed if encountered	Assessed by a licensed assessor. Managed and disposed of by licenced sub-contractor.	Oberon Council Waste Depot following Council approval
	Cabling and lighting	General solid waste (non-putrescible)	5 t	Where possible send offsite to a recycling facility. Fluorescent light globes and tubes recycled at Oberon Council waste depot.	Oberon Council Waste Depot

Construction activity	Waste type	Waste classification	Likely quantity	Disposal methods	Waste disposal location
	Redundant utility services	General solid waste (non-putrescible)	2 t	Copper wires and pipes send off-site to recycling facility. Separately stockpiled at various locations onsite before being sent offsite to a licensed waste facility.	Oberon Council Waste Depot
	Plastics – PVC pipes, sheeting	General solid waste (non-putrescible)	2 t	Recycle/reuse of material onsite or send offsite to recycling facility.	On-site OR Oberon Council Waste Depot
Excavation and earthworks	Topsoil	General solid waste (non-putrescible)	20 t	Stockpiled and reused on-site	On-site
	Subsoils – soils and clay materials	General solid waste (non-putrescible)	20 t	Reuse onsite for pond linings (clay), batters or landscaping (soils)	On-site
	Potentially contaminated soils	Classified based on soil tests and in accordance with Waste Classification Guidelines (DECCW 2009)	To be confirmed if encountered	Unless soil can be appropriately treated and validated, it will be disposed of in accordance with a Contaminated Land Management Plan	Landfarm on-site or Oberon Council Waste Depot following Council approval

Construction activity	Waste type	Waste classification	Likely quantity	Disposal methods	Waste disposal location
General construction	General waste and recyclables – paper, glass, plastics, silt fences, aluminium, cans, etc	General solid waste (non-putrescible)	20 t	Recyclables placed in recycling bins and removed offsite to recycling facility (metals, glass, aluminium cans, plastics, batteries, paper products). General waste taken to a licensed waste facility.	Oberon Council Waste Depot
	Excess construction materials – asphalt, concrete, metal, steel, timber, temporary fencing, timber from formworks, guard rails etc.	General solid waste (non-putrescible)	Limited	Reused on-site. Re-processed (concrete, asphalt) for use as road base. Removed off-site to a recycling facility or to a licensed waste facility.	On-site OR Oberon Council Waste Depot
	Sediment/sludge from sediment basin desilting	General solid waste (non-putrescible)	15 t	Collected and reused on-site as general fill material or incorporated within landscaping / topsoil material where practical	On-site

Construction activity	Waste type	Waste classification	Likely quantity	Disposal methods	Waste disposal location
	Storm water site run-off captured in sediment basins	Liquid waste	To be confirmed, rainfall dependent	Water captured in sediment basins pumped to water treatment plant for treatment and reuse on-site. Any water discharged offsite will be in accordance withEPL 3035..	On-site
	Waste water from contaminated runoff	Liquid waste	To be confirmed	Water captured in dirty water system and pumped to water treatment plant for treatment and reuse onsite.	On-site
	Packaging – pallets, crates, cartons, plastics and wrapping materials	General solid waste (non-putrescible)	100 t	Return to material supplier or send off-site for recycling.	Return to supplier OR Oberon Council Waste Depot

Construction activity	Waste type	Waste classification	Likely quantity	Disposal methods	Waste disposal location
	Empty Containers used for pesticides, herbicides, fuel, lubricants, paints and other hazardous chemicals.	Hazardous waste	2 t	Stored in appropriate locked and bunded areas until disposal at licensed waste facility. Steel drums will be recycled where practical if a reliable drum reconditioning service is available. Chemical drums that have been triple rinsed will be disposed of by Drum-muster collection at Oberon Council Waste Depot.	Drum reconditioning service OR Oberon Council Waste Depot

Construction vehicles will be serviced by the existing workshop, and as such materials associated with mechanical servicing and repairs will be managed and disposed of through the existing site waste management system.

As for the workshop, existing office and bathroom facilities will be utilised by construction personnel, and wastes will be managed and disposed of through the existing site waste management system. An exception may be the use of portable toilets where construction activities are located away from existing facilities. These portable toilets will be serviced by the hire company on a contractual basis.

7.7.5 Monitoring and Reporting

Monitoring	Frequency	Person Responsible	Record
Visual inspection of surface, loads, bins and portable toilets	Monthly	Site Supervisor / Environment Officer	Monthly Inspection Checklist
Records kept for all waste removed from site	As required	Site Supervisor	Waste Disposal Records

7.8 Traffic Management

Refer to the Construction Traffic Management Sub-Plan in **Appendix D** for objectives, management measures and monitoring requirements related to construction traffic management.

7.9 Contamination Management / Remediation

7.9.1 Objectives

- Avoid and minimise the environmental and human health risks arising from the disturbance of contaminated land if encountered during construction of the project.
- No degradation to the receiving environment as a result of disturbance of contaminated land (if encountered).
- No contamination of soil, air or water as a result of spillages or other impacts arising from construction activities.
- No importation of potentially contaminated soils to site.

7.9.2 Applicable Conditions of Approval

Conditions B28 and B53 of Schedule 2 in Development Consent SSD 7016 for the Project requires:

"B28. The Applicant must:
(a) ensure that only VENM, or ENM, or other material approved in writing by the EPA is used as fill on the site;
(b) keep accurate records of the volume and type of fill to be used; and
(c) make these records available to the Secretary upon request.

B53. Prior to the commencement of construction of the Project, the Applicant must prepare a site validation report for Lot 1 DP 1085563, which demonstrates the site is suitable for its intended use(s). A copy of the site validation report must be provided to the Secretary and Council.

7.9.3 Management Measures

1) Removal of fuel tanks from the fuel depot on Lot 1 DP 1085563 has already been undertaken. Envirowest Consulting was engaged to undertake a contamination investigation and validation of the Lot, outside the scope of this CEMP. The validation report concluded that the area is suitable for ongoing industrial land use as defined in the UPSS Regulation 2008 and NEPC 1999 (Validation Investigation Report, 20 June 2017).
2) All buildings and immediate surrounds will be checked against the site hazardous materials register, i.e. for asbestos materials, prior to demolition. Any hazardous materials identified in these areas would need to be removed, in accordance with

relevant legislative requirements, from the site and disposed of at an EPA licenced facility.

3) The site Pollution Incident Response Management Plan (PIRMP) would be enacted in the event of a major fuel or chemical spill. Minor spills will be contained and cleaned up in accordance with the SDS, using available spill kits.
4) If potentially contaminated material is encountered the Unexpected Contaminated Land Finds Protocol (**Appendix E**) will be followed. Works in the vicinity will be stopped or modified and will not recommence until the material has been analysed and management measures developed.
5) All potentially affected spoil will be stockpiled on a bunded, impermeable surface.
6) If soils are to be disposed off-site, then testing would be undertaken to assess the appropriate waste classification of the soils according to the EPA guidelines.
7) All imported VENM, or ENM, shall be classified based on soil tests and in accordance with Waste Classification Guidelines (DECCW 2009). For material to be considered VENM, it must meet the requirements of the Protection of the Environment Operations Act 1997. Where an excavated material cannot be classified as VENM, it may be eligible for reuse under the ENM order and exemption.
8) Other material imported to site for reuse must meet the requirements of the relevant NSW EPA Resource Recovery Exemption.

7.9.4 Monitoring and Reporting

Monitoring	Frequency	Person Responsible	Record
Contamination clearance for Lot 1 DP 1085563	Prior to construction commencing	Project Manager / Site Supervisor / Environment Officer	Site Validation Report
Hazardous materials clearance prior to demolition of buildings	Prior to demolition	Project Manager / Site Supervisor / Safety Officer	Clearance Report
Visual inspection of excavations to detect presence of contamination	Daily	Site Supervisor	Daily Diary
Record of unexpected contaminated land finds	As required	Site Supervisor / Environment Officer	Incident Report
Record of all environmental incidents/spills	As required	Site Supervisor / Environment Officer	Incident Report
Record of imported or exported materials from site	As required	Site Supervisor / Environment Officer	Waste dockets / VENM/ENM certificates

7.10 Aboriginal and European Heritage

7.10.1 Objectives

- Implement contingency measures to appropriately manage Aboriginal artefacts, skeletal material or historic relics in the unexpected event that they be encountered during site earthworks. The Heritage Assessment undertaken as part of the EIS concluded that the proposed development is unlikely to encounter Aboriginal objects or historic relics.

7.10.2 Applicable Conditions of Approval

Conditions B54 and B55 of Schedule 2 in Development Consent SSD 7016 for the Project requires:

"B54. If Aboriginal objects are uncovered during earthworks, excavation or disturbance, work in the immediate area must stop and the Regional Operations Group of the OEH and the Registered Aboriginal Parties are to be consulted.

B55. If any archaeological relics are uncovered during the course of the work, then all works must cease immediately in that area and the OEH NSW Heritage Division contacted. Depending on the possible significance of the relics, an archaeological assessment and an excavation permit under the Heritage Act 1977 may be required before further works can continue in that area."

7.10.3 Management Measures

1) All personnel working on the Site are to be made aware of the:

- NPW Act 1974 and the fact that it is an offence to move, disturb or destroy Aboriginal objects without the written permission of the Director General of the OEH.
- Heritage Act 1977 and the fact that it may be an offence to move, disturb or destroy archaeological relics without consultation with the OEH NSW Heritage Division.

2) Should Aboriginal objects be identified during the course of site works, all work must cease immediately and the Unexpected Finds Protocol – Aboriginal objects/features encountered during construction activities (**Appendix A**) enacted.
3) Should archaeological relics be identified during the course of site works, all work must cease immediately and the Unexpected Finds Protocol – Discovery of historic relics during construction activities (**Appendix A**) enacted.
4) Should suspected skeletal material be identified during construction, all works must cease immediately and the Unexpected Finds Protocol – Discovery of human remains during construction activities (**Appendix A**) enacted.

7.10.4 Monitoring and Reporting

Monitoring	Frequency	Person Responsible	Record
Site Induction	Once, before work on site Commences	Site Supervisor / Safety Officer	Induction Register
Toolbox talks reminding personnel of processes regarding heritage items	Weekly	Site Supervisor	Toolbox Record

7.11 Mobile Wood Chippers

Refer to the Mobile Wood Chipper Operation Management Plan in **Appendix F** for objectives, and management and mitigation measures related to mobile wood chipper operation.

7.12 Spring Fed Dam Reclamation

Refer to the Spring Fed Dam Reclamation Plan in **Appendix G** for objectives and management and mitigation measures related to the reclamation work associated with the spring fed dam.

8 Contingencies

Table 7 summarises issues that can reasonably be expected to be encountered during construction and how these may be resolved.

Table 7 – Contingencies

Potential Anticipated Issue	Corrective Action
Excessive dust generation	Temporarily stop work activity that is causing dust generation. Review dust controls currently in place and assess need for additional measures. Such measures may include additional use of water sprays, cease dust-generating activity until better dust control can be achieved, temporarily cover dust producing areas, etc.
Excessive noise generation	Identify source, review noise attenuation equipment and as necessary provide silencers on noisy equipment or remove equipment from site.
Erosion and sediment control ineffective	Stop work, review appropriateness of environmental controls. Consider alternative measures. Consult Drainage Engineer if repeated/major issues occurring.
Release of fuel/oil from machinery	Remove source, use spill kit to remove oil, make any repairs as required.
Chemical spill/exposure	Stop work, refer to **Section 11.1** for response procedure.
Inspections reveal damage to Environmental Controls	Repair as required and assess cause of damage. Eliminate cause where possible, otherwise strengthen control to limit impact of cause.

9 Training and Implementation

9.1 Site Induction

All employees, sub-consultants and sub-contractors must undertake a site induction prior to their commencement of work on site. The induction of employees and contractors is the Site Supervisor's responsibility.

The site induction will inform employees of their environmental responsibilities on site. It details the most significant environmental aspects and introduces this CEMP as the management tool used to address the controls and mitigation measures required to minimise environmental impact of the Project.

The induction will cover the following:

- Contents of the CEMP;
- Critical environmental protection procedures including spill responses, emergency procedures, hazardous substances and dangerous goods handling, and monitoring of imported fill quality;
- The location of the CEMP during works; and
- General obligations.

All visitors to the site must undergo a visitor's induction. All visitors must be accompanied by a fully inducted member of staff at all times.

Site personnel shall be encouraged to be proactive and report any instances of environmental control measures not operating properly.

9.2 Tool Box Talks

Toolbox talks will be conducted daily by the Site Supervisor for employees and sub-contractors. Toolbox talks will be undertaken in response to evolving issues on the ground, particularly in response to significant environmental and safety incidents and non-conformance issues.

9.3 Environmental Awareness Training

The CEMP requires all employees receive an appropriate level of environmental awareness training. This training is designed to suit the various needs and levels. Training covers environmental legislation, due diligence, performance criteria, reporting requirements and emergency response procedures. All employees are made aware of the Company's Environmental Policy and the need to meet its obligations.

Environmental awareness training is undertaken as part of staff, employees and contractor's induction training.

10 Compliance

10.1 Environmental Audit Program

The CEMP implementation system will be audited internally to ensure effective compliance with environmental controls, reporting and incident management requirements.

The internal audits will occur within three months of commencement of construction activities on site and every twelve months minimum or as required thereafter. This activity will be planned, programmed and fully documented. The audits should be undertaken by the Borg Construction Environment Officer and include:

- A site visit;
- Review of monthly and other checklists;
- Compliance with the CEMP;
- Update on project status;
- Report on any on-site environmental incidents occurring since the last audit;
- Checks for any repeat issues; and
- Any new initiatives in environmental management.

The audits will be documented in a summary report.

Audit reports findings will be provided to the Project Manager for determining corrective action and reply. On a twelve monthly basis the Borg Construction Project Manager shall undertake a management review of the CEMP.

10.2 Environmental Monitoring

Monitoring that is required during the construction phase of the Project is defined in **Section 7** of this CEMP.

Any measuring equipment used for monitoring shall be regularly serviced and calibrated.

10.3 Environmental Inspections

In addition to formal auditing and monitoring identified in this CEMP, the following inspections will also be undertaken:

- On a daily basis, site supervisory staff will inspect the site and any issues arising will be noted in the daily diaries and communicated to the Project Manager. The inspections will be conducted visually prior to commencement of each day's work and where appropriate during the working day. A final daily inspection will also be undertaken at the end of the workday to ensure that systems and structures are in place.

- A monthly site inspection will be conducted by the Environment Officer. Checklists will be used to record and report on activities for compliance with this CEMP and specific issues presenting significant environmental risks will be addressed, such as noisy works, sediment basin management, etc. An example checklist is shown in **Appendix H**. Checklists may be edited to reflect changing site conditions.

Where necessary, any damage or reduced capacity of environmental control measures will be corrected. If required, environmental control measures may be upgraded.

11 Incident Management and Complaints

11.1 Environmental Incidents

Condition C12 and C13 of Schedule 2 in Development Consent SSD 7016 for the Project requires:

"C12. The Applicant must notify the Secretary and any other relevant agencies of any incident or potential incident with actual or potential significant off-site impacts on people or the biophysical environment associated with the Development immediately after the Applicant becomes aware of the incident.

C13. Within seven days of the date of this incident, the Proponent must provide the Secretary and any relevant agencies with a detailed report on the incident."

An environmental incident is an unplanned event which occurs on-site and has the potential to result in adverse environmental impacts either on-site or in the surrounding area. Environmental incidents include spills, uncontrolled discharges or emissions, unintended damage to native vegetation, or injury to wildlife.

Depending on the nature of the incident and the risk posed to site personnel, all practical steps will be taken to minimise the risk of environmental damage as soon as possible after the event.

In the case of an environmental incident, actions to be taken are:

- Notify the Site Supervisor immediately;
- Immediately cease work in that area and remove people from the incident zone;
- Activate the site Pollution Incident Response Management Plan (PIRMP) if appropriate;
- Notify emergency services as/if required;
- Where safe to do so, attempt to contain the hazard and prevent it from spreading;
- If the incident is a spill:

  - Use silt fences, bunding or interception pits;
  - Use absorbent materials stored on site to clean up spill;
  - Contain contaminated soil/absorbent material waste in appropriate containers, and dispose of contaminated soil/absorbent material to an appropriately licensed off-site disposal facility;
- Notify any relevant agencies when an incident causes or threatens material harm to the environment and /or an exceedance or limit of the performance criteria in the approval and /or when legislation requires;
- The Site Supervisor is to notify the Environment Officer and Project Manager of any environmental incident as soon as practicable;
- Temporarily repair or isolate the failed plant or equipment component;
- Determine actions to rectify the incident in consultation with the Environment Officer;
- Sample the impacted site media be it soil and/or surface water; and
- Implement any longer term remedial measures that may be required.

In accordance with Condition C12 and C13 of Schedule 2 in Development Consent SSD7016, the Borg Construction Environment Officer shall notify the Secretary DPIE and any other relevant agencies, including the EPA, of any incident associated with the Project as soon as practicable after becoming aware of the incident. Within seven days of the date of the incident, the Proponent shall provide the Secretary DPIE and any relevant agencies with a detailed report on the incident.

The Environment Officer will be responsible for notifying NSW EPA of the pollution incident. Information to be provided under section 150 of the POEO Act includes:

- Time, date, nature, duration and location of the incident;
- Location of the place where pollution is occurring or is likely to occur;
- Nature, the estimated quantity or volume and concentration of any pollutants involved;
- Circumstances in which the incident occurred (including the cause of the incident, if known); and
- Action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution.

The Environment Officer is to collect and document (to the extent practicable) the above information. For example, this would include taking photographs, collecting surface water samples of any unplanned water discharges both from the source of the pollution and upstream and downstream in the receiving waterway (for analysis and comparison).

Any environmental incidents, spills, uncontrolled discharges or emissions, unintended damage to native vegetation, etc , and the corrective actions undertaken, shall be recorded in DataStation, Borgs incident management system.

In accordance with Condition C10 of Schedule 2 in Development Consent SSD 7016, within three months of the submission of an incident report under Condition C12 Borg Construction shall review, and if necessary revise the CEMP to the satisfaction of the Secretary DPIE.

11.3 Emergency Contacts

Emergency contact details are listed in the Borg Panel – Oberon Emergency Response Plan, which includes the Pollution Incident Response Management Plan (PIRMP).

11.4 Complaints Handling

The Environment Officer is to be notified of any received complaints. The Environment Officer is to follow the Borg complaints handling procedure (**Section 11.4.1**) and notify the Project Manager as soon as practicable. The Project Manager will notify the Borg Managing Director, as appropriate.

11.4.1 Inquiry and Complaints Handling Process

Borg's community and stakeholder management system includes procedures for recording, investigating, tracking and handling of all inquiries and complaints.

Once Borg has received verbal or written inquiries and/or complaints via telephone, email or post, the Environment Officer or their nominated delegate will:

- undertake an immediate investigation into the nature/cause of the inquiry and/or complaint;
- make initial contact with the community or stakeholder representative within 48 hours to clarify the reason for the inquiry and/or complaint and to notify of the investigation process including an appropriate re-notification time;
- record the enquiry and/or complaint on the Community Complaints register. This register includes the following details:
    - Complaint date and time;
    - Site;
    - Title;
    - Category;
    - Description;
    - Caller details;
    - Action;
    - Status;
    - Follow-up;
    - Complaint validity; and
    - Attachments.

- further investigate the inquiry and/or complaint and provide the community or stakeholder representative with an explanation of the cause and details of any actions taken to mitigate its effect.

It should be noted that if the inquiry and/or complaint is classified as an incident of significance under the site Emergency Response Plan (ERP), the Environment Officer must follow the incident reporting process in that document and ensure appropriate resolution and sign-off.

Records of complaints will be maintained in the complaints register database for at least four years after the complaint was made.

12 Non-Conformance

12.1 Non-Conformance and Corrective Action Report

All non-conformances noted in the Site Inspections, Audits, Incident Reports, or reported to the Project Manager by staff or other parties/authorities will be investigated and recorded in a Non-Conformance and Corrective Action Report which will be provided to the Project Manager on a monthly basis. Details of the non-conformance, including any immediate corrective actions undertaken, are to be recorded by the Environment Officer.

It is the responsibility of the Site Supervisor to immediately initiate corrective actions, if required. The Non-Conformance and Corrective Action Report must include details of the corrective action proposed and an appropriate close out date. Corrective Actions will include containment measures, clean-up and restoration of the affected area and of any deficient operational controls or monitoring controls. On completion, the Environment Officer will re-inspect the outcomes to ensure that they are acceptable before signing, dating and filing the Non-conformance Report.

The occurrence of such an event will be brought to the attention of personnel responsible, and environmental controls will be updated to prevent a reoccurrence.

12.2 Environmental Incidents Register

Environmental incidents are recorded in DataStation, Borgs incident management system. Each incident report will detail the issue, the corrective and preventative actions proposed, and the responsibilities and timing for completion of the actions. The report will include any comments and the completion date of corrective actions.

The Environment Officer shall review the Environmental Incidents Register monthly to ensure actions are completed and that controls are performing effectively. The Environment Officer shall also review the CEMP to determine if the above situations require project scope changes or if the incident identifies opportunities for improvement in mitigations or work practices.

Appendices

Appendix A - Unexpected Finds Protocol Heritage Items

Unexpected Finds Protocol – Aboriginal objects/features encountered during construction activities

Stop all work in the immediate area of the item and notify the Project Manager.
Establish a 'no-go zone' around the item. Use high visibility fencing, where practical.
Inform all site personnel about the no-go zone. No further interference, including works, ground disturbance, touching or moving the item must occur within the no-go zone.
Project Manager MUST IMMEDIATELY NOTIFY the Registered Aboriginal Parties and suitably qualified archaeologist.
Representatives of the Registered Aboriginal Parties, and the suitably qualified archaeologist must determine the extent, nature and significance of the Aboriginal object(s).
Notify OEH and submit a site card.
Project Manager, the Registered Aboriginal Parties, the suitably qualified archaeologist and OEH determine if avoidance of further impact is possible for objects of high archaeological or Aboriginal significance. If not of high significance or if avoidance is not feasible develop an appropriate salvage methodology.

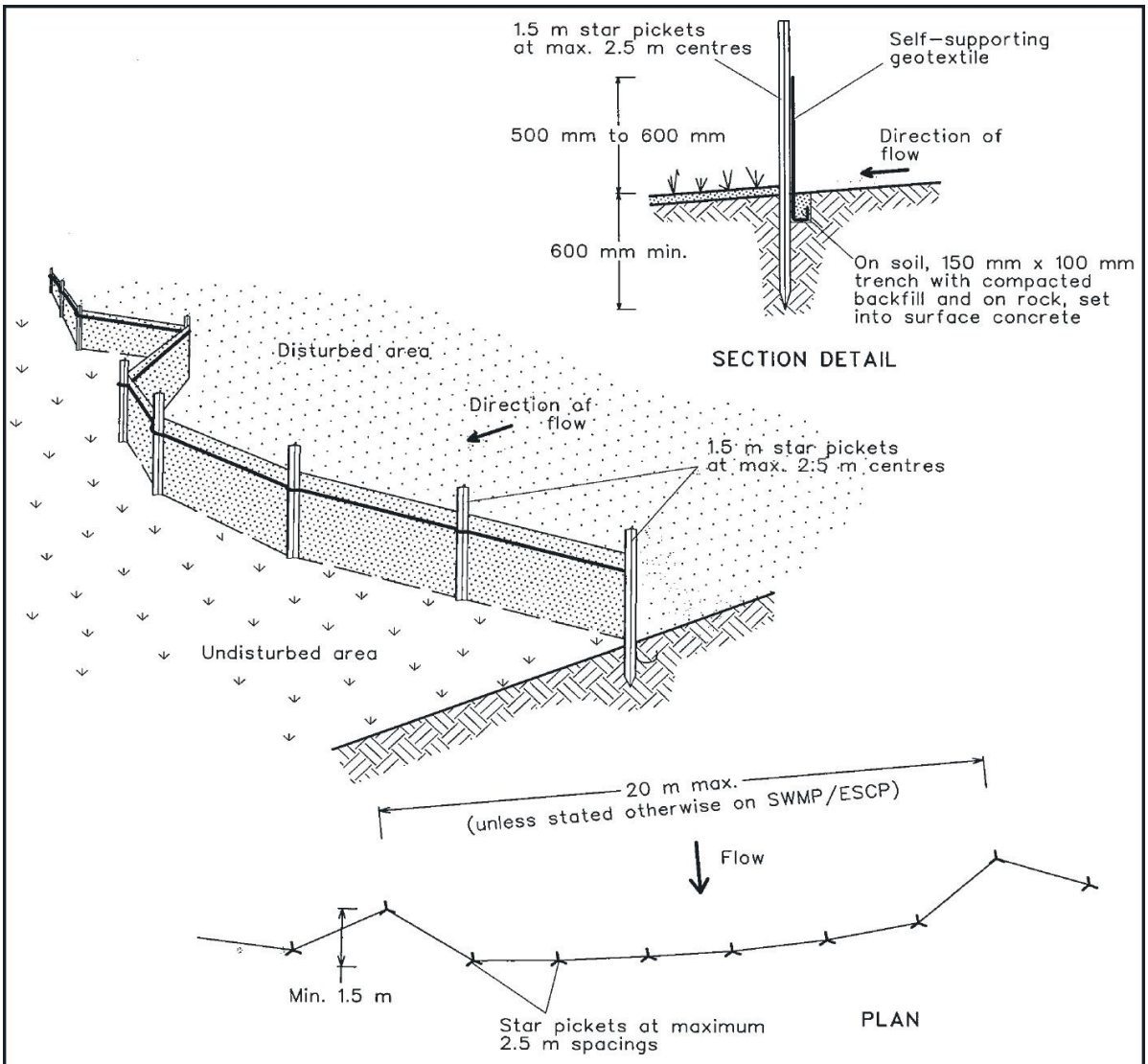
Unexpected Finds Protocol – Discovery of human remains during construction activities

When suspected human remains are exposed, all work is to cease immediately in the near vicinity of the find location.
Notify the Project Manager immediately.
Project Manager must notify the NSW Police Department, OEH on the Enviroline 131 555, the registered Aboriginal Parties and a suitably qualified archaeologist.
OEH will provide details on the current processes involved in best dealing with archaeological skeletal remains (both Aboriginal & historic).
Under the instructions of the Police, an area of 50 m radius is to be cordoned off by temporary fencing around the exposed suspected human remains site - work can continue outside of this area as long as there is no risk of interference to the human remains or the assessment of human remains.
If the remains are determined to be Aboriginal remains, then under the advice of OEH, consult with the Registered Aboriginal Parties.
Do not recommence work at the location until all legal requirements and the reasonable requirements of OEH and the Registered Aboriginal Parties have been adequately addressed.

Unexpected Finds Protocol – Discovery of historic relics during construction activities

Stop all work in the immediate area of the item and notify the Project Manager.
Establish a ‘no-go zone’ around the item. Use high visibility fencing, where practical.
Inform all site personnel about the no-go zone. No further interference, including works, ground disturbance, touching or moving the item must occur within the no-go zone.
Project Manager must notify a suitably qualified heritage consultant.
Suitably qualified heritage consultant to assess objects and recommend mitigation measures and salvage options if necessary.
Investigate, record or salvage in accordance with recommendations of the suitably qualified heritage consultant.
Project Manager to ensure implementation of heritage mitigation measures are documented.
Proceed with construction works.

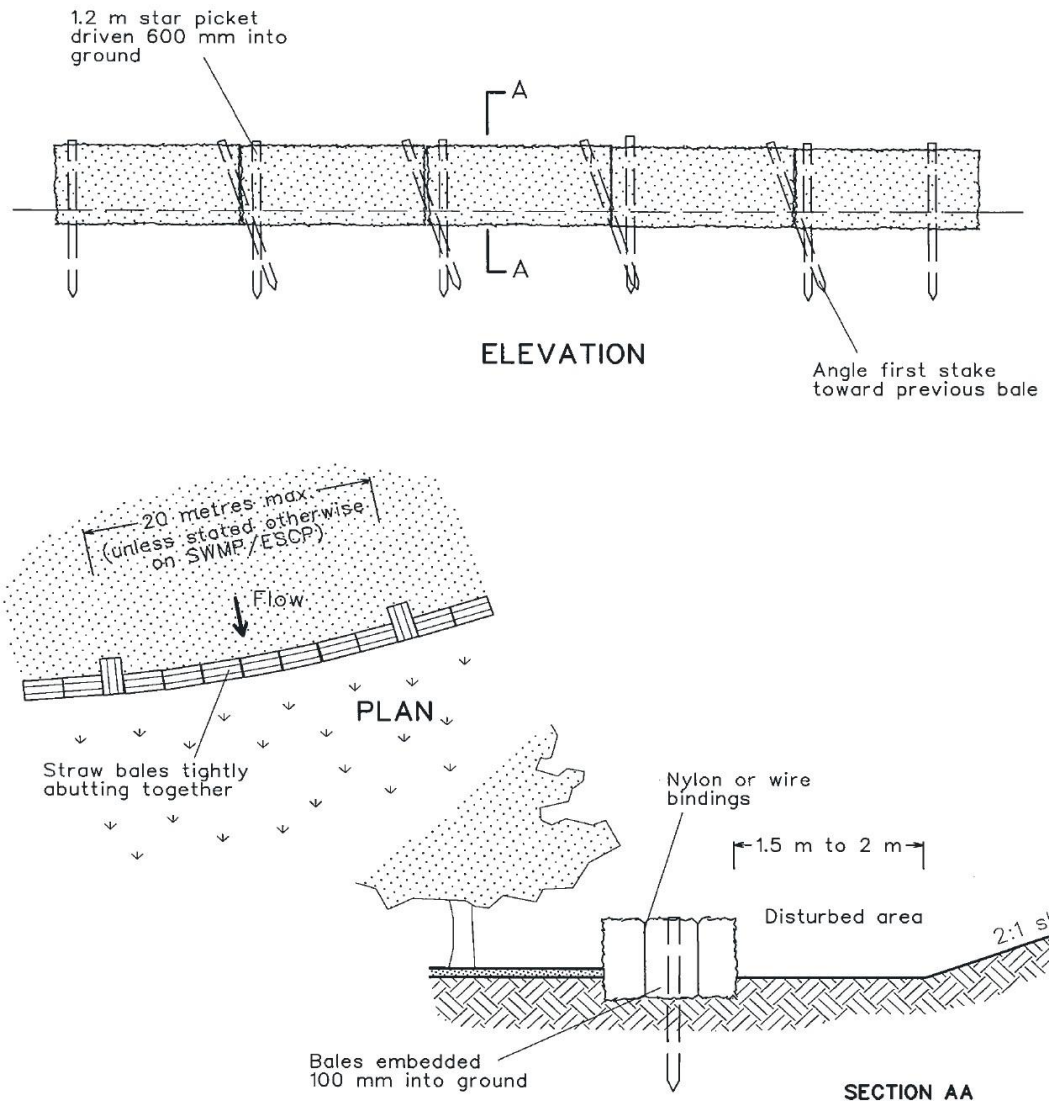
Appendix B – ESC Standard Drawings



Construction Notes

1. Construct sediment fences as close as possible to being parallel to the contours of the site, but with small returns as shown in the drawing to limit the catchment area of any one section. The catchment area should be small enough to limit water flow if concentrated at one point to 50 litres per second in the design storm event, usually the 10-year event.
2. Cut a 150-mm deep trench along the upslope line of the fence for the bottom of the fabric to be entrenched.
3. Drive 1.5 metre long star pickets into ground at 2.5 metre intervals (max) at the downslope edge of the trench. Ensure any star pickets are fitted with safety caps.
4. Fix self-supporting geotextile to the upslope side of the posts ensuring it goes to the base of the trench. Fix the geotextile with wire ties or as recommended by the manufacturer. Only use geotextile specifically produced for sediment fencing. The use of shade cloth for this purpose is not satisfactory.
5. Join sections of fabric at a support post with a 150-mm overlap.
6. Backfill the trench over the base of the fabric and compact it thoroughly over the geotextile.

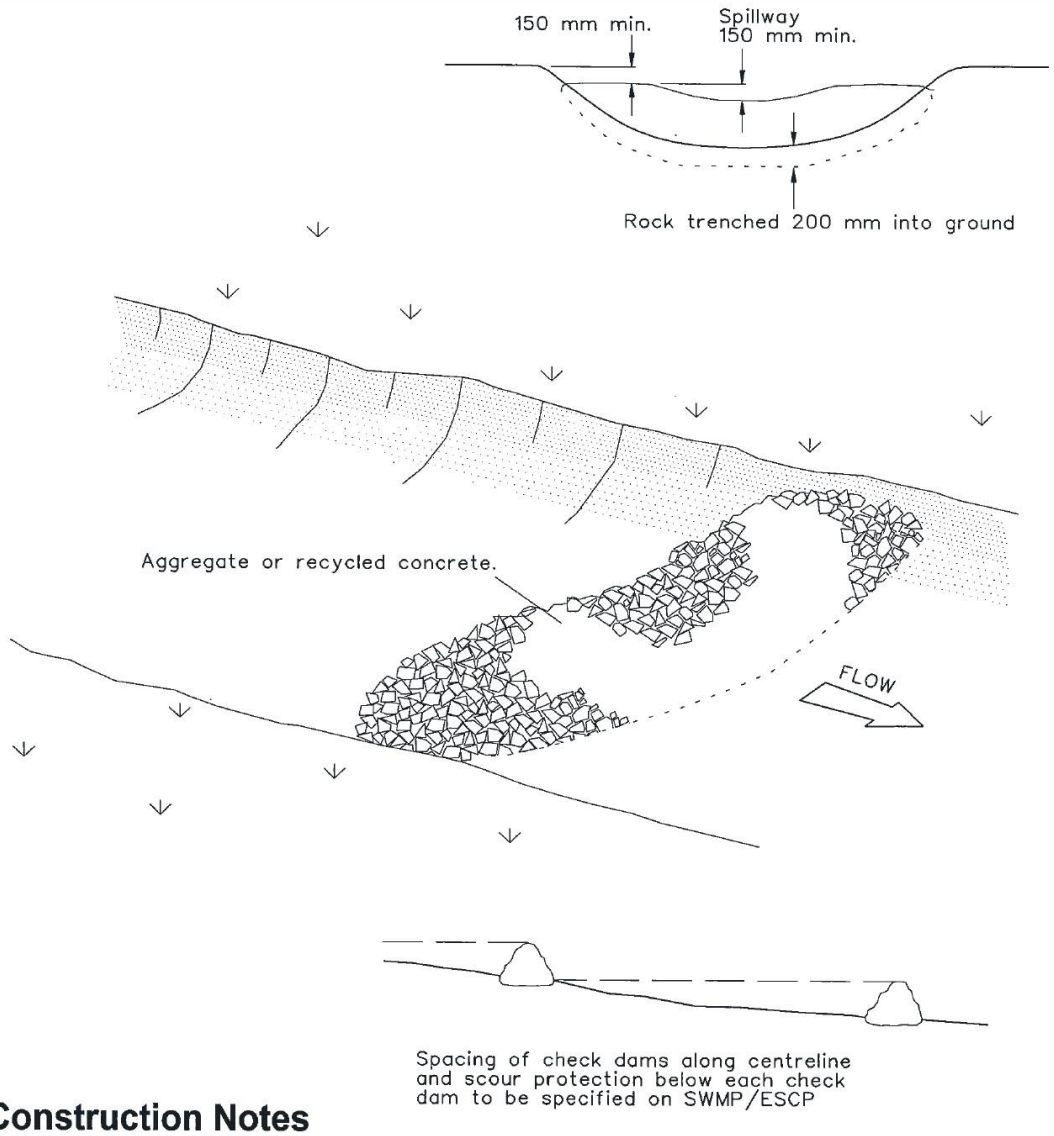
SEDIMENT FENCE **SD 6-8**



Construction Notes

1. Construct the straw bale filter as close as possible to being parallel to the contours of the site.
2. Place bales lengthwise in a row with ends tightly abutting. Use straw to fill any gaps between bales. Straws are to be placed parallel to ground.
3. Ensure that the maximum height of the filter is one bale.
4. Embed each bale in the ground 75 mm to 100 mm and anchor with two 1.2 metre star pickets or stakes. Angle the first star picket or stake in each bale towards the previously laid bale. Drive them 600 mm into the ground and, if possible, flush with the top of the bales. Where star pickets are used and they protrude above the bales, ensure they are fitted with safety caps.
5. Where a straw bale filter is constructed downslope from a disturbed batter, ensure the bales are placed 1 to 2 metres downslope from the toe.
6. Establish a maintenance program that ensures the integrity of the bales is retained - they could require replacement each two to four months.

STRAW BALE FILTER SD 6-7

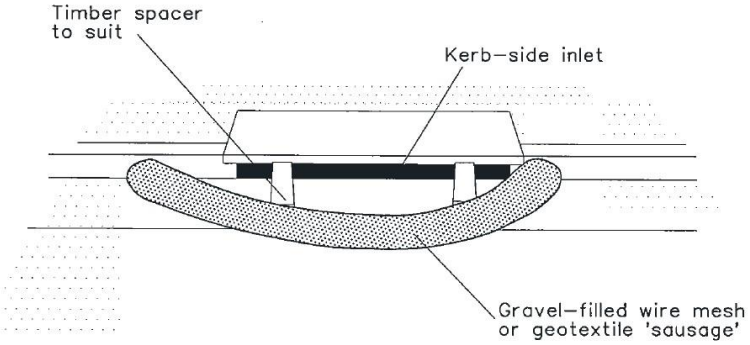


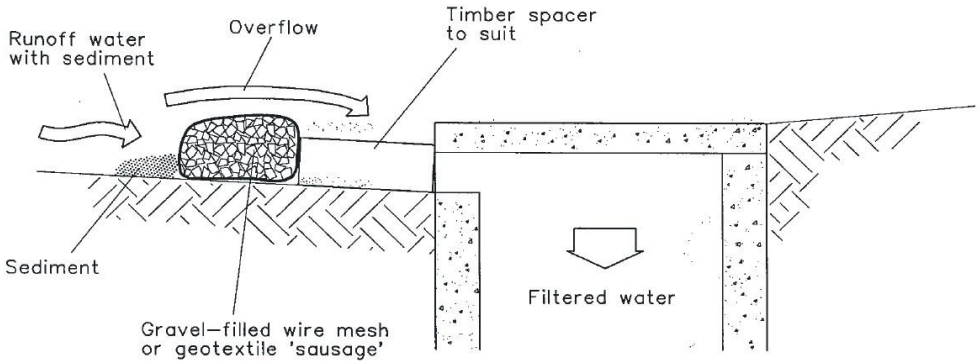
Construction Notes

1. Check dams can be built with various materials, including rocks, logs, sandbags and straw bales. The maintenance program should ensure their integrity is retained, especially where constructed with straw bales. In the case of bales, this might require their replacement each two to four months.
2. Trench the check dam 200 mm into the ground across its whole width. Where rock is used, fill the trenches to at least 100 mm above the ground surface to reduce the risk of undercutting.
3. Normally, their maximum height should not exceed 600 mm above the gully floor. The centre should act as a spillway, being at least 150 mm lower than the outer edges.
4. Space the dams so the toe of the upstream dam is level with the spillway of the next downstream dam.

ROCK CHECK DAM

SD 5-4





NOTE: This practice only to be used where specified in an approved SWMP/ESCP.

Construction Notes

1. Install filters to kerb inlets only at sag points.
2. Fabricate a sleeve made from geotextile or wire mesh longer than the length of the inlet pit and fill it with 25 mm to 50 mm gravel.
3. Form an elliptical cross-section about 150 mm high x 400 mm wide.
4. Place the filter at the opening leaving at least a 100-mm space between it and the kerb inlet. Maintain the opening with spacer blocks.
5. Form a seal with the kerb to prevent sediment bypassing the filter.
6. Sandbags filled with gravel can substitute for the mesh or geotextile providing they are placed so that they firmly abut each other and sediment-laden waters cannot pass between.

MESH AND GRAVEL INLET FILTER SD 6-11

Appendix C – Construction Noise Management Plan

Construction Noise Management Plan

Timber Processing Facility – Particle Board

124 Lowes Mount Road, Oberon NSW

Borg Construction Pty Ltd

19th May 2021

Revision History

Rev No.	Revision Date	Author / Position	Details	Reviewed / Authorised	
				Name / Position	Signature
0	04/04/17	Carly McCormack Planning and Environmental Officer	Draft	Jeremy Welbourne Acoustics Engineer – Global Acoustics Victor Bendevski Environmental and Regulatory Compliance	
1	20/04/17	Carly McCormack Planning and Environmental Officer	Final Draft	Jeremy Welbourne Acoustics Engineer – Global Acoustics Victor Bendevski Environmental and Regulatory Compliance	
2	01/06/17	Carly McCormack Planning and Environmental Officer	Final	Victor Bendevski Environmental and Regulatory Compliance	
3	19/05/21	J Blomberg Environmental Manager	Review and update as per SSD 7016 condition C10, for submission to DPIE	V Bendevski Environmental & Regulatory Compliance	

Table of Contents

Definitions and Abbreviations

Abbreviation	Description
ABL	Assessment background level (ABL), the 10th percentile background noise level for a single period (day, evening or night) of a 24 hour monitoring period.
Ambient Noise	The all-encompassing noise associated within a given environment at a given time, usually composed of sound from all sources near and far.
Background Noise	Background noise is the term used to describe the underlying level of noise present in the ambient noise, measured in the absence of the noise under investigation, when extraneous noise is removed.
CEMP	Construction Environmental Management Plan
Day	The period from 7:00am to 6:00pm on Monday to Saturday, and 8:00am to 6:00pm on Sundays and Public Holidays
dB(A)	Noise level measurement units are decibels (dB). The “A” weighting scale is used to describe human response to noise.
DP&E	NSW Department of Planning and Environment
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence issued by the EPA under the POEO Act
Evening	The period from 6:00pm to 10:00pm
Incident	A set of circumstances causing or threatening material harm to the environment, and/or exceedance of the limits of performance criteria in Development Consent SSD 7016
$L_{Aeq\ (15\ min)}$	The average noise energy during a 15 minute period.
Night	The period from 10:00pm to 7:00am on Monday to Saturday, and 10:00pm to 8:00am on Sundays and Public Holidays
RBL	Rating background level (RBL), the background noise level for a period (day, evening or night) determined from ABL data.
Sound Level Meter (SLM)	An instrument consisting of a microphone, amplifier and indicating device, having a declared performance and designed to measure sound pressure levels.

1 Introduction

1.1 Background

Borg Panels operates an existing Medium Density Fibre (MDF) and particleboard production facility in Oberon, NSW, manufacturing a range of Customwood MDF products 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 Board manufacturing facility and undertake general site works (the Project) at the existing Borg Panels facility located on 124 Lowes Mount Road, Oberon.

The main components of the Project are:

- Construction of a dedicated particleboard manufacturing line;
- Provide additional infrastructure within existing buildings;
- Modernise the existing facility;
- Construct a new automated storage warehouse; and
- Construction of hardstand, water quality ponds and emergency catchment.

Since that date, the Minister for Planning has approved three modifications (MOD) to SSD 7016:

- MOD 1 – extension of mouldings warehouse, reorientation of materials handling building, layout changes 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 20th November 2018);
- MOD 2 – installation of an electricity generation gas turbine and ancillary equipment (approved 29th November 2019); and
- MOD 3 – additional materials handling equipment, extension to northern warehouse, changes to the site surface water system and construction of further hardstand (approved 22nd May 2020).

No additional conditions were imposed by the Minister during the assessment and approval of these modifications with regards to this Construction Noise Management Plan.

This Construction Noise Management Plan (CNMP) is a sub plan to the Construction Environment Management Plan (CEMP).

1.2 Construction Staging

Construction works commenced in June 2017 under approved SSD 7016 dated 29th May 2017, and essentially followed the Stages as outlined below:

- Stage 1 – Demolition of office building and site works, construction of detention basin and hardstand areas. Within this stage the construction of the detention basin and drainage swales will be undertaken first in order to ensure that the appropriate erosion and sediment control measures can be implemented as support for following stages. Stage 1 is to commence upon approval and is estimated to take approximately 6 months.
- Stage 2 – construction of particleboard manufacturing facility and installation of related plant and equipment, including modernisation of the existing plant. Stage 2 is to commence upon approval or slightly thereafter and is estimated to take up to 18-24 months, dependent on equipment and labour availability.
- Stage 3 – alterations and additions to existing MDF site and construction of new automated storage warehouse. Stage 3 is to commence post completion of Stage 2 and is estimated that this will take up to 9 months.
- Stage 4 – debarker chipper building and chip preparation area. Stage 4 may commence approximately 6 months after approval and is estimated to take up to 12 months to complete.

The activities included in the above four stages are complete. The works associated with the modifications described in section 1.1 Background have since followed. Works under MOD 1 are essentially complete. Works under MOD 2 have been completed with final commissioning of the new turbine expected May/June 2021, and activities under MOD 3 are progressing.

1.3 Purpose of this Plan

This CNMP has been developed to address potential noise impacts on sensitive receivers and to satisfy the requirements set out in Condition B15 of Development Consent SSD 7016 for the Project, and includes information on the following:

- Relevant legislation and guidelines for noise generated during construction of the Project;
- Potential sensitive receivers who may be affected by noise generated by the Project;
- Noise impacts potentially arising from the Project;
- Safeguards, mitigation measures and monitoring to manage noise impacts during construction;
- Roles and responsibilities of those involved in the design and implementation of noise management controls; and
- An effective monitoring, auditing and reporting framework to assess the effectiveness of the controls implemented.

2 Legislative and Regulatory Compliance

2.1 Relevant Legislation

Key environmental legislation relating to noise management for the Project includes:

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

2.2 Conditions of Consent

The Development Consent (SSD 7016) conditions relevant to noise that have been considered in this Plan are detailed in **Table 1**.

Table 1 – Development Consent Conditions

<table>
<tr><th>No.</th><th>Requirement</th><th>Document Reference</th></tr>
<tr><td></td><td>NOISE</td><td></td></tr>
<tr><td></td><td>Hours of Work</td><td></td></tr>
<tr><td>B13</td><td>The Applicant must comply with the hours detailed in Table 1, unless otherwise agreed in writing by the Secretary.

Table 1: Hours of Work<table><tr><th>Activity</th><th>Day</th><th>Time</th></tr><tr><td>Earthworks and Construction</td><td>Monday – Friday
Saturday</td><td>7 am to 7 pm
8 am to 1 pm</td></tr><tr><td>Operation</td><td>Monday – Sunday</td><td>24 hours</td></tr></table></td><td>Section 2.6</td></tr>
<tr><td>B14</td><td>Works outside of the hours identified in Condition B13 may be undertaken in the following circumstances:

(a) works that are inaudible at the nearest sensitive receivers;

(b) works agreed to in writing by the Secretary;

(c) for the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or

(d) where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm.</td><td>Section 2.6</td></tr>
<tr><td></td><td>Construction Noise Management Plan</td><td></td></tr>
<tr><td>B15</td><td>The Applicant must prepare a Construction Noise Management Plan (CNMP) for the Project to manage construction noise. The plan must form part of the CEMP required by Condition C1 and must:</td><td>This Plan</td></tr>
<tr><td></td><td>(a) be prepared by a suitably qualified and experienced noise expert;</td><td>Reviewed by Global Acoustics</td></tr>
<tr><td></td><td>(b) be approved by the Secretary prior to the commencement of construction of the Project;</td><td></td></tr>
<tr><td></td><td>(c) describe procedures for achieving the noise limits in Table 2;</td><td>Section 6</td></tr>
<tr><td></td><td>(d) describe the measures to be implemented to manage noisy works such as rock/concrete breaking activities, in close proximity to sensitive receivers;</td><td>Section 6</td></tr>
</table>

<table>
<tr><td></td><td>(e) include strategies that have been developed with the community for managing noisy works;</td><td>Table 7 & Section 9.1.2</td></tr>
<tr><td></td><td>(f) describe the community consultation undertaken to develop the strategies in e) above; and</td><td>Section 9.1.2</td></tr>
<tr><td></td><td>(g) include a complaints management system that would be implemented for the duration of the Project.</td><td>Section 9.2</td></tr>
<tr><td></td><td>Operational Noise Limits</td><td></td></tr>
<tr><td>B16</td><td>The Applicant must ensure that noise generated by the Development does not exceed the noise limits in Table 2.

Table 2: Noise Limits dB(A)
<table>
<tr><th>Location</th><th>Day
$L_{Aeq(15\ minute)}$</th><th>Evening
$L_{Aeq(15\ minute)}$</th><th>Night
$L_{Aeq(15\ minute)}$</th></tr>
<tr><td>All sensitive receivers</td><td>55</td><td>50</td><td>45</td></tr>
</table>
Note: Noise generated by the Development is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy.</td><td>Section 5</td></tr>
<tr><td></td><td>Mobile Wood Chippers</td><td></td></tr>
<tr><td>B22</td><td>During construction, the Applicant must ensure that mobile wood chippers are not operating simultaneously with rock/concrete breaking activities.</td><td>Section 6 Table 7</td></tr>
</table>

2.3 Mitigation Measures

This Plan also considers the requirements of the Mitigation Measures from the Environmental Impact Statement (EIS) and Response to Submissions (RTS) for the Project.

There are no noise mitigation measures specific to construction, however Borg commits to achieving noise limits prescribed for the Project, and managing noisy works including concrete breaking in close proximity to sensitive receivers. Table 7 General Construction Noise Impact Mitigation Measures of this Plan outlines the commitments made to manage noise impacts from construction activities.

2.4 Environment Protection Licence

Environment Protection Licence 3035 (EPL 3035) specifies noise limits for operation of the existing facility. Condition L4 of the EPL provides noise conditions, which are reproduced below:

L4 Noise limits

L4.1 Noise from the premises must not exceed:
a) 55 dB(A) $L_{Aeq(15\ minute)}$ during the day (7am to 6pm); and
b) 50 dB(A) $L_{Aeq(15\ minute)}$ during the evening (6pm to 10pm); and
c) at all other times 45 dB(A) $L_{Aeq\ (15\ minute)}$, except as expressly provided by this licence.

Where L_{Aeq} means the equivalent continuous noise level – the level of noise equivalent to the energy-average of noise levels occurring over a measurement period.

L4.2 To determine compliance with condition L4.1, noise must be measured at or computed for Oberon High School or any other noise sensitive locations (such as a residence/school). A modifying factor correction must be applied for tonal, impulsive or intermittent noise in accordance with the "NSW Industrial Noise Policy (EPA, January 2000)".

L4.3 The noise limits set out in condition L4.1 apply under all meteorological conditions except for the following:

a) Wind speeds greater than 3 metres/second at 10 metres above ground level; or
b) Stability category F temperature inversion conditions and wind speeds greater than 2 metres/second at 10 metres above ground level; or
c) Stability category G temperature inversion conditions.

L4.4 For the purpose of condition L4.3:

a) Data recorded by the meteorological station identified as EPA Licence Point 26 must be used to determine meteorological conditions; and
b) Temperature inversion conditions (stability category) are to be determined by the sigma-theta method referred to in Part E4 of Appendix E to the NSW Industrial Noise Policy.

Borg will operate the Project with continuation of these existing noise limits.

2.5 Guidelines and Standards

The guidelines and standards relevant to noise management for the Project include:

- DECC 2009, *Interim Construction Noise Guideline (ICNG)*, NSW Department of Environment and Climate Change: Sydney NSW; and
- EPA 2017, *Noise Policy for Industry (NPfI)*, Environment Protection Authority. Sydney NSW.

2.6 Construction Noise Management Levels

Construction noise can represent a significant risk of impact on the amenity of sensitive receivers. The Interim Construction Noise Guideline (DECC, 2009) was developed to focus on applying work practices most suited to minimising construction noise impacts, rather than focusing only on achieving numeric noise levels. While some noise from construction sites is inevitable, the aim of the guideline is to protect the majority of residences and other sensitive land uses from noise pollution most of the time.

Table 2 sets out management levels for construction noise at residences and how they are to be applied. The rating background level (RBL), i.e. the overall background noise level measured in each relevant assessment period, is used when determining the management level.

Table 2 – Noise Management Levels from the ICNG (DECC, 2009)

Time of Day	Management Level LAeq (15 min) *	Notes
Residential Premises		
Recommended Standard Hours Monday to Friday 7am to 6pm Saturday 8am to 1pm No work on Sundays or Public Holidays	Noise affected RBL + 10 dB	The noise affected level represents the point above which there may be some community reaction to noise.
		Where the predicted or measured LAeq (15 min) is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level.
		The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.
	Highly noise affected 75 dB(A)	The highly noise affected level represents the point above which there may be strong community reaction to noise.
		Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restricting the hours that the very noisy activities can occur, taking into account:
		1. times identified by the community when they are less sensitive to noise (such as before and after school for works near schools, or midmorning or mid-afternoon for works near residences 2. if the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.
Outside Recommended Standard Hours	Noise affected RBL + 5 dB	A strong justification would typically be required for works outside the recommended standard hours.
		The proponent should apply all feasible and reasonable work practices to meet the noise affected level.
		Where all feasible and reasonable practices have been applied and noise is more than 5 dB(A) above the noise affected level, the proponent should negotiate with the community.
Commercial Premises	70 dB(A)	External noise level at most affected point of the premises.

* Noise levels apply at the property boundary that is most exposed to construction noise at a height of 1.5 m above ground level. If the property boundary is more than 30 m from the residence, the location for measuring or predicting noise levels is at the most noise-affected point within 30 m of the residence.

Other types of sensitive land uses such as schools or recreation areas may consider noise from construction to be disruptive when the property is in use. Management levels for noise at other sensitive land uses are summarised in **Table 3**.

Table 3 – Noise Management Levels for Sensitive Land Uses other than Residences

Land Use	**Management Level LAeq (15min)** **(Applies when property is in use)**
Classrooms at schools and other educational institutions	Internal noise level: 45 dB(A)
Hospital wards and operating theatres	Internal noise level: 45 dB(A)
Places of worship	Internal noise level: 45 dB(A)
Active recreation areas (characterised by sporting activities and activities which generate their own noise or focus for participants, making them less sensitive to external noise intrusion)	External noise level: 65 dB(A)
Passive recreation areas (characterised by contemplative activities that generate little noise and where benefits are compromised by external noise intrusion, for example, reading, meditation)	External noise level: 60 dB(A)
Community centres	Depends on the intended use of the centre. Refer to the recommended 'maximum' internal levels in AS2107 for specific uses.

Construction of the infrastructure will occur concurrently with operation of the existing facility. All construction will generally be undertaken during standard construction hours, with the exception of 6pm – 7pm Monday to Friday. The operational noise criterion for the evening period would apply during these hours, as conditioned in Development Consent SSD7016 and EPL 3035. Only unforeseen circumstances would require work to continue outside of these hours. When construction work outside of these hours is required, the operational noise criterion for the relevant period would apply, as conditioned in Development Consent SSD7016 and EPL 3035.

Borg propose to generally restrict site noise emission from both construction and operational tasks combined to comply with the day period operational noise criterion of $L_{Aeq(15\ min)}$ 55 dB and the evening period operational noise criterion of $L_{Aeq\ (15\ min)}$ 50 dB, conditioned in Development Consent SSD7016 and EPL 3035. The exception will be for short duration high noise emitting tasks as such as rock/concrete breaking, for which the "highly noise affected" construction noise criterion of $L_{Aeq\ (15\ min)}$ 75 dB is deemed appropriate. Such construction tasks should be restricted to the least noise sensitive times of day. It is recommended all potentially affected receivers are notified in advance of any construction tasks where the operational day period criterion is likely to be exceeded.

3 Sensitive Receivers

The subject land is located on the northern outskirts of Oberon, to the east of Lowes Mount Road. As per the Oberon Council Local Environmental Plan (LEP) 2013, the land zoning classification of the subject site is IN1 General Industrial. The Borg operations are part of a larger industrial precinct operated by a number of separate companies, which generally involve timber product manufacture.

Land use north, east and west of the subject site is generally agricultural. Land use to the immediate south is industrial / recreational, and further south residential and the township of Oberon.

For the purpose of identifying and managing noise impacts representative noise sensitive receivers (NSR) have been selected, including the nearest and potentially most affected residences to the site, and Oberon High School. The following NSRs are considered representative of all potentially affected receivers and are referred to in this Plan. Refer to **Figure 1** for details.

Table 4 – Noise Sensitive Receivers

Receiver ID	Receiver Location
R01	32 O'Connell Road
R02	6 Herborn Street
R03	Oberon High School
R04	10 Tasman Street
R05	127 Hazelgrove Road
R06	26 Cunyngham Street
R07	131 Hazelgrove Road
R08	2 Herborn Street
R09	15-19 Albion Street
R10	Oberon Caravan Park

Figure 1 – Noise Sensitive Receivers (Source: Global Acoustics, May 2016)

4 Noise and Vibration Impact Assessment

Global Acoustics (May 2016) was engaged by Borg to carry out a noise and vibration impact assessment for the proposed expansion of the panel manufacturing facility. This assessment considered impacts associated with noise emission from the existing site, and, the expansion. Potential impact from operational noise, low frequency noise, sleep disturbance, cumulative noise, construction noise and road traffic noise were assessed. A model validation assessment was undertaken to provide an estimate of model prediction accuracy.

Acoustic advice was also provided for construction and operation of those items included in modifications 1 through 3. At each modification, the acoustic consultant concluded that there would be no change to site noise emission levels with continued compliance predicted for all receptors, and that construction activities should continue to be managed in accordance with the CNMP (this Plan).

4.1 Operation

Model predictions indicate the proposed expansion could generally comply with existing EPL operational noise criteria, when recommended management strategies are implemented, and if limiting sound powers for proposed infrastructure and recommended noise controls for existing plant are achieved. The exception is 15-19 Albion Street, for which a minor 1 dB exceedance is predicted for the day period during enhancing meteorological conditions if a mobile chipper is operational. Compliance was predicted for all receivers for 'normal' operations when no mobile chipping plant is operated.

4.2 Construction

4.2.1 Noise

Construction activities will be undertaken in conjunction with regular operation of the existing site. Borg propose to generally restrict site noise emission from both construction and operational tasks combined to comply with operational noise criteria conditioned in Development Consent SSD7016 and EPL 3035.

Rock or concrete breaking, earthworks, and, infrastructure installation were assessed. Model predictions for the earthworks and installation scenarios indicate general compliance with the day period operational noise criterion at all receivers, with the exception of 15-19 Albion Street. At this location, exceedances were predicted during prevailing wind conditions if a mobile chipper is operated concurrently with construction plant. Exceedance of the evening period operational noise criterion is predicted at R02, R03, R06, R08, R09 and R10. These exceedances are predicted during calm and prevailing wind conditions when a mobile chipper is operated concurrently with construction plant. Construction noise can be managed through monitoring weather conditions, restricting use of the mobile chipper during enhancing conditions if a large amount of construction plant is operating, and restricting construction activities where possible to the hours detailed in the ICNG.

Rock breaking was assessed against the “highly affected” construction noise criterion of $L_{Aeq(15min)}$ 75 dB, as the duration would be relatively short compared with other construction tasks, and few options are available to mitigate noise from this activity. Predictions were well below this criterion.

4.2.2 Vibration

Due to the distance to sensitive receivers from operational and construction areas, no vibration impact is expected.

4.2.3 Road Traffic Noise

Construction and operational road traffic noise impacts were assessed for North Street and Albion Street, the roads indicated in the Traffic Impact Assessment report to receive the greatest traffic flows. The majority of both construction and operational project traffic generated by the project will occur outside of general peak hour traffic flows. Increases to road traffic noise relative to the existing situation were found to be insignificant, and less than 1 dB. Such an increase is unlikely to be either measurable, or perceptible to the human ear.

4.2.4 Construction Plant

Table 5 lists plant included in the construction noise assessment.

Table 5 – Potential Noise Sources

Equipment Type	Earthworks	Installation	Rock Breaking
Excavator	4	0	0
Loader	1	0	0
Dozer	1	0	0
Dump truck	2	0	0
Grader	1	0	0
Roller	1	0	0
Articulated truck	2	0	0
Mobile crane	0	2	0
Concrete truck	0	1	0
Delivery Truck	0	2	0
Bobcat	0	1	0
Rock breaker	0	0	1

Predictions for the rock breaking scenarios include a plus 5 dB modifying factor penalty to account for the intermittent nature of rock breaking works. It is recommended mobile chipping plant is not operated during rock breaking works. It is considered reasonable to assess rock breaking against the “highly affected” construction noise criterion of $L_{Aeq\ (15\ min)}$ 75 dB, as the duration would be relatively short compared with other construction tasks, and few options are available to mitigate noise from this activity. Predictions (without mobile chipping plant operating) are well below this criterion.

5 Construction Noise Management Levels

Construction activities will be undertaken simultaneously with regular operation of the existing site. Borg propose to generally restrict site noise emission from both construction and operational tasks combined to comply with operational noise criteria conditioned in Development Consent SSD 7016 and EPL 3035.

Following consideration of the ICNG (**Section 2.6**), Development Consent (SSD 7016) conditions (**Section 2.2**), EPL 3035 (**Section 2.4**) and the measured background noise levels (refer Global Acoustics, May 2016), **Table 6** summarises the Noise Management Levels (NMLs) for all residential receivers.

Table 6 – Operation and Construction Noise Management Levels

Location	**Activity**	**Day (7am-6pm) LAeq (15 min)**	**Evening (6pm-10pm) LAeq (15 min)**	**Night (10pm-7am) LAeq (15 min)**
All residential receivers	General Construction	55	50	45
	Rock/ Concrete Breaking	75		

Work outside approved construction hours are not expected, however unforeseen constraints relating to delivery of materials or equipment, or other technical requirements, may see some activities undertaken outside approved hours. Where required, out of hours works will be undertaken to meet the noise management levels in **Table 6**.

Development Consent SSD 7016 Condition B14 requires non-standard construction hour work to be inaudible at the nearest sensitive receivers. The Development Consent takes precedence over the ICNG and will be adopted in this plan.

In this instance, “inaudible” means the activity is not discernible from general operation activities.

6 Impact Management Measures

In order to ensure project goals are met and to maintain impacts at a practical minimum, the measures and safeguards summarised in **Table 7** will be implemented by Borg throughout the construction phase of the Project.

Table 7 – General Construction Noise Impact Mitigation Measures

Mitigation Measures	Timing	Responsibility
Administrative Controls		
Construction activities that are audible at any residential receptor, shall only be undertaken during the following hours: a) 7:00 am to 7:00 pm Monday to Friday b) 8:00 am to 1:00 pm Saturdays c) at no time on Sundays or public holidays.	Daily	Project Manager/ Environment Officer
The DECC construction noise management levels, and site operational levels, will be achieved as far as practicable. Where works are predicted to exceed the NMLs (refer Section 5), residents should be informed of the time, type, duration and noise level of noisy activities prior to the anticipated exceedance.	Daily	Project Manager/ Environment Officer
Provide an induction to site personnel (which includes Environmental Awareness Training) addressing the requirements of this CNMP and their responsibilities with regard to noise management.	Prior to starting work on site	Project Manager/ Environment Officer
Ensure truck drivers are informed of designated vehicle routes, parking locations, delivery hours, and minimising engine braking and idling.	Daily	Project Manager/ Environment Officer
Provide education of supervisors, operators and sub-contractors on the need to minimise noise through Toolbox meetings and on-site coaching.	As needed	Project Manager/ Environment Officer
Inform potentially noise affected residents of the nature of works to be carried out, the expected noise levels and duration, as well as relevant contact details.	As needed	Project Manager/ Environment Officer
Restrict use of mobile chippers during enhancing conditions if a large amount of construction plant is operating.	Daily	Project Manager/ Environment Officer
Where works are expected to be undertaken outside approved work hours, ensure operational noise management levels can be met for the relevant period (evening or night).	As needed	Project Manager/ Environment Officer
Procedures for handling noise complaints (Section 9) will be implemented including recording, reporting and acting on complaints.	As needed	Project Manager/ Environment Officer
Construction Controls – General		
Select appropriately sized equipment for the task, such as excavation equipment.	Daily	Project Manager/ Environment Officer

Mitigation Measures	Timing	Responsibility
Select low noise emission plant where possible.	Daily	Project Manager/ Environment Officer
Avoid, where possible, noisy plant working simultaneously close together.	Daily	Project Manager/ Environment Officer
Ensure all equipment is equipped with reasonable and feasible noise control (e.g. mufflers, acoustic enclosures, flashing lights or non-tonal reversing alarms (squawkers) as an alternative to traditional reversing beepers) and is turned off when not in use.	Daily	Project Manager/ Environment Officer
Ensure equipment is operated in the correct manner and adequately maintained - including replacement of engine covers, repair of defective silencing equipment, tightening of rattling components, repair of leakages in air lines and shutting down equipment not in use.	Daily	Project Manager/ Environment Officer
Where practicable, maintenance work on all construction plant will be carried out away from noise sensitive receivers and confined to standard construction hours.	Daily	Project Manager/ Environment Officer
The site entry and egress points will be set as far from receivers as practical.	Once-off	Project Manager/ Environment Officer
Ensure traffic movement is kept to a minimum, e.g. ensure trucks are fully loaded so that the volume of each delivery is maximised.	Daily	Project Manager/ Environment Officer
Avoid dropping material from a height into unlined metal trays or bins.	Daily	Project Manager/ Environment Officer
Construction Controls – Rock/Concrete Breaking		
Mobile wood chipper and rock/ concrete breaking activities are not to be undertaken concurrently. A permit to work is required for rock/ concrete breaking activities that requires the construction team to consult with mobile wood chipper operators to ensure operations do not occur simultaneously.	Daily	Project Manager/ Environment Officer
Consult with Oberon High School prior to rock/concrete breaking activities. Where feasible and reasonable, plan works to limit rock/concrete breaking activities during important events, e.g. examination periods.	Daily	Project Manager/ Environment Officer
Undertake rock/concrete breaking activities only between 8am and 6pm Monday to Friday, and 8am and 1pm Saturdays.	Daily	Project Manager/ Environment Officer

Mitigation Measures	Timing	Responsibility
Undertake rock/concrete breaking in continuous blocks not exceeding three hours each with a minimum respite from those activities and works of not less than one hour between each block.	Daily	Project Manager/ Environment Officer
Monitoring and Auditing		
Monitor construction noise levels to verify compliance with the CNMP. Prepare quarterly monitoring summaries for submission to the Project team.	As needed	Environment Officer
Monitor meteorological conditions (i.e. wind speed and direction) during construction activities and adjust activities when prevailing (enhancing)meteorological conditions occur.	As needed	Environment Officer
Report any exceedance of limits to DPIE and EPA in accordance with Development Consent SSD 7016 and EPL 3035.	As needed	Environment Officer

7 Noise Monitoring

7.1 Overview

The Noise Impact Assessment (Global Acoustics, May 2016) and subsequent advice provided as required for each modification indicates general compliance with the day period operational noise criterion at all receivers, when management measures are implemented. Therefore, construction noise monitoring will be undertaken to:

- Verify compliance with the noise objectives presented in **Section 5**;
- In response to any exceedance of limits; and
- In response to complaints where this is considered appropriate.

7.2 Monitoring Frequency

7.2.1 Compliance Monitoring

The following compliance monitoring, to be undertaken during construction by a suitably qualified noise expert, is recommended for the project:

- Periodic attended noise monitoring at the potentially most affected residences during the day period, with a frequency of once per quarter, during the construction phase of the Project; and
- If exceedance of limits is demonstrated, additional mitigation controls are to be implemented, and follow-up monitoring undertaken within one week of the exceedance.

Construction noise performance is reported as detailed in **Section 10**.

7.2.2 Management Monitoring

In addition to quarterly compliance monitoring, off-site management noise monitoring by suitably trained site personnel should be undertaken regularly, particularly during periods of meteorological enhancement and on commencement of new construction activities or areas, to ensure relevant noise criteria are adhered to.

Operations should be modified accordingly as required when exceedance or potential exceedances are measured. Modifications may include, but are not limited to, erection of temporary barriers or screens, temporary shutdown of equipment until adverse weather conditions change, or relocating equipment to less sensitive areas when feasible to do so.

7.3 Monitoring Locations

Four representative locations have been chosen for monitoring as summarised in **Table 8**. Refer to **Figure 2** for these locations.

Table 8 – Noise Monitoring Locations

Location ID	Monitoring Location
NM1	Oberon Caravan Park
NM2	Intersection Pine Street and Herborn Street
NM3	127 Hazelgrove Road
NM4	Intersection Tasman Street and Earl Street

Noise management levels for each monitoring location are provided in **Table 6**. Where these are exceeded by construction-related noise sources, the exceedance should be investigated (as discussed in **Section 10**) to determine the cause and any necessary mitigation.

7.3.1 Instrumentation

The following requirements should be observed whilst monitoring:

- Before commencing monitoring, ensure the Sound Level Meter's (SLM) laboratory calibration is current (refer to the sticker on the unit).
- If unsure about the functions of the SLM, refer to the instruction sheet in the case. All site environment officers should be trained in the use of the SLM and training documents kept on file.
- Ensure the windscreen is attached and that the SLM settings include a windscreen factor, the SLM is set to A-weighted and fast response.
- Prior to and completing the measurement, the SLM should be field calibrated using the supplied calibrator. Ensure that the pre- and post- measurements do not differ by more than 0.5 dB(A).

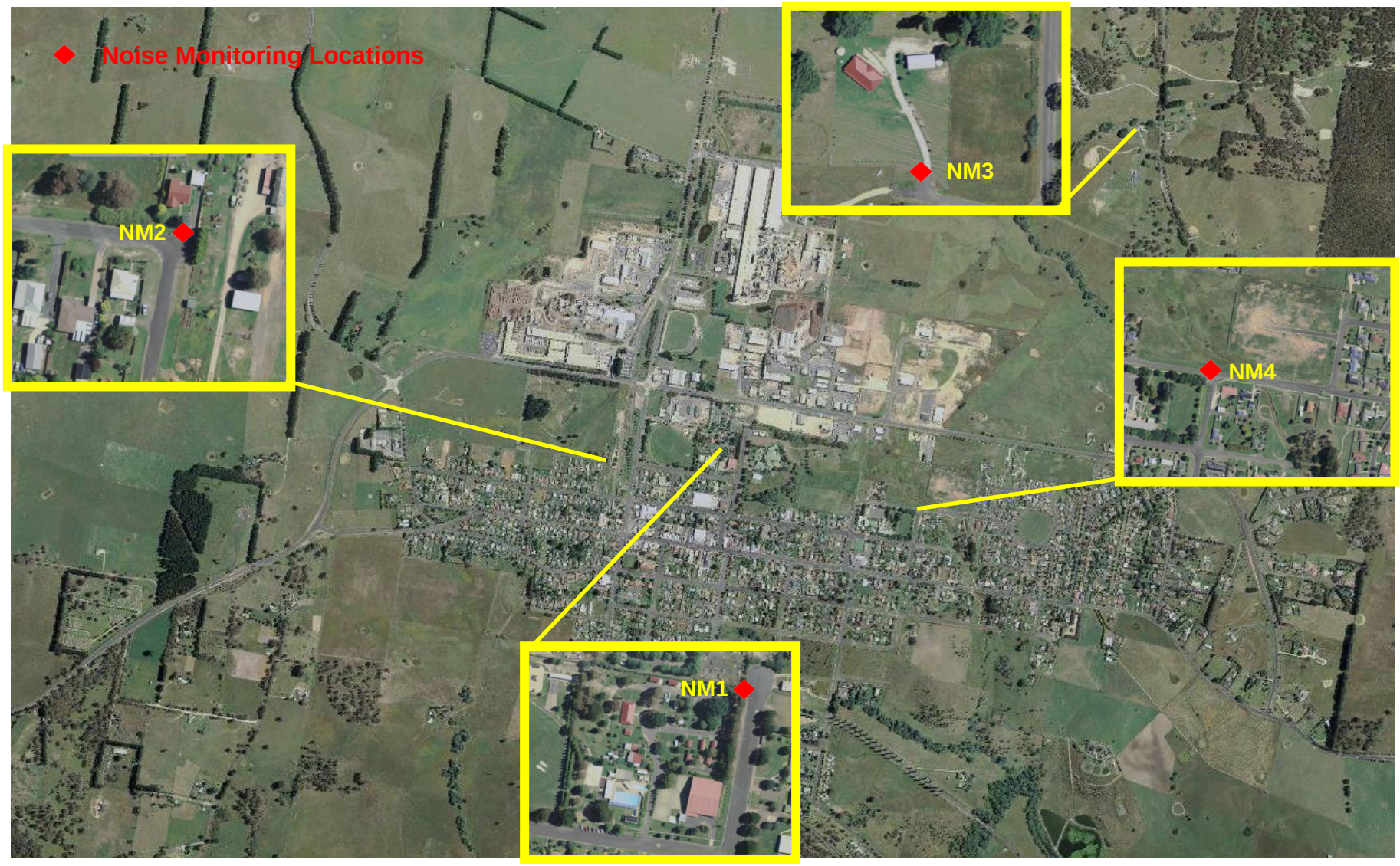


Figure 2 – Noise Monitoring Locations

7.3.2 Weather Conditions

Monitoring should be undertaken on days of light winds (<5 m/s) and no rain. Wind speed is to be monitored using a hand held wind speed monitor. Rain and too much wind will elevate the noise level. If there is no choice but to monitor in inclement weather, note the conditions on the field sheet.

NMLs listed in Table 6 apply under all meteorological conditions except for the following:

- Wind speeds greater than 3 metres/second at 10 metres above ground level; or
- Stability category F temperature inversion conditions and wind speeds greater than 2 metres/second at 10 metres above ground level; or
- Stability category G temperature inversion conditions.

Weather conditions measured at the site weather station should be used to determine applicability of meteorological exclusion rules.

7.3.3 Construction Noise Monitoring Procedure

Monitoring should be undertaken for a duration of 15 minutes at each location. More than one 15-minute measurement can be undertaken at each location.

The following information should be recorded in accordance with *AS 1055.2—1997 Acoustics—Description and measurement of environmental noise*. The field sheet for noise monitoring should capture the following details:

- Date and time of measurement;
- Details of the measurement positions, instrumentation used and types of analyses made;
- Weather conditions at each monitoring location, recorded at 1.8 metres above ground level, during the measurements (wind direction, wind velocity, relative humidity, temperature, recent precipitation, cloud cover (oktas));
- Description of the noise being investigated as well as operating conditions of the sound source(s) under investigation;
- Noise due to other sources including normal and possibly unusual noises;
- Statistical noise metric results including L_{A1}, L_{A10}, L_{Aeq} and L_{A90} due to all noise sources during the measurement period;
- Estimated or calculated $L_{Aeq\ (15min)}$ attributable to Borg noise sources (in the absence of extraneous noise sources) during the measurement period;
- Associated observations (vibrations, amplitude or frequency modulation or similar).

Noise monitoring results will be recorded on a Noise Monitoring Record Form. An example Noise Monitoring Record form is provided as **Appendix B**.

Correction for Background Noise

Operational noise management levels are used to assess construction noise (refer **Section 5**). Borg propose to generally restrict site noise emission from both construction and specific operational tasks combined to comply with operational noise criteria.

Background noise such as traffic and other non-operational influences are not included in this total. Therefore, it is important to distinguish between operational noise and other noises. This can be done in several ways:

i. Use the SLM display while monitoring to estimate the noise level from specific sources dominant at the time, e.g. when no traffic is present and construction/operational equipment is strongly dominant or where construction/operation is inaudible over the traffic.
ii. Also, note the proportion of time that construction/operational noise is dominant, e.g. 10%, 50% etc, and under what conditions this occurs.
iii. If practical, use the 'pause' and 'back erase' functions of the SLM to eliminate any extraneous noise such as dogs barking or lawn mowers.
iv. Where possible, or in cooperation with operators, measure background noise with no construction activity, then again with construction underway. The construction noise can then be compared with the background noise. This could be for durations of just a few minutes or, with cooperation, two separate 15 minute recordings.

Correction for Impulsive Noise
Impulsive noise is noise having a high peak of short duration or a sequence of such peaks (EPA, 2000).

To assess whether noise is substantially impulsive, noisy activities should be measured with the SLM set on A-weighted ***fast*** response and ***impulse*** response. According to the INP, noise is considered impulsive if the difference between the two values is more than 2 dB(A). Apply difference in measured levels as the correction, up to a maximum of 5 dB.

Correction for Intermittent Noise
Intermittent noise is when the level of noise suddenly drops to that of the background noise several times during the assessment period, with a noticeable change in noise level of at least 5 dB (EPA, 2000).

In accordance with the INP, a correction of 5 dB(A) for intermittent noise should be made to the measured L_{Aeq} noise levels to account for the greater annoyance. Adjustment to be applied for night-time period only.

8 Training

Borg shall implement appropriate training and induction in the requirements of this CNMP. All employees and contractors working on site will undergo site induction training, which includes Environmental Awareness Training. The induction will address:

- This CNMP;
- The existence of noise legislation and what this means for the Project, i.e. Noise Management Levels;
- Delivery hours and locations;
- Reporting and recording environmental non-compliance related to noise;
- Noise minimisation measures; and
- The importance of regular plant maintenance.

Records will be kept of all personnel undertaking the site induction and training, including the contents of the training, date and name of trainer/s.

Key staff will undertake more comprehensive training relevant to their position and/or responsibility. This training may be provided as “toolbox” training or at a more advanced level by the Environment Officer.

Further details regarding the content of staff induction and training are outlined in the CEMP.

9 Community Consultation and Complaints Management

9.1 Community Consultation

Close community liaison will be maintained to ensure that local residents are aware of the times and durations when they may be affected by construction noise that exceeds the NML’s in **Table 6** (such as rock/concrete breaking activities) and to provide an avenue for communication between the community and the Project team.

The CEMP details the methods and timing for community consultation on the Project throughout the construction period.

9.1.1 Community Consultative Committee

Borg has an established joint Community Consultative Committee (CCC) that meets nominally quarterly to discuss environmental and operational aspects of the Borg Panels site. This existing CCC will be utilised to discuss and address general construction impacts, including noise management and mitigation measures. The CCC meeting will also provide a forum to provide feedback to Borg in relation to the environmental management of the Project.

9.1.2 Community Consultation for Managing Noisy Works

Strategies developed with the community for managing noisy works are documented in **Table 7**; refer section on Construction Controls – Rock/Concrete Breaking.

Community consultation undertaken to develop these strategies for managing noisy works included:

- Presentation and Project update to the Oberon Business and Tourism Association at their meeting held on 12 April 2017. An outline of activities to occur during construction, including rock/concrete breaking activities was presented, and included contact details for the construction period of the Project.
- Written email correspondence on 12 April 2017 with the Oberon High School Principal to inform that noise generating activities will occur during construction of the Project. The email was an invitation to assist in development of strategies for managing the noisy works and sought feedback and suggestions.

  Additionally, the Principal was advised further consultation will be undertaken prior to the activity occurring and where feasible and reasonable, Borg will plan works to limit rock/concrete breaking activities during important events, e.g. examination periods.

  Furthermore, an invite was extended to the School Principal to attend the CCC meeting workshop for developing strategies for managing noisy works.

- A meeting was held on the 18 May 2017 to update Oberon Council on the progress of the development application. This meeting was also used to discuss the management of noisy works during Project construction. Council agreed that the communication channels proposed in the CEMP were suitable, and also suggested the use of the Council community newsletter as a conduit to the public. This newsletter is sent to all households on the 15th of each month.

A project update letter dated 22nd February 2019 was distributed to the community via Oberon Council. This letter advised that the project had progressed well since approval in May 2017 and that commissioning of the new particleboard line was underway.

A workshop focusing on managing noisy works was held at CCC meeting dated 12th April 2017, prior to the noisy works being undertaken. Proposed strategies for managing the noisy works were presented, discussed and further developed with the CCC members. Strategies previously developed have been included in **Table 7**.

9.2 Inquiry and Complaints Management

9.2.1 Opportunities for Information Exchange

Borg has in place the following avenues to register inquiries and complaints related to construction and operational activities:

- A 24-hour freecall community liaison line (1800 802 795);
- Postal address for written complaints (Borg Panels, Private Mail Bag 1, Oberon NSW 2787); and
- Email address for electronic complaints (oberon_site@borgs.com.au).

The telephone number, postal and email address will be clearly displayed on a sign near the entrance to the construction site, in a position that is clearly visible to the public. This information will also be widely disseminated in the community and included on public information, which may include the website, local area advertisements, letterbox notifications and Project specific fact sheets.

9.2.2 Inquiry and Complaints Handling Process

Borg's community and stakeholder management system includes procedures for recording, investigating, tracking and handling of all inquiries and complaints, as detailed in the CEMP.

Once Borg has received verbal or written inquiries and/or complaints via telephone, email or post, the Environment Officer or their nominated delegate will:

- Undertake an immediate investigation into the nature/cause of the inquiry and/or complaint;
- Make initial contact with the community or stakeholder representative within 48 hours to clarify the reason for the inquiry and/or complaint and to notify of the investigation process including an appropriate re-notification time;
- Record the inquiry and/or complaint on the Community Complaints register. This register includes the following details:

- Complaint date and time;
- Site;
- Title;
- Category;
- Description;
- Caller details;
- Action;
- Status;
- Follow-up;
- Complaint validity; and
- Attachments.

- Further investigate the inquiry and/or complaint and provide the community or stakeholder representative with an explanation of the cause and details of any actions taken to mitigate its effect.

It should be noted that if the inquiry and/or complaint is classified as an incident of significance under the site Emergency Response Plan (ERP), the Environment Officer must follow the incident reporting process in that document and ensure appropriate resolution and sign-off.

Records of complaints will be maintained in the complaints register database for at least four years after the complaint was made.

10 Reporting

10.1 Scheduled Reporting

Construction noise performance is reported externally as follows:

- Quarterly attended noise compliance monitoring reports. Attended noise monitoring reports will include a comparison of measured noise levels with operational noise criteria conditioned in Development Consent SSD 7016 and EPL 3035. All attended measurement result analysis should consider criteria applicability (for project specific criteria) with regard to wind speed and atmospheric stability class;
- Quarterly updates of monitoring results on the Borg website; and
- 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.

10.2 Exceedance Reporting

In the event it is determined that an exceedance of a noise criterion has occurred, at the earliest opportunity (as soon as practicable) Borg will notify DPIE in accordance with Development Consent SSD 7016 and EPA in accordance with EPL 3035.

In accordance with Condition C12 of Development Consent SSD 7016, Borg will within 7 days of the exceedance date, provide a detailed report on the exceedance to the DPIE and EPA.

11 CNMP Review

In accordance with Development Consent SSD 7016 Condition C10, this CNMP 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 CNMP will be submitted to the Secretary DPIE for approval.

12 References

Environment Protection Authority (January 2000). *NSW Industrial Noise Policy*. ISBN 0 7313 2715 2, EPA 00/1.

Environment Protection Authority (September 2015). *Draft Industrial Noise Guideline*. ISBN 978 1 74359 940 2, EPA 2015/0185.

Global Acoustics (May 2016). *Borg Panels Timber Panel Processing Facility Oberon NSW – Noise and Vibration Impact Assessment*. Prepared for Borg Manufacturing.

Appendices

Appendix A – Noise Monitoring Record Form

Noise Monitoring Record Form	
Monitoring Location	
Description of Location	
Test Conducted By	
Date of Monitoring	
Measurement Start Time (hh:mm)	
Measurement Time – Length (min)	
Noise Meter Model/ Calibration Date	
Calibrator Model/ Calibration Date	
Weather Conditions	
General Description	
Wind Speed (m/s)	
Wind Direction	
Temperature (deg C)	
Relative Humidity	
Recent Rainfall	
Cloud Cover (oktas)	
Measurement Results	
$L_{Aeq\ (15min)}$ (dB(A))	
L_{A1} (dB(A))	
L_{A10} (dB(A))	
L_{Aeq} (dB(A))	
L_{A90} (dB(A))	
Major Construction Noise Source(s) During Monitoring	
Other Noise Source(s) During Monitoring	
Comments	

Appendix D – Construction Traffic Management Plan

Construction Traffic Management Plan
124 Lowes Mount Road, Oberon

Prepared for:
Borg Construction
4/06/2021

The Transport Planning Partnership
ACN: 607 079 005

Construction Traffic Management Plan
124 Lowes Mount Road, Oberon

Client: Borg Construction

Version: 2

Date:4/06/2021

TTPP Reference: 16182

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Final	3/05/17	S.Botross, L.Nguyen	W.Johnson	W.Johnson	
Rev 2	4/06/2021		J Blomberg Borg Manufacturing Environmental Manger	V Bendevski Borg Manufacturing Environment & Regulatory Compliance	

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1 Introduction

1.1 Background

State Significant Development Application SSD 7016 was approved by the Minister for Planning on 29th May 2017 for the construction and operation of a particleboard facility and continuation of, and alterations and additions to, the existing medium density fibreboard facility at Borg Panels, 124 Lowes Mount Road, Oberon.

Since then, three modifications to SSD 7016 have been approved by the Minister. Modification 1 approved on 20th November 2018, modification 2 on 29th November 2019 and modification 3 on 22nd May 2020.

The Transport Planning Partnership (TTPP) prepared this Construction Traffic Management Plan (CTMP) on behalf of Borg Construction (Borg) to assess the traffic and transport implications of the development activities as part of the initial approval.

This CTMP was prepared to satisfy the relevant conditions of consent specified bythe Minister for Planning. Table 1 lists the conditions of consent and the corresponding sections of the CTMP where there are addressed.

Table 1: Construction Staging and Duration

Traffic and Access Requirements	Addressed in
Condition B34.	
(c) detail the measures that would be implemented to ensure road safety and network efficiency during earthworks and construction;	Section 5
(d) detail heavy vehicle routes, access and parking arrangements;	Sections 3.3 and 3.4
(e) include a Driver Code of Conduct to: *(i)* minimise the impacts of construction on the local and regional road network; *(ii)* minimise conflicts with other road users; *(iii)* minimise road traffic noise; and *(iv)* ensure truck drivers use specified routes;	Appendix A
(f) include a program to monitor the effectiveness of these measures; and	Section 6
(g) if necessary, detail procedures for notifying residents and the community (including local schools), of any potential disruptions to routes.	Section 4.7
Condition B35.	
The Applicant must provide sufficient parking facilities on-site, including for heavy vehicles and for site personnel, to ensure that traffic associated with the development does not utilise public or residential streets or public parking facilities.	Section 3.3

1.2 Purpose of this CTMP

This CTMP addresses the traffic and transport implications during construction phases of the development. The overall principles of traffic management during construction include:

- manage access to/from adjacent properties
- restrict construction vehicle movements to designated routes to/from the site
- manage and control construction vehicle activity in the vicinity of the site

- provide an appropriate and convenient environment for pedestrians and cyclists
- minimise the impact on pedestrian movements
- maintain appropriate capacity for pedestrians at all times on footpaths adjacent to the site
- maintain appropriate public transport access, and
- carry out construction activity in accordance with the approved work hours.

The report was initially prepared by engineers who hold the RMS Select/ Modify Traffic Control Plans (Red Card) and Design and Inspect Traffic Control Plans (Orange Card)certification which is now named *Prepare a Work Zone Traffic Management Plan.*

Subsequently, this CTMP has been reviewed and updated where necessary by appropriately experienced Borg personnel.

During the preparation of this CTMP, Roads and Maritime Services and Oberon City Council were consulted for any additional aspects which required further assessment. Both authorities returned no additional requirements.

This CTMP includes the following:

- Measures to ensure that the transport related conditions of consent are met,
- Drivers' Code of Conduct (Appendix A), and
- A program for monitoring the effectiveness of the CTMP and Drivers Code of Conduct.

1.3 Overview of Works

is The approved project is for the expansion of the existing Borg Panels timber processing facility at124 Lowes Mount Road, Oberon. The expansion under SSD 7016 approval date 29th May 2017 included the addition of a particle board manufacturing line, including chipping facility, to the existing medium density fibreboard (MDF) manufacturing line. The project also includes for minor additional site works and extension of the area covered by the consent.

The components of the expansion include:

- Construction of a dedicated Particle Board Manufacturing Line
- Additional infrastructure within existing buildings
- Expand Lot 1 and 2 DP 1085563 to accommodate a wood flake preparation area
- Construction of a new automated storage warehouse on Lot 24 1148073 and part on Lot 26 DP 1200697
- Construction of hardstand area on Lot 24 DP 1148073
- Expansion to Lot 1 DP 1076346 for hardstand, water quality ponds and emergency catchment

- Allow for an increase in production by up to 500,000m^3, with a commensurate increase in staff.

The components of the three subsequent modifications are as follows:

- MOD 1 – extension of mouldings warehouse, reorientation of materials handling building, layout changes to particleboard chipper/debarker building, extension of northern noise bund, reconfiguration of elements of the surface water management system, reclamation of the Spring Dam;
- MOD 2 – installation of an electricity generation gas turbine and ancillary equipment; and
- MOD 3 – additional materials handling equipment, extension to northern warehouse, changes to the site surface water system and construction of further hardstand.

See Appendix B for plan showing the site infrastructure.

2 Existing Conditions

2.1 Site Description

The site is located on Lot 1 DP 1085563, Lot 2 DP 1085563, Lot 26 DP 1200697, Lot 24 DP 1148073 and Lot 1 DP 1076346 in the local government area of Oberon Council.

The site location and its surrounds are shown in Figure 1.

Figure 1: Site Location (Aerial)

Basemap source: Google Maps 2017

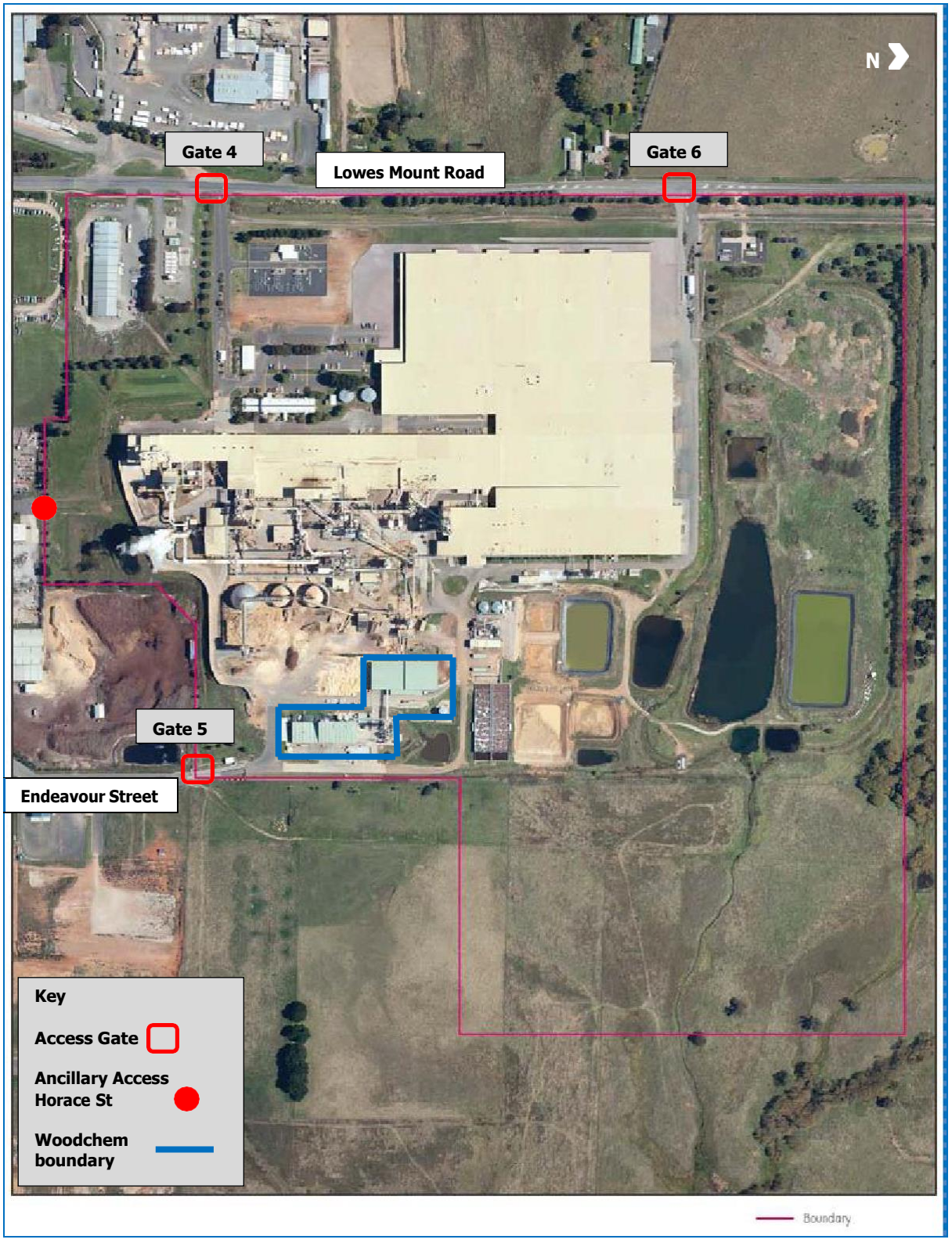
Borg Panels is located on the northern outskirts of Oberon town and along the eastern side of Lowes Mount Road. The primary industries within the vicinity include agriculture (farming and plantation timber growing), as well as industries associated with logging, sawmilling and timber dressing and the manufacture of wood products.

Access to the Borg Panels site are located along Lowes Mount Road and Endeavor Street. Gate 4 is located on Lowes Mount Road and permits access to employees, dispatch, visitors and heavy vehicle deliveries. Gate 6 is located around 400m north of Gate 4 and provides access for heavy vehicle deliveries and employees. Ancillary access is also provided via Horace Street.

Gate 5 is located on Endeavour Street and provides access for delivery trucks carrying raw material (ie. timber logs) and chemical to the Woodchem facility.

The location of the site accesses and the approximate separation of the sites are illustrated in Figure 2.

Figure2: Site Access



Base map source: Google Earth 2020

2.2 Road Network

The site is surrounded by a network of roads including Lowes Mount Road along the site frontage. A description of these roads is provided herein.

Lowes Mount Road

Lowes Mount Road is a two-way two-lane road with a north-south alignment. It has a posted speed limit of 60km/hr at the southern end of the road and 100km/hr north of the site. Informal parking is permitted within the wide grass verge along the eastern side of Lowes Mount Road.

Access to the site is provided off Lowes Mount Road via Gate 4 and Gate 6. It is noted that both Gate 4 and Gate 6 are indented approximately 75m and 150m from the property boundary line on Lowes Mount Road, allowing space for queuing of vehicles on the subject site. A dedicated right-turn lane that is 60m in length is located at the Gate 6 access.

Albion Street

Albion Street is a two-way road with one lane per direction. It has an east-west configuration with wide kerbside parking lanes on both sides of the roadway. The posted speed limit within the township is 60km/hr which increases to 70km/hr closer to the town outskirts.

Horace Street

Horace Street has an undivided carriageway with a north-south alignment. It has a cul-de-sac at its northern end which connects to the southern boundary of the subject site. Unrestricted kerbside parking is permitted on both sides of the roadway. There is no posted speed limit however, by default, the speed zone along Horace Street is 50km/hr.

Endeavour Street

Endeavour Street is aligned in a north-south direction and has an undivided carriageway. There is a cul-de-sac at the northern end of the road where there is an access to the subject site (Gate 5).

Endeavour Street has a posted speed limit of 50km/hr with kerbside parking permitted along both sides of the roadway.

O'Connell Road

O'Connell Road is a divided two-way two-lane road with a north-south alignment. The posted speed limit varies from 60km/hr from the southern end of the road to 100km/hr around 300m north of Albion Street. On-street parking is not formalised along O'Connell Road, however, is permitted within the unsealed road verge.

2.3 Surrounding Intersections

The key intersection surrounding the site is at Lowes Mount Road and Albion Street. This is a four-way roundabout intersection, providing connectivity between Duckmaloi Road (from Sydney) and O'Connell Road (from Bathurst) to the site. The local road network and key intersection are illustrated in Figure 3.

Figure 3: Locality Map

Basemap source: Google Maps 2017

2.4 Public Transport

Public transport facilities are not provided within the area surrounding the subject site.

2.5 Pedestrian and Cycle Infrastructure

A 1.5m-wide shared path is located along the site frontage on Lowes Mount Road. At the access driveways of Gate 4 and Gate 6, shared path signage is installed to inform drivers of the presence of pedestrians and cyclists using the pathway.

In the general vicinity of the site, a footpath and kerb ramps are provided along the eastern site of Lowes Mount Road and North Street. At the key nearby intersection of Lowes Mount Road and Albion Street, pedestrian refuges are provided on all approaches of the roundabout to assist pedestrians with crossing these roads.

3 Overview of Construction Activities

This section of the report outlines the construction methodology and detailsfor the development at 124 Lowes Mount Road.

3.1 Description of Works

The expansion of the Borg Panels timber processing facility includes but is not limited to the addition of a particle board manufacturing line and chipping process to the current MDF manufacturing. The key construction activities include:

- Construction of new first flush and emergency basin to the east of the site
- Demolition of existing infrastructure
- Construction of new site access and hardstand

- Construction of new industrial buildings to the south-west and north-west of the site to accommodate new plant and equipment, as well as provide storage
- Installation of new plant and equipment in existing industrial buildings
- Reconfiguration of elements of the site surface water management system
- Extensions to existing and new build warehouses
- Layout changes to new builds
- Reclamation of the Spring Dam
- Installation of a new electricity generating gas turbine
- Installation of a new high-pressure gas pipe as an ancillary to the turbine and site, within the project area
- Construction of additional equipment to new builds

The new buildings are as follows:

- Debarker and chipping plants to be constructed to the south and east of the existing production building. The chippers are to be contained in concrete and acoustic panels enclosures
- A materials handling building to be constructed to the west of the proposed production hall. The building is enclosed with acoustic panelling to the north, south and west side with an opening on the eastern side to allow for material to be brought in using a front end loader for processing
- A flaker building to be constructed to the west of the proposed production hall. The building is to be fully enclosed with acoustic panelling
- Automated storage warehouse building located at the northern end of the site. The building will be fully enclosed using sheet metal

3.2 Duration and Staging of Works

Construction works commenced in June 2017 under approved SSD 7016 dated 29th May 2017, and essentially followed the stages outlined below:

- Stage 1 – site works, construction of detention basin and hardstand areas. Construction of the detention basin and drainage swale will be undertaken first in order to ensure that the appropriate erosion and sediment control measures can be implemented for later stages
- Stage 2 – construction of particle board manufacturing facility and installation of related plant
- Stage 3 – alterations and addition to existing MDF site and construction of new automated storage warehouse
- Stage 4 – debarker and chipper building and chip preparation area

The activities described in the above four stages have been completed.

The description of works for MOD1, MOD 2 and MOD 3 as provided in section 1.3 Overview of Works of this Plan have commenced with works under MOD 1 essentially complete. MOD 2 works have been completed with commissioning to occur. This is scheduled for May/June 2021. Activities under MOD 3 are progressing.

3.3 Construction Details

3.3.1 Construction Vehicle Types

Vehicles likely to be generated by construction activities at the site are summarised in Table 2.

Table 2: Construction Vehicles

Works	Vehicle	Quantity
Earthworks	Excavator	1
	Loader	1
	Dozer	1
	Dump Truck	2
	Grader	1
	Roller	1
	Articulated truck	2
Installation	Mobile crane	2
	Concrete truck	1
	Delivery truck	2
	Bobcat	1
Rock Breaking	Rock breaker	1

3.3.2 Work hours

Construction activities shall be undertaken between 7:00am – 7:00pm Monday to Friday and 8:00am – 1:00 pm on Saturday. Construction works are not to be undertaken on Sunday and public holidays.

Regular site operation would continue as per normal, that is, across 24 hours per day for seven days.

Works outside of the aforementioned hours may be undertaken in accordance with consent condition B14, which specifies the following circumstances:

- Works that are inaudible at the nearest sensitive receivers;
- Works agreed to in writing by the Secretary
- For the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or
- Where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm.

3.3.3 Works Zone

All activities associated with the construction phase of the project would be carried out wholly within the site premises. Therefore, no construction works or loading/ unloading of construction vehicles would take place outside of the site boundary.

As Borg will be manufacturing a significant amount of the physical infrastructure themselves at the site, the amount of deliveries from other locations will be minimal. It is expected that construction plant would be held offsite until they are required. Onceat the site, plant will be stored onsite until project completion.

Any loading and unloading of construction vehicles will be accommodated on the site hardstand areas at the northern and eastern areas of site.. In special circumstances, the unloading of large construction plant would be undertaken at the location where it is required for use to eliminate double-handling.

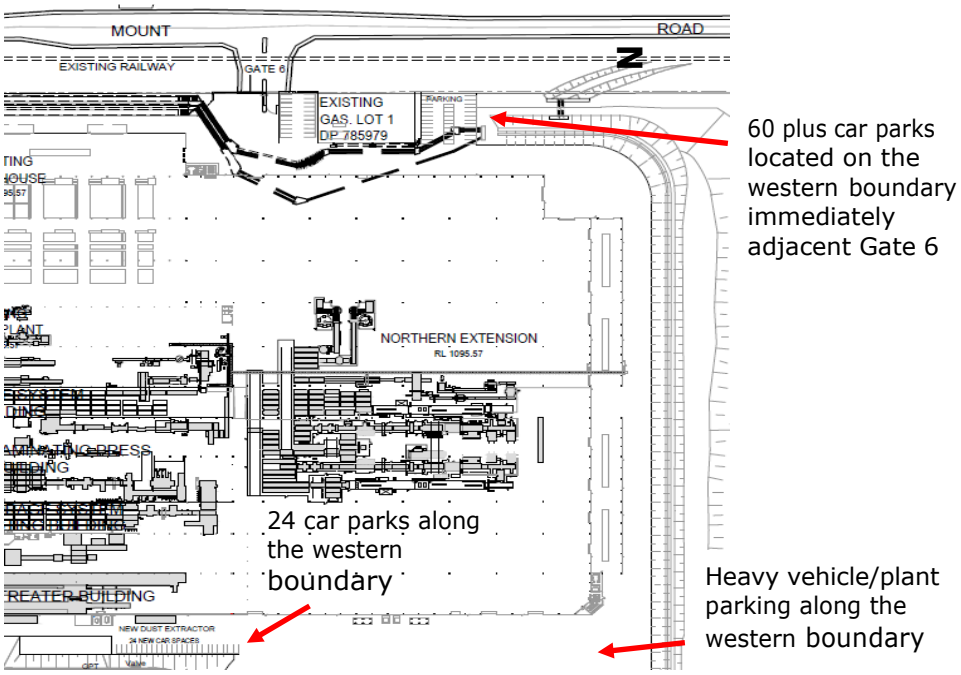
All construction materials and plant are expected to be wholly stored within the works site. It is not expected that any public road would be required for such purposes. As such, there would be no Works zone as part of these works.

However, if temporary use of any public road is required, prior consultation with Council shall be undertaken. All relevant permit approvals would also be acquired prior to the commencement of activities within the roadway.

3.3.4 Construction Staff Parking

Car parking for construction staff is provided on site as shown below in Figure 4. These parking areas are accessible via Gate 6.

Figure 4: Construction Staff Parking



3.4 Site Access and Internal Circulation

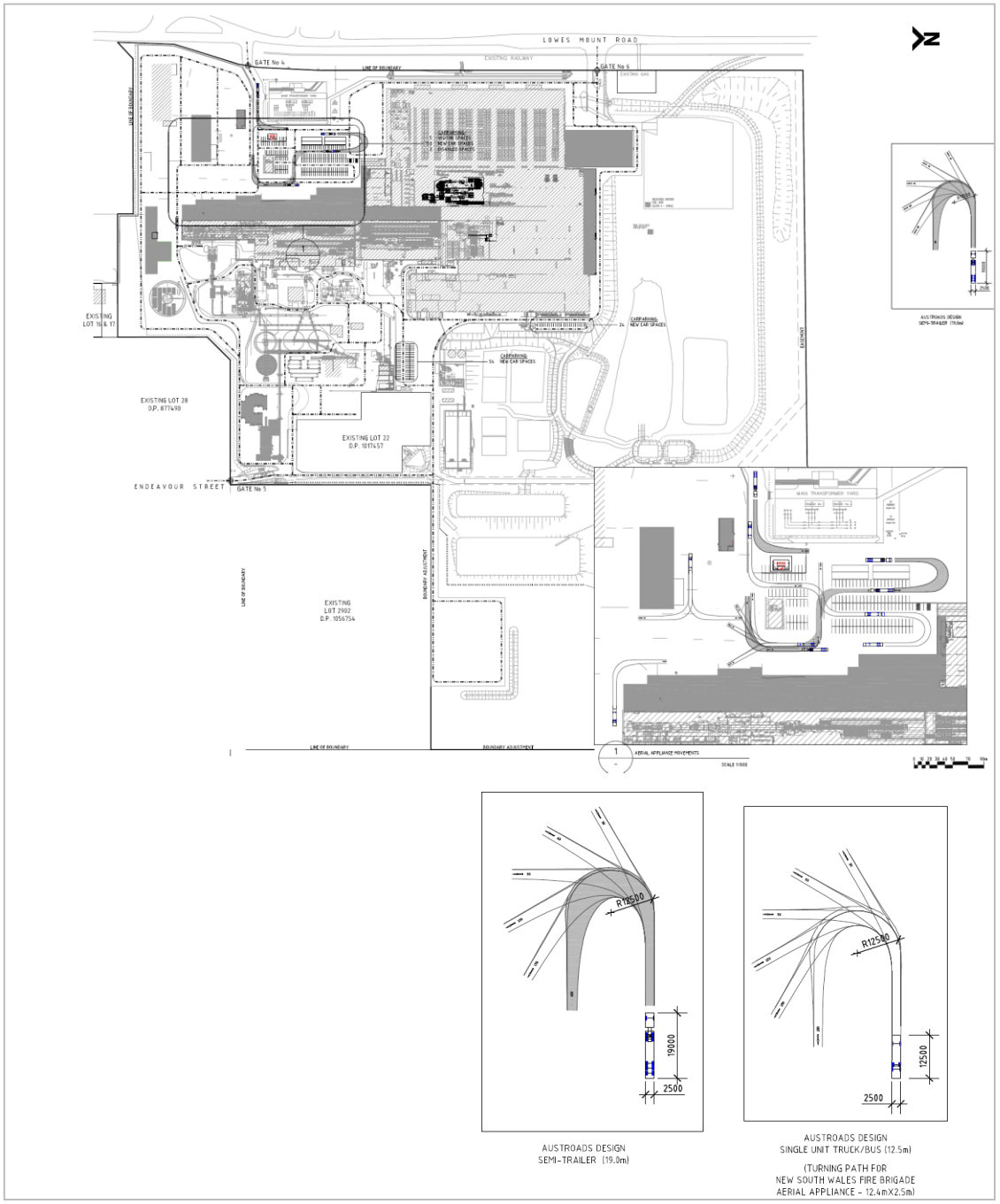
Ingress and egress of construction vehicles will generally be via Gate 6. Access for NSW Rural Fire Service, Fire and Rescue NSW or other emergency vehicles will be via Gate 4. An ancillary access remains at Horace Street for use if necessary.

Construction traffic generation is based on the construction works as described in Section 3, and the number of staff engaged during the construction phase. The delivery of materials that are to be used in the manufacture of the physical infrastructure will be undertaken using 19m semi-trailers and tipper trucks. Traffic due to staffing is expected to comprise only private cars.

The site has an established internal road network with giveway/stop controls which can accommodate two-way vehicle flow across the full site. Of the vehicles associated with the construction phase, a 19m semi-trailer is anticipated to be largest vehicle to circulate throughout the site. The internal circulation route is already established to accommodate the turn paths of a heavy vehicle as large as a 25m B-double truck. The turning radius of 25m B-double is 15.0m and 19m semi-trailer is 12.5m. Therefore, a semi-trailer would be able to adequately circulate throughout the site without any implications. The layout of the internal road network is illustrated in Figure 5.

In relation to the rest of the site, the parking area located east of Gate 4 would be considered to have the greatest limitations for vehicle manoeuvrability. Although, this area can still adequately accommodate one-way flow by Rural Fire Service trucks which are typically heavy rigid vehicles that are 12.5m in length and have a turning radius of 12.5m. The swept path for this type of truck circulating through the parking area is illustrated in Figure5, while a full-scale plan is contained in Appendix C.

Figure 5: Internal Road Network



3.5 Construction Vehicle Haul Routes

Generally, construction vehicles would have origins and destinations in Bathurst and Sydney. Current designated heavy vehicle haul routes to the site would be utilised by construction vehicles travelling from Bathurst and Sydney. These routes include O'Connell Road-Albion Street (from Bathurst) and Duckmaloi Road-Albion Street (from Sydney). Beyond the context of Oberon, the route to/from Sydney includes travelling on Jenolan Caves Road and The Great Western Highway.

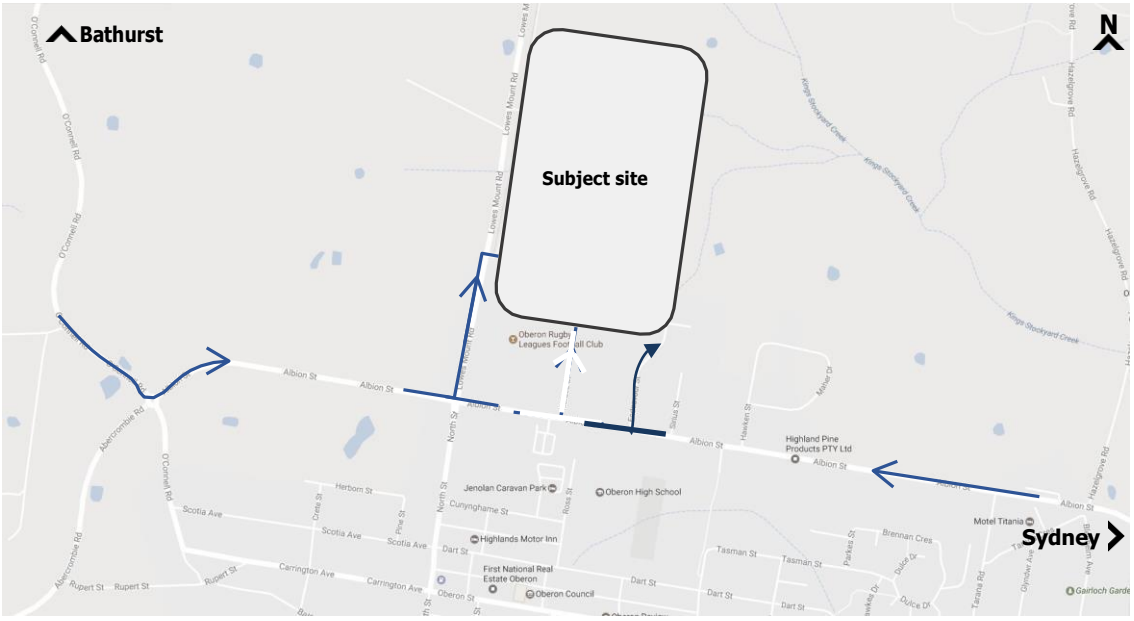
All heavy vehicle drivers will be advised of the designated truck routes to/from the site and would be required to adhere to the nominated routes.

The designated truck routes to/from the construction site are as follows:

- Approach routes:
  - From Bathurst – from the north-west, travel on O'Connell Road, turn left onto Albion Street before turning left onto Lowes Mount Road or Endeavour Street.
  - From Sydney – from the east, travel on Duckmaloi Road, turn right onto Albion Street before turning right onto Endeavour Street or Lowes Mount Road.
- Departure routes:
  - To Bathurst – head south on Lowes Mount Road or Endeavour Street, turn rightonto Albion Street before turning right onto O'Connell Road.
  - To Sydney – head south on Lowes Mount Road or Endeavour Street, turn leftonto Albion Street before turning left onto Duckmaloi Road.

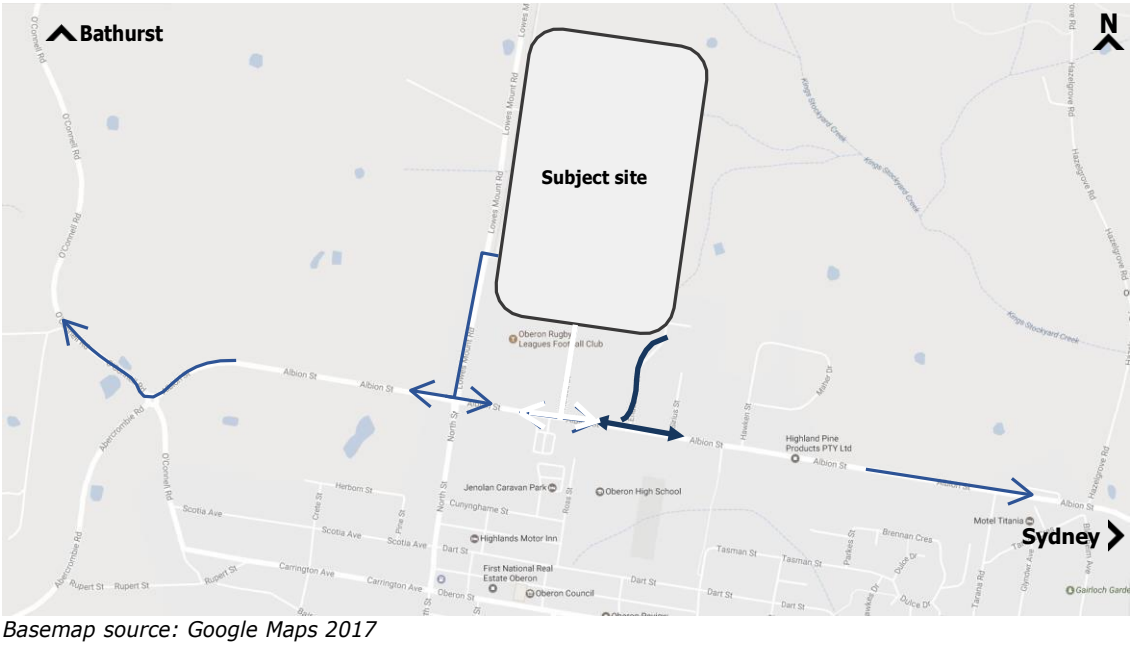
The routes described above are presented in Figure 6 and Figure 7.

Figure 6: Haul Routes to the Site



Basemap source: Google Maps 2017

Figure 7: Haul Routes from the Site



Basemap source: Google Maps 2017

During the planning process, the Contractor will schedule all deliveries ahead of time. Therefore, the Contractor will be aware of the approximate arrival times of construction vehicles and would be able to accommodate them onsite upon arrival.

This operation would eliminate the potential for queuing or marshalling/ parking on public streets. As a precaution, construction vehicles are to radio or call ahead to ensure access to the construction site is available.

4 Construction Traffic Assessment

4.1 Construction Traffic Generation

Traffic generation associated with the transportation of plant was undertaken during the establishment of the site and generally limited to off-peak periods. Once plant has been delivered to the site, it will remain onsite until the completion of the construction works.

Construction traffic generation is based on the construction works as described in Section 3, and the number of staff engaged during the construction phase. The delivery of materials that are to be used in the manufacture of the physical infrastructure will be undertaken using semi-trailers and tipper trucks. Traffic due to staffing is expected to comprise only private cars.

Construction traffic generation in the peak construction period is summarised in Table 3.

Table 3: Construction Phase Traffic Generation

Type of Vehicle	Hourly Two-way Movements	Daily Two-way Movements	Number of Staff
Light vehicles	Before shift start (6:00am - 7:00am): 100 inbound trips	240 trips	Maximum 100 per day
	After shift end (7:00pm – 8:00pm): 100 outbound trips		
Heavy vehicles	Up to 10 trips	Up to 60 trips	-

As indicated in Table 3, the maximum daily number of construction staff is 100. Staff will be engaged on a 12-hour shift between 7:00am-7:00pm. Therefore, it is expected that a maximum of 100 cars would be driving into the car park between 6:00am-7:00 am before the start of the shift and driving out between 7:00pm-8:00pm following completion of the shift. This equates to an average of two vehicles accessing or departing the site per minute during the stated hours.

Gate 4 and Gate 6 are indented from the property boundary line approximately 150m and 75m, respectively, from the roadway on Lowes Mount Road. Driveways leading to the gatehouses at the Gates could accommodate around 20 cars (Gate 4) and 10 cars (Gate 6). Furthermore, the right turn lane into Gate 6 on Lowes Mount Road is 60m in length and can store up to eight cars at any time. Thus, traffic generated due to the arrival of construction staff can be adequately accommodated onsite without causing impact on the function of Lowes Mount Road.

During peak construction operation, there are up to 60 two-way heavy vehicle trips expected on a daily basis. In any peak hour, it is anticipated that there will be no more than 10 two-way trips made by heavy vehicles (i.e. five heavy vehicles).

4.2 Cumulative Traffic Generation

Separately, it is noted that normal operation of the Borg and Woodchem sites would continue during the construction phase. Borg and Woodchem staff vehicle access is provided at Gate 4 and Gate 5, separated from construction staff access at Gate 6.

Traffic generation due to construction works, as summarised in Table 3, will occur outside of the AM and PM local road network peak periods, namely, 7:30am – 9:00am and 3:30pm – 5:00pm. Therefore, traffic generated due to the construction phase would not have a significant impact on the existing road network during these times.

The start and end of construction work times also occur outside of shift change-overs for employees at the Borg and Woodchem sites. The shift times for employees at the latter sites are as follows:

- Morning shift, 6:30am to 2:30pm
- Day shift, 2:30pm to 10:30pm
- Night shift, 10:30pm to 6:30am
- Full day shift, 6:00am to 6:00pm.

Hours of work for construction staff and regular Borg employees along with the surrounding road network peak periods are illustrated in Figure 8.

Figure 8: Construction and Operational Staff Working Hours

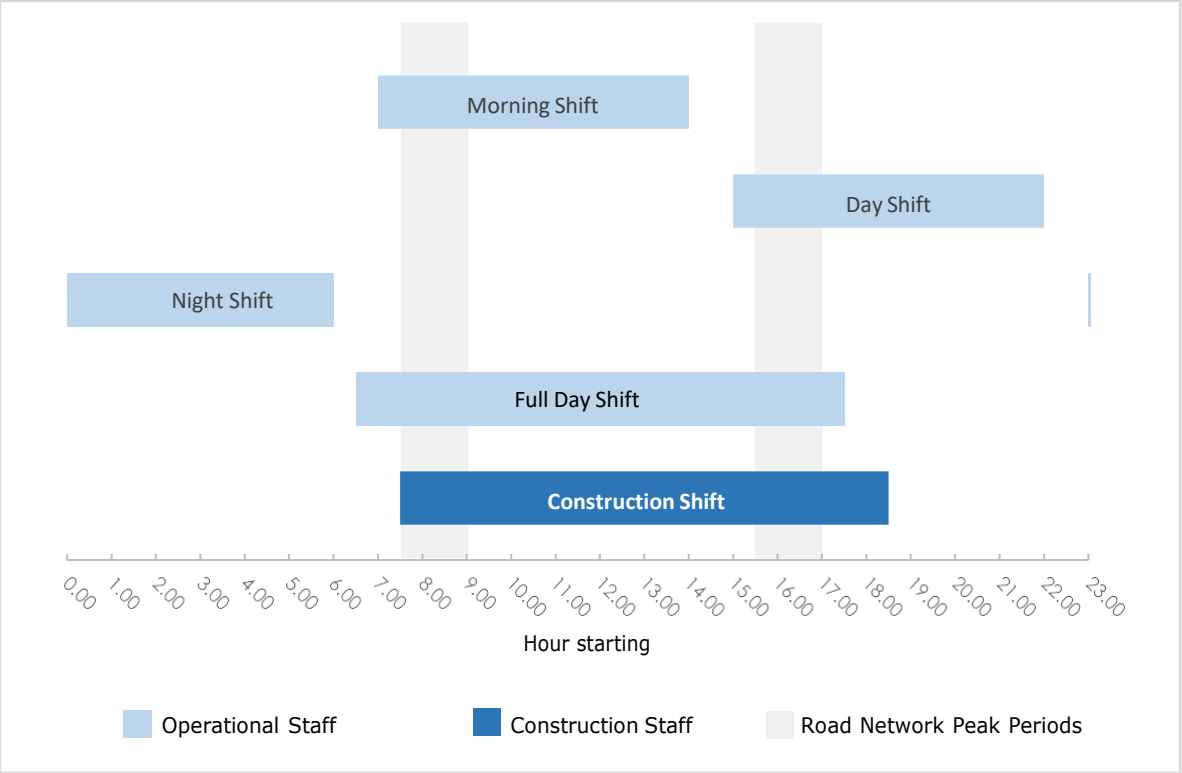


Figure 8 demonstrates that the start and end times of the construction shift fall outside of those times for regular Borg staff. The construction shift also falls outside of the local road network peak periods. Overall, the peak vehicle movements associated with construction traffic are separate to all other busy periods at the site. Therefore, the cumulative impact is considered to be low and is not expected to result in any adverse impact on the surrounding road network.

4.3 Pedestrian and Cycle Access

Pedestrian and cycle access at all site entrances will not be impacted by the construction works, and hence, would remain as existing.

4.4 Security Equipment

The existing site will be fully enclosed by large security gates around the site perimeter. During the early works, security instruments will be installed at the accessways on Horace Street and Lowes Mount Road to ensure site safety and security.

4.5 Public Transport

The proposed construction activities are unlikely to impact on the public transport in the vicinity.

4.6 Emergency Vehicles and Oversize Vehicles

No special provisions for emergency services vehicles are required as part of any of theconstruction works.

Oversize flat racks would be used during the construction phase. Over the duration of the construction phase, it is estimated that 82 oversize flat racks and 450 40-foot containers would be transported to the site.

Borg are to obtain special permits for oversize flat racks and other oversize transport as from the relevant authorities when required.

4.7 Community Information

Traffic movements and construction activities associated with the construction phase of the project are not expected to cause disruptions to the surrounding road network and public transport network. From a traffic and transport perspective, the impact on the local community during construction is anticipated to be negligible.

Where minor and temporary changes to the road network would be applied such as trucks turning left or right on Lowes Mount Road and Horace Street, acceptable measures have been implemented to ensure the safety of road users. This has been detailed in Section 5 of this CTMP.

Community information will be provided by the Borg Website, Community notice boards and signposting at the site entry points. Over the duration of the project, information pertaining to the site expansion would remain available to the public via Department of Planning, Industry and Environment's Major Projects website.

Based on the above, the proposed measures for informing the community of impacts due to the works are considered sufficient, and hence, no other measures are deemed to be required.

5 Construction Traffic Management Measures

Two site specific traffic control plans (TCP) were prepared and implemented during the initial construction works associated with SSD 7016 approval date 29th May 2017. Since then, site access Gates 4 and 6 have become fully operational and the activities under the initial approval are complete, making these TCPs obsolete.

If it is identified that advisory road signage is necessary, it shall be installed in accordance with AS1742.3 Manual of uniform traffic control devices – Traffic control devices for works on roads and the RMS Traffic Control at Worksites Manual. Signs shall be installed and maintained thought the construction period.

5.1 Vehicle Access

All vehicles are to enter and exit the construction site in a forward direction. Vehicles must not be permitted to reverse into the site from the road unless prior approval is obtained. It is noted that vehicles will not be required to reverse into the site as there is sufficient space onsite for vehicles to circulate internally and exit in a forward direction.

Construction vehicles shall radio/ call the site office on approach to the site to ensure access to the site is available. All loading and unloading shall be undertaken onsite during the approved work hours. As noted previously, queuing or marshalling of construction vehicles shall not be permitted on public roads.

During the transportation of materials to/from the site, if there are any materials spilt onto the roadway, site personnel and equipment shall rectify the issue accordingly, subject to appropriate OH&S provision.

All truck drivers are required to read and sign the Drivers Code of Conduct, which informs drivers of the acceptable behaviour when operating a heavy vehicle. The Code provides instructions to truck drivers on where access to the site is permitted as well as the approved haul routes to the site.

The Drivers Code of Conduct is contained in Appendix A of this CTMP.

5.2 Truck Routes

Protocols must be in place to ensure:

- Site induction shall include procedures for accessing the site;
- Drivers shall adhere to the nominated truck routes, as shown in Figure 6 and Figure 7;
- Drivers shall be aware of pedestrians and cyclists in the vicinity of the site; and
- Driver shall be aware that posted speed limit on Albion Street, O'Connell Road, and Lowes Mount Road is 60km/hr while the appropriate speed limit on Horace Street is 50km/hr.

5.3 Site Inspections and Record Keeping

The construction operation shall be monitored to ensure that it proceeds as set out in the Contractor's Construction Management Plan. A daily inspection before the start of construction activity shall take place to ensure that conditions accord with those stipulated in the plan and that there are no potential hazards.

To assist the orderly resolution of issues and complaint the Construction Site Manager will keep a register itemising all report incidents and adverse traffic matters. The incident register is to include details such as date and time, location, driver and vehicle details contact details of the persons involved and a recount of the incident.

Incidents and complaints are to be managed in accordance with the procedures documented in the Construction Environmental Management Plan (CEMP).

5.4 Site Induction

All staff employed on the site by the Contractor shall be required to undergo a site induction.

The induction shall include permitted access routes to and from the construction site for site staff and delivery vehicles, as well as standard environmental, OH&S, driver protocols and emergency procedures.

Construction staff are to be informed of the appropriate access gate of which they are expected to arrive to carry out their induction.

Table 4 summarises a comprehensive list of the measures and controls currently enforced at the site by the Contractor.

Table 4: Borg Control Documents

Form/ Document	Description
Site Induction	▪ The form ensures that visitors or staff on the site are inducted about the site features, PPE requirements and procedures for reporting and emergency. ▪ The form is to be signed by both site inductor and inductee.
Site WHS Management Plan	This document lists: ▪ Responsibilities of all people working on site ▪ Training and induction procedure ▪ Risk management procedure ▪ Plant and equipment requirements and controls ▪ Electrical, hazardous chemical reporting and control measure ▪ Fitness for work requirements ▪ Managing hazards ▪ Site safety rules ▪ Legislation and references ▪ Existing form and documents This document is to be signed by subcontractors and Person with WHS responsibilities
Driver Behaviour	▪ This document clarifies duty of cares and responsibilities of all workers who drive a company vehicle ▪ The document is to be signed by the drivers
Log Haulage Induction Manual	The document lists and assess if the driver understand and acknowledge the following: ▪ Drivers' duties of care ▪ Site entry requirements ▪ PPE safety requirements ▪ Traffic regulation on site, incident report, emergency procedures, ▪ Responsibilities and consequence of breaching procedure Borg Assessor will pass or fail the driver according to his understanding of the above points. The manual is to be signed by both driver and Borg assessor

6 Monitoring Program

The following monitoring program shall be implemented to ensure that the CTMP and Drivers Code of Conduct performs effectively and achieves the objectives set out in this CTMP.

6.1 Implementation of CTMP and Drivers Code of Conduct

The CTMP and Drivers Code of Conduct shall be included with all new site inductions for heavy vehicle drivers regularly accessing the site. One-off truck delivery drivers must agree to abide by the Drivers Code of Conduct by having read and signed the Code.

Prior to commencement of construction works, all drivers shall be provided with a copy of Drivers Code of Conduct. It is intended that all truck drivers will have signed the Drivers Code of Conduct declaration and agreed to be bound by its behavioural requirements before entering the site.

A copy of the Code has been included in Appendix A of this report.

6.2 Complaints/ Compliments Register

A complaints and compliments register detailing matters such as truck driver behaviours and truck related noise issues shall be developed and maintained by Borg.

The register shall be reviewed every three months to determine if any systematic issues are arising from the implementation of the CTMP and Drivers Code of Conduct.

Positive and negative feedback shall be documented using a Customer, Community and Stakeholder Complaint/ Compliment Form. Borg shall gather as much information as possible which will allow them to take appropriate action. Appropriate action may include:

- Arranging a meeting to discuss and/ or resolve issues
- Calling the customer, member of community or stakeholder to acknowledge feedback
- Writing a letter responding to the feedback.

Drivers shall also be provided the opportunity to give feedback on the implementation of the Drivers Code of Conduct and other measures which could be considered for implementation into the Code.

6.3 Hazards and Incidents Register

A procedure for detailing hazards and incidents relating to safety, environment and process during the construction phase has been established by Borg in the HSEQ Management System. The system and associated documents have been prepared

as a requirement under the WHS Regulations 2011.

The HSEQ Management System details the responsibilities specific to all stakeholders involved in the construction phase, including:

- Borg Construction, as the principal contractor
- Borg Officers
- Construction Manager
- Site Supervisor
- Workers, contractors and visitors
- WHS Coordinator
- Group HR and WHS Manager.

6.3.1 Hazard Reporting

Hazards are to be either addressed by the worker who first observes it, or if that is not reasonably practicable and safe, then it must be reported to the Construction Manager or Supervisor to address. This shall apply to all workers including contractors.

6.3.2 Injury Reporting

All injuries are to be reported in the 'Register of Injury' book which shall be kept on site in the site office or where the primary first aid kit is kept. A copy of the page shall be forwarded to the WHS Team within 24 hours of the injury and where required it shall be accompanied by a completed Incident Report Form. Any injury requiring medical treatment must be reported to the Borg Return to Work Coordinator immediately.

If the injury is of a serious nature and is deemed a 'Notifiable Incident' under the criteria of the State or Territory Regulator then the Construction Manager or other person in control shall contact the Borg Group HR and WHS Manager who will in turn contact the relevant authority. For clarification of what injury is deemed as Notifiable refer to the WHSMS Procedure Incident Management and Investigation available on SharePoint.

6.3.3 Near Miss/ Damage and Environmental Incident Reporting

As soon as is reasonably practicable an Incident Report Form shall be submitted to the WHS Team for any near miss, damage or environmental incident. In circumstances where the incident involves the potential escape of substances from the site this must be conveyed to Borg Officers as soon as possible should authorities need to be notified.

Where the incident is deemed a 'Dangerous Incident' such as; an electric shock, a collapsed trench, excavation or structure, the fall or release of an object from height, or collapse or overturn of plant, the Group HR and WHS Manager shall be informed as soon as possible in order for them to contact the Regulator.

7 Conclusion

This CTMP has been prepared to document the construction activities and associated construction traffic management measures necessary to facilitate the expansion of the existing timber panel manufacturing facility at 124 Lowes Mount Road, Oberon.

Based on the findings contained in this CTMP, it is concluded that:

- The construction of the proposed development is expected to generate, in the busiest hour, 100 vehicle trips by staff either entering or departing the site. The busiest periods for vehicles entering and exiting the site are anticipated to be between 6:00am – 7:00am (before commencement of shift) and 7:00pm – 8:00pm (following completion of shift), respectively.
- On average, the arrival rate for construction staff at the site would be around two vehicles per minute. This is not expected to cause any noticeable impacts on the adjacent roadway (Lowes Mount Road) as any queued vehicles would be accommodated within the site's driveways at Gate 4 and Gate 6.
- In the busiest hours, there would be up to 10 two-way heavy vehicle trips to the site which would be accommodated onsite upon arrival.
- The start and end times of the construction shift occur outside of those times for regular Borg staff and the local road network peak periods. Therefore, the cumulative impact is considered to be low and is not expected to cause any adverse impacts on the surrounding road network and regular site operation.
- Special permits for oversize vehicles are to be obtained from relevant authorities when required.
- No pedestrian or cyclist facilities would be impacted as a result of the construction activities
- It is proposed for all loading and unloading of trucks to occur onsite, and without any interruption on surrounding streets
- To ensure safety of motorists, pedestrian and cyclists around the site, driver protocols shall be enforced and monitored during the construction phase as outlined within this CTMP and the Drivers Code of Conduct.
- Truck drivers are to be instructed to use the designated truck routes to/from the site.

Appendix A

Drivers Code of Conduct

Borg Construction Drivers Code of Conduct

This document sets out the requirements for all employees and contractors to Borg Construction.

DECLARATION

I, the undersigned, hereby agree to abide by Borg Construction's Driver Code of Conduct for the transportation of construction materials to/ from the site in Oberon in a safe manner.

I have read and understand the requirements outlined in the Code and will, to the best of my ability, comply and assist with their implementation, requirements and ongoing administration.

Truck Driver

Full Name: _____

Organisation: _____

Signature: _____

Date: _____

General Requirements

The Drivers Code of Conduct would be distributed to all sub-contractors with fleet accessing the site prior to the commencement of works. The Code would be provided to each driver to read and sign to confirm they have understood and pledge to follow the haulage instructions. Once completed, a copy of the signed Code would be supplied by the sub-contractor to Borg for record keeping.

Heavy vehicle drivers hauling to and from the subject site must:

- Have read and signed the Drivers Code of Conduct (this document) prior to entry to the site;
- Hold a valid driver's license for the class of vehicle that it being operated;
- Operate the vehicle in a safe manner while on site and public road network;
- Comply with the direction of authorised site personnel when onsite;
- All drivers are to use seat belts when driving; and
- All drivers are to drive to the sign posted speed limit, both on public roads and within the site.

Site Access

All access to the construction site is to be via Gate 6 or Gate 4 on Lowes Mount Road, Gate 5 off Endeavour Street or, if pre-approved, the ancillary access off Horace Street.

Heavy Vehicle Haul Routes

All heavy vehicle drivers must adhere to the designated truck routes to/from the site as follows:

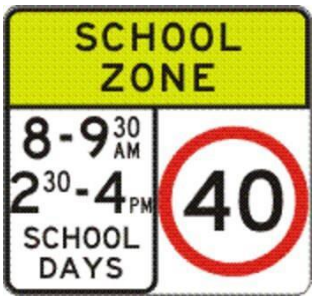
- Approach routes:
    - From Bathurst – from the north-west, travel on O'Connell Road, turn left onto Albion Street before turning left onto Lowes Mount Road or Endeavour Street.
    - From Sydney – from the east, travel on Duckmaloi Road, turn right onto Albion Street before turning right onto Endeavour Street or Lowes Mount Road.
- Departure routes:
    - To Bathurst – head south on Lowes Mount Road or Endeavour Street, turn right ontoAlbion Street before turning right onto O'Connell Road.
    - To Sydney – head south on Lowes Mount Road or Endeavour Street, turn left ontoAlbion Street before turning left onto Duckmaloi Road.

Heavy Vehicle Speed

Truck drivers must comply with the Australian Road Rules with travelling along public roads. Drivers are to observe the posted speed limits and adjust speed appropriately to suit the road and weather conditions at the time.

Speed limits on route to the site from Bathurst and Sydney vary between 40km/hr (school zones) up to 100km/hr. The maximum speed that a vehicle must travel is the signposted speed. Warning signs indicating a reduction in speed ahead must also be obeyed. These signs are shown below.

NSW Road Speed Limit Signs



Speed Reduction Ahead Warning Sign

The speed limit within the site is 15km/hr (unless sign posted otherwise in an area) which is to be strictly maintained.

Heavy Vehicles Driver Fatigue

The heavy vehicle driver fatigues law commenced in NSW in 2008 and applies to trucks and truck combinations over 12 tonnes GVM (however, Ministerial Exemption Notices may apply).

Under the law, industry has the choice of operating under three fatigue management schemes, namely:

1. Standard Hours of Operation
2. Basic Fatigue Management (BFM)
3. Advanced Fatigue management (AFM).

All heavy vehicle drivers associated with the construction works at the subject site must be aware of their adopted fatigue management scheme and operate within its requirements.

Heavy Vehicle Compression Braking

Compression braking is not permitted within the vicinity of the Oberon township, that includes, internal to and surrounding the subject site. Compression braking through rural areas of the haul route should only be used when required and for safety reasons.

Heavy Vehicle Noise

Permitted times of construction works at the site are as follows:

- Monday to Friday - 7:00am – 7:00pm
- Saturday - 8:00am – 1:00 pm.
- Sunday and public holidays – no construction works permitted.

Load Covering

All loaded trucks arriving at and departing from the construction site are required to have an effective cover over their load for the duration of the journey. The load cover may be removed only upon arrival at the destination (i.e. at the site).

Care must be taken to ensure that all loose debris from vehicles and wheels is removed prior to exiting the site.

Site management is to monitor loose material on the side of the haul route and take appropriate action regularly.

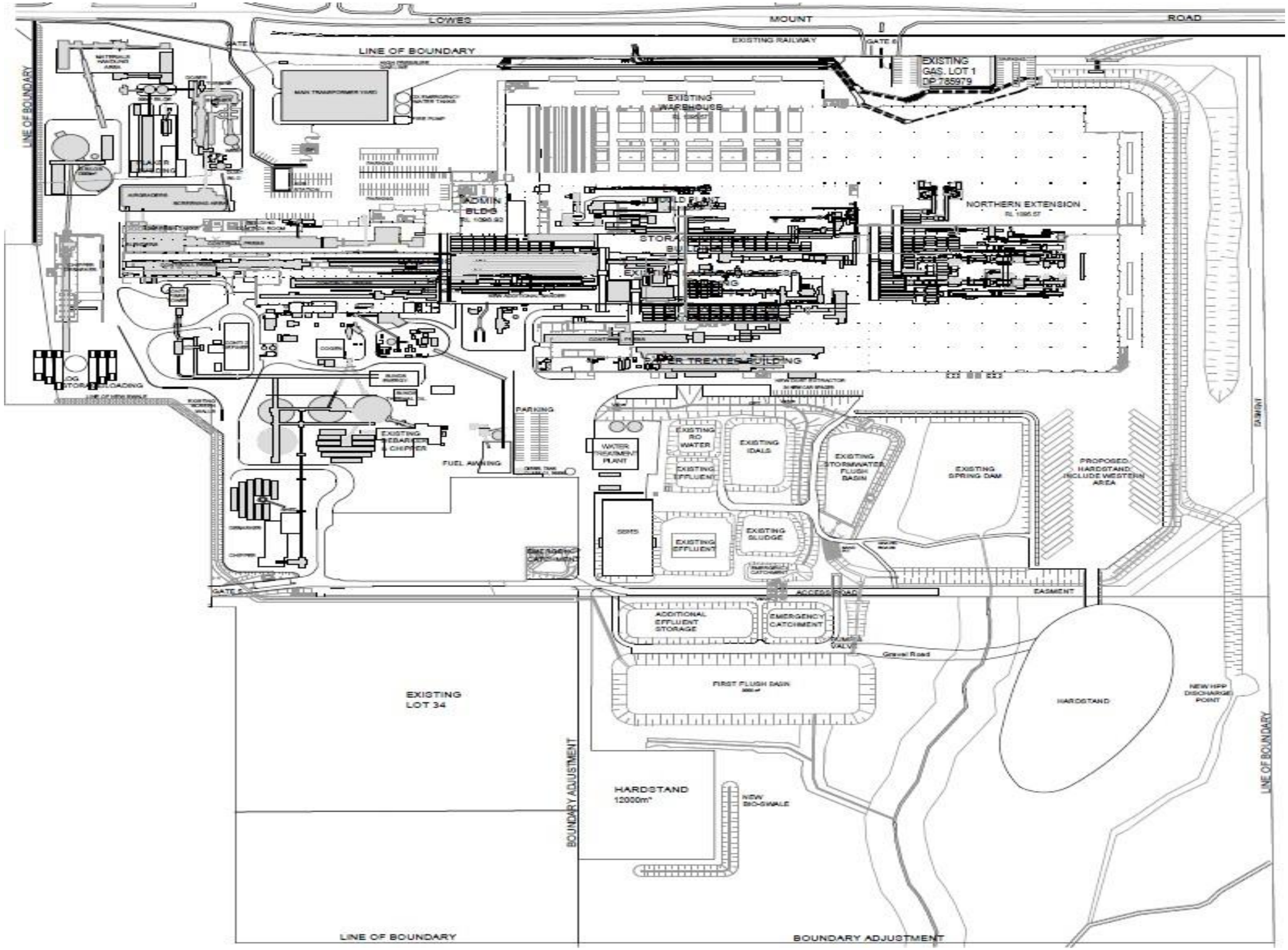
Other Safety Considerations Along the Haul Route

Heavy vehicle drivers should be aware of the following:

- Concealed driveways – drivers are to drive with caution around any signed concealed driveways
- Wet weather safety – drivers should adjust their driving speed to suit weather condition at the time.
- Wild life on country roads – drivers should stay alert to kangaroos, wombats and stray stock on haul routes from Bathurst and Sydney.

Appendix B

Site Infrastructure


LOWES
MOUNT
ROAD
LINE OF BOUNDARY
EXISTING RAILWAY
GATE 6
EXISTING GAS. LOT 1 DP 785979
EXISTING WAREHOUSE
ADMIN BLDG
NORTHERN EXTENSION
STORAGE BLDG
WATER TREATED BUILDING
LOG STORAGE/LOADING
PARKING
EXISTING DEBARKER & CHIPPER
FUEL AWNING
WATER TREATMENT PLANT
EXISTING RO WATER
EXISTING EFFLUENT
EXISTING IDALS
EXISTING STORMWATER FLUSH BASIN
EXISTING SPRING DAM
PROPOSED HARDSTAND INCLUDE WESTERN AREA
SBRS
EXISTING EFFLUENT
EXISTING SLUDGE
ACCESS ROAD
EASEMENT
ADDITIONAL EFFLUENT STORAGE
EMERGENCY CATCHMENT
Gravel Road
FIRST FLUSH BASIN
HARDSTAND
NEW HPP DISCHARGE POINT
EXISTING LOT 34
BOUNDARY ADJUSTMENT
HARDSTAND 12000m²
NEW BIO-SWALE
LINE OF BOUNDARY
BOUNDARY ADJUSTMENT

Appendix C

Internal Road Network Site Plan

LOWES MOUNT RO AD

GATE No 4

GATE No 6

LINE OF BOUNDARY

EXISTING GAS

CARPARKING
5 VISITOR SPACES
151 NEW CAR SPACES
3 DISABLED SPACES

EXISTING LOT 16 & 17

CARPARKING
24 NEW CAR SPACES

CARPARKING
54 NEW CAR SPACES

EASEMENT

EXISTING LOT 28
D.P. 877490

E XISTING LOT 22

D.P. 1017457

ENDE A V O U R S T R E E T GATE No 5

E XIS TING

LOT 2902
D.P. 1056754

LINE OF BOUNDARY

BOUNDARY ADJUSTMENT

MAIN TRANSFORMER YARD

1 AERIAL APPLIANCE MOVEMENTS
SCALE 1:1000

NOTE

LOT BOUNDARIES FOR CONSOLIDATION ARE NOT SHOWN ON THIS PLAN (FOR CLARITY) - REFER DRAWING DA-04FOR DETAIL

LEGEND

D

EXISTING BUILDINGS

PROPOSED NEW BUILDINGS

ROAD NETWORK

CARP ARKING SUMMARY
5 VISITOR SPACES
231 NEW CAR SPACES
3 ACCESSIBLE SPACES

F

AUSTROADS DESIGN
SEMI- TRAILER !19.0m)

l

AUSTROADS DESIGN
SINGLE UNIT TRUCK/BUS (12.5ml
(TURNING PATH FOR

NEW SOUTH WALES FIRE BRIGADE
AERIAL APPLIANCE - 12.4mX2.Sm)

A CONSTRUCTION CERTIFICATE 28/04/17 AM

eeRG

CONSTRUCTION

OFFICE:
2WELLA WAY SOMERSBY, N.S.W. 2250AUSTRALIA
Tej: 0243405800 Fax: 0243408293

Project
PROPOSED PARTICLE BOARD MANUFACTURING PLANT & ADDITIONAL WORKS

Location
124 LOWES MOUNT ROAD, OBERON
NEW SOUTH WALES

Drawing
INTERNAL ROAD NETWORK AND PARKING FACILITIES

Scale	Stage
1:1750 (@A I)	CC

Project Number	Drawing Number	Issue
19	CC 08	A

The Transport Planning Partnership
Suite 402 Level 4, 22 Atchison Street
St Leonards NSW 2065

P.O. Box 368
Summer Hill NSW 2130

02 8437 7800

info@ttpp.net.au

www.ttpp.net.au

Appendix E – Unexpected Contaminated Land Finds Protocol

Unexpected Finds Protocol – Contaminated Land

Discovery of potentially contaminated soil / material. STOP WORK IMMEDIATELY in affected area.
Immediately contact Project Manager for assistance. Project Manager to liaise with Environment Officer and Safety Officer.
Undertake a contamination assessment by a suitably qualified and experienced contaminated land expert. The report is to determine whether the land is suitable (for the intended land use) or can be made suitable through remediation.
Where the investigations identify that the site is suitable for the intended operations and that there is no need for a specific remediation strategy, measures to identify, handle and manage potential contaminated soils, materials and groundwater shall be identified and incorporated into the Construction Environmental Management Plan.
Where the investigations identify that the site is suitable for the intended operations and that a remediation strategy is required, the contamination assessment shall include a remediation strategy for addressing the site contamination, and how the environmental and human health risks will be managed during the disturbance, remediation and/or removal of contaminated soil or groundwater, and be incorporated into the Construction Environmental Management Plan.
Where remediation is required, a Site Validation Report shall be prepared verifying that the site has been remediated to a standard consistent with the intended land use.

Appendix F – Mobile Wood Chipper Operation Management Plan

EMS0029

Mobile Wood Chipper Operation Management Plan

Borg Panels

124 Lowes Mount Road, Oberon NSW

Borg Construction Pty Ltd

8 July 2020

This document should be read in conjunction with EMS0060 Construction Environment Management Plan, EMS0001 Operational Environmental Management Plan, EMS0061 Construction Noise Management Plan and EMS0005 Operational Noise Management Plan

Revision History

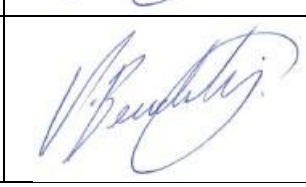
Rev No.	Revision Date	Author / Position	Details	Authorised	
				Name / Position	Signature
0	28/03/17	Carly McCormack Planning and Environmental Officer	Draft for Site Consultation	Victor Bendevski Environmental and Regulatory Compliance	
1	27/04/17	Carly McCormack Planning and Environmental Officer	Final Draft	Victor Bendevski Environmental and Regulatory Compliance	
2	01/06/17	Carly McCormack Planning and Environmental Officer	Final	Victor Bendevski Environmental and Regulatory Compliance	
3	02/11/18	Jacqui Blomberg Environmental Manager	Review as per SSD7016 C10	Victor Bendevski Environmental and Regulatory Compliance	
4	8/07/2020	J Blomberg Environmental Manager	Review as per SSD7016 C10 No changes	V Bendevski Environmental and Regulatory Compliance	

Table of Contents

1 Introduction

The purpose of this Mobile Wood Chipper Operation Management Plan is to minimise noise impacts on nearby noise sensitive receivers resulting from operation of Mobile Wood Chippers at Borg Panels Oberon.

Mobile chipping plant are the highest noise emitters on site by a significant margin. Operation of mobile chippers does not form part of 'normal' operations. They are typically only used during breakdown of electric plant.

The Noise Impact Assessment (Global Acoustics, May 2016) predicted minor to moderate exceedances for noise sensitive receivers south of site for the day period when mobile chipping plant is operational during prevailing (enhancing) meteorological conditions.

This Mobile Wood Chipper Operation Management Plan documents mitigation and management measures to assist Borg in meeting noise limits. Exceedances can be avoided through monitoring weather and restricting use of mobile chipping plant during periods of meteorological enhancement.

Routine noise compliance monitoring is undertaken to measure compliance with noise limits.

2 Compliance Requirements

2.1 Development Consent

The Development Consent SSD 7016 conditions relevant to mobile chipper operation that have been considered in this Plan are detailed in **Table 1**.

Table 1 – Development Consent Conditions

No.	Requirement	Document Reference
	Mobile Wood Chippers	
B22	During construction, the Applicant must ensure that mobile wood chippers are not operating simultaneously with rock/concrete breaking activities.	Section 4.4
B23	The use of mobile wood chippers on site is restricted to the day time period only and to periods of breakdown or maintenance of the permanent wood debarkers and electric chippers, and must not operate under the following conditions: a) in the open when winds are from the north-west through to the north-east (315°, through 0°, to 45°); and b) when winds are from the west through to the east (270°, through 0°, to 90°), two or more mobile wood chippers are not to operate simultaneously.	Section 4.2 Section 4.3 Section 4.1 Section 4.1
B24	Within 6 months of the date of this consent or the commencement of construction of the Project, whichever occurs first, the Applicant must prepare a Mobile Wood Chipper Operation Management Plan for the Development. The plan must outline how the requirements under Conditions B22 and B23 will be achieved and must include any reasonable and feasible mitigation measures to limit operation to periods of breakdown or maintenance of the permanent debarkers and electric chippers.	This Plan Section 4.3

Development Consent SSD 7016 also stipulates noise limits, which are not to be exceeded, for noise generated by the Development as shown in Table 2.

Table 2 Noise Limits dB(A)

Location	Day LAeq (15 minute)	Evening LAeq (15 minute)	Night LAeq (15 minute)
All sensitive receivers	55	50	45

2.2 Environment Protection Licence

The Environment Protection Licence 3035 (EPL 3035) conditions relevant to mobile chipper operation that have been considered in this Plan are detailed in **Table 2**.

Table 3– Environment Protection Licence Conditions

No.	Requirement	Document Reference
L5	**Hours of Operation**	
L5.1	The Hours of Operation for any mobile log chipper used on the premises are limited to 7:00am to 6:00pm Mondays to Saturdays and 8:00am to 6:00pm Sundays and Public Holidays.	Section 4.2

EPL 3035 also stipulates noise limits, which are not to be exceeded, for noise generated by the Development. These limits mirror those noted in Table 2 above.

3 Meteorological Monitoring

Borg operates a meteorological monitoring station located on-site to the east of the Spring Dam. This is a real-time weather station that monitors wind speed, wind direction, air temperature, rainfall, barometric pressure, relative humidity, dew point, evaporation, peak wind gust and solar radiation.

Wind directional data clearly signifying when one or two mobile chippers may be operated, or when they are not to be operated, is to be displayed as a live feed from the meteorological station in full view of the Log Yard Supervisor. The Supervisor will review data and advise operators when wind direction prevents operation and to shut down equipment.

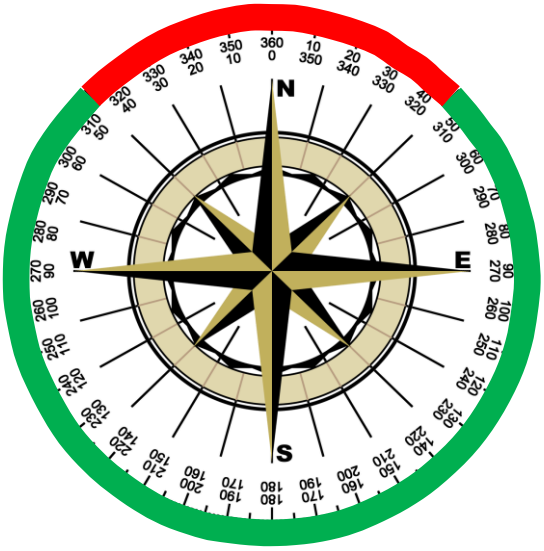
Note: If wind speed falls below 5 km/hr (1.4 m/s) the wind direction sensor (wind vane) becomes inaccurate.

4 Operating Conditions

4.1 Wind Direction

One Mobile Chipper

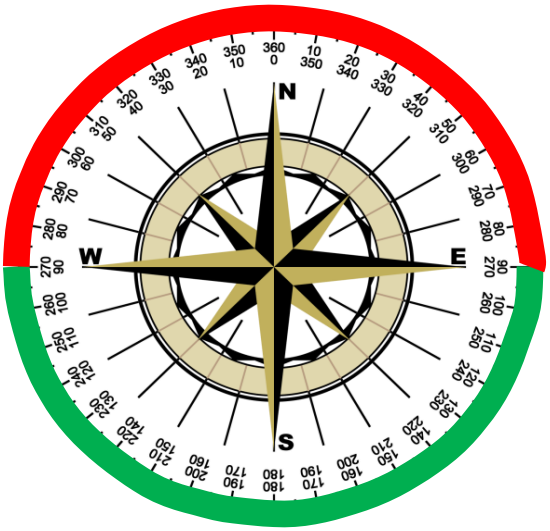
One mobile chipper **MAY** be operated when wind direction is from north-east through to north west (45°, through 180°, to 315°), as shown in green on the compass below.



One mobile chipper must **NOT** operate when wind direction is from the north-west through to the north-east (315°, through 0°, to 45°), as shown in red on the compass above.

Two Mobile Chippers

Two mobile chippers **MAY** be operated simultaneously when wind direction is from east through to west (90°, through 180°, to 270°), as shown in green on the compass below.



Two mobile chippers must **NOT** operate simultaneously when wind direction is from the west through to the east (270°, through 0°, to 90°), as shown in red on the compass above.

4.2 Timing

Mobile wood chippers are **ONLY** to be operated during the daytime period, defined as:

- 7:00am to 6:00pm Monday to Saturday
- 8:00am to 6:00pm Sundays and Public Holidays

4.3 Electric Chippers

The use of mobile wood chippers on site is restricted to periods of breakdown or maintenance of the permanent wood debarkers and electric chippers.

4.4 Rock/Concrete Breaking Permit to Work

Mobile wood chippers are not to operate simultaneously with rock/concrete breaking activities.

Construction activities involving rock/ concrete breaking require a completed Permit to Work to be submitted to both the Construction Project Manager and Log Yard Supervisor. Approval of both parties is required prior to commencement of rock/concrete breaking activities.

5 Responsibilities

Table 4 Roles & Responsibilities

Position	Responsibility
Area Manager	Ensure that the requirements of this Plan are met.
Log Yard Supervisor	Inform, instruct and train operators regarding the requirements of this Plan. Monitor and review meteorological station data and advise when mobile wood chipper operation to cease Enforce and discipline staff for non-conformance of this plan, where necessary.
Mobile Chipper Operators	Operate mobile wood chippers in accordance with this Plan.
Environmental Coordinator/Manager	Review, and if necessary revise, this plan following a modification to either Development Consent SSD 7016 or EPL 3035, or submission of an incident report to either Department of Planning and Environment or Environment Protection Authority.

6 References

Global Acoustics (May 2016). *Borg Panels Timber Panel Processing Facility Oberon NSW – Noise and Vibration Impact Assessment*. Prepared for Borg Manufacturing.

Appendix G – Spring Fed Dam Reclamation Plan

EMS0099

Spring Fed Dam Reclamation Plan

Borg Panels

124 Lowes Mount Road, Oberon NSW

Borg Panels Pty Ltd

28 May 2019

This document should be read in conjunction with EMS0060 Construction Environment Management Plan, EMS0006 Surface Water Management Plan and EMS0008 Erosion & Sediment Control Plan.

Revision History

Rev No.	Revision Date	Author / Position	Comments	Details	Authorised	
					Name / Position	Signature
0	29/03/2019	Jacqui Blomberg Environment Manager		Draft	Victor Bendevski Environmental and Regulatory Compliance	
0.1	28/05/2019	Jacqui Blomberg Environment Manager	Following DILW/NRAR review	Draft	Victor Bendevski Environmental and Regulatory Compliance	
1	28/05/2019	Jacqui Blomberg Environment Manager	For issue		Victor Bendevski Environmental and Regulatory Compliance	

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Appendices

1 INTRODUCTION

1.1 Background

Borg Panels operates a Medium Density Fibreboard (MDF) manufacturing facility in Oberon, NSW. This facility produces a range of Customwood MDF products including:

- Standard MDF;
- Moisture Resistant MDF;
- E0 (Low Formaldehyde Emitting) MDF;
- Ultraprime MDF Mouldings;
- Decorative Laminated MDF and Particle Board; and
- Treated paper for the lamination of MDF and Particle Board.

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 at the existing Borg Panels site located on 124 Lowes Mount Road, Oberon.

On 20 November 2018 modification of Development Consent SSD 7016 MOD 1 was approved by the Director, Industry Assessments as a delegate of the Minister for Planning under section 4.55(1A) of the *Environmental Planning and Assessment Act 1979*. This modification included a proposal to extend the footprint of the warehouse at the north west portion of the site, which will encroach on the spring fed dam located at the north of the site. This extension will require reclamation of a portion of the man made dam to provide suitable structural footing for the new building, driveway and to allow sufficient space for the changes to the surface water management system. **Figure 1** shows the existing spring dam location.

1.2 Purpose and Objectives

The purpose of this Plan is to:

- Address the relevant conditions of Development Consent SSD 7016 including modifications and to manage the reclamation of a portion of the spring fed dam at the Borg Panels facility.

The objectives of the Plan are to:

- Identify potential impacts to the water resulting from construction activities, specifically the reclamation works;
- Implement appropriate mitigation and management measures as required, ensuring they meet relevant legislative requirements;
- Address comments concerning the reclamation works received in response to the approved Section 1A modification for an increase building footprint; and
- Define a protocol for reporting environmental incidents.

1.3 Structure of this Plan

This Spring Fed Dam Reclamation Plan (the Plan) has been developed to manage potential impacts to the dam during reclamation works and to satisfy the requirements as set out in Conditions C1 and C9 of Development Consent SSD 7016 and Condition B33A of MOD 1.

This is a sub plan to EMS0060 Construction Environmental Management Plan (CEMP) and includes information on the following:

- Section 2 – Legislative and Regulatory Compliance
- Section 3 – Overview
- Section 4 – Environmental Impact Assessment
- Section 5 – Mitigation & Management Measures
- Section 6 – Fill Design
- Section 7 – Inspections & Reporting
- Section 8 – Plan Review

1.4 Consultation

The Final Draft of this Plan was sent to DILW for review and consultation. The Final Plan will be submitted to the Secretary of the Department of Planning and Environment (DP&E) for approval. Correspondence regarding consultation is included in **Appendix A**.

1.5 Responsibilities

Name	Title	Responsibility
David Read	Construction Manager (CM)	• Instruct employees/contractors on how to comply with environmental procedures including this Plan and requirements relevant to their respective work activities • Ensure SS is aware of and complies with the environmental obligations as detailed in this Plan • Tracking and compliance against the Conditions of Consent for the scope of works detailed in this Plan • Evaluate effectiveness of environmental controls associated with the works detailed in this Plan • Implement and support remedial measures as recommended by the EO • Engage with EO, EM and environmental consultants where required to provide support in implementing this Plan • Investigate any environmental incidents or complaints with EO and EM where required, and ensure corrective action is implemented
Levi Yates	Site Supervisor (SS)	• Manage employees / contractors and construction activities on a daily basis to ensure the appropriate environmental controls are implemented and maintained • Undertake daily site inspections of environmental controls • Implement actions identified as a result of site inspections or reported environmental issues • Report any environmental management concerns or incidents immediately to the Construction Manager
Ian Makins	Environment Officer (EO)	• Train employees/contractors on how to comply with environmental procedures including this Plan

		• Undertake regular site inspections, documented at least monthly to ensure environmental issues are identified and managed and controls are adequate • General environmental compliance observations and recommend actions where necessary • Investigate any environmental incidents or complaints with CM and EM where required, and ensure corrective action is implemented
Jacqueline Blomberg	Environmental Manager (EM)	• Assist EO in training employees/contractors to ensure compliance with environmental procedures including this Plan • Investigate serious incidents, complaints or non-conformances and ensure necessary corrective action is implemented • Assist CM with tracking and compliance against the Conditions of Consent for the scope of works detailed in this Plan • Provide and other necessary support to EO and CM • Conduct review as per section 8 of this Plan

2 Legislative, Regulatory & Licence Compliance

2.1 Relevant Legislation

Key environmental legislation for the Existing Development includes:

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

Other relevant legislative framework associated with the spring dam reclamation works is the *Water Management Act 2000.* The NSW Aquifer Interference Policy is the governing policy for the licensing and assessment of aquifer interference activities under this Act and therefore is considered for this activity.

2.2 Conditions of Consent

The existing development operations are subject to the conditions contained in Development Consent SSD 7016 dated 29 May 2017 and SSD 7016 MOD 1 approved 20 November 2018.

The specific requirement for a Spring Dam Reclamation Management Plan (the Plan) can be found in Schedule 2, Condition B33A:

> **Spring Dam Reclamation Management Plan**
> *The Applicant must prepare a Spring Fed Dam Reclamation Management Plan for the Project. The plan must form part of the CEMP as required by Condition C1 and be prepared in accordance with Condition C9 and must:*
> - *Be prepared in consultation with DILW;*
> - *Be submitted to the Secretary for approval prior to commencement of the spring fed dam reclamation works;*
> - *Include details of the reclamation materials and reclamation methodology for the spring fed dam reclamation works;*
> - *Detail the management measures to mitigate water quality impacts during the spring fed dam reclamation works; and*
> - *Incorporate the recommendations outlined in Appendix A of Borg Construction Pty Ltd's Letter to Department of Industry, dated 2 August 2018 as described in Modification Assessments.*

2.3 Water Access Supply Licence

The existing development has approval from Department of Primary Industries (DPI) for water supply works under approval 80WA715797 allocating 28 units per financial year to be extracted from the aquifer (spring dam). The Statement of Approval issued under the *Water Management Act 2000* must be referred to during the reclamation works to ensure the conditions of approval are met, including nil exceedance of extraction limits.

If it is determined during design (or similar investigations) that the current water allocation is not sufficient, an application to DPI will be submitted requesting a temporary increase to the approved allocation units for the duration of the reclamation works.

3 OVERVIEW

3.1 Site Environment

The site is currently developed for the purposes of a manufacturing facility for Medium Density Fibreboard (MDF) and particleboard. This includes:

- A number of large scale industrial buildings which contain various processes involved with the manufacture of MDF and MDF products
- Concrete hard stand areas between the buildings
- A two-story administration/amenities building with associated staff car parking
- Various necessary items of infrastructure including venting, dust collection and wood particle conveyors Other facilities/buildings associated with the use of the land (including maintenance areas, security entry/exit gates and weigh bridges
- Fencing, landscaping, surface water drainage and other site facilities

The expansion works that have been undertaken allowed for the construction of a dedicated particleboard manufacturing line, whilst providing additional infrastructure including within existing buildings, to value add existing products.

The further proposed extension of the warehouse at the north west of the site will encroach on the spring fed dam. Part of the dam area will require reclamation to provide suitable structural footing for the new building and driveway, and allow sufficient space for the changes to the surface water management system.

3.2 Identification of Issues

Additional works as approved under as per SSD 7016 MOD 1, namely extension of the northern warehouse facility, will affect the spring fed dam.

Potential issues associated with the reclamation works include pollution of waterways if dam dewatering is required, or use of unsuitable fill material, which may result in localised groundwater mounding which may have a negative effect on water quality.

Advice on the reclamation works provided by Edge Geotechnical *Borg Panels Timber Processing Facility Modification 1 (SSD 7016 MOD 1) Comments on Reclamation of Spring Fed Dam* (**Appendix B**) concluded that groundwater flow paths could be maintained whilst achieving the required fill compaction/stability for the warehouse extension. Edge Geotechnical recommended further investigation be undertaken into reclamation materials and the preparation of a reclamation methodology.

Acting on the recommendations of Edge, reclamation of the spring dam has been assessed by Sustainability Workshop *'Proposed S96 Mod for an increase building footprint at Oberon – surface water quality and quantity considerations'* (**Appendix C**) which concludes that the activity should not impact on long-term viability of the groundwater source if the advice provided by Sustainability Workshop is followed. Impacts and mitigation measures are further discussed in sections 4 and 5 of this Plan.

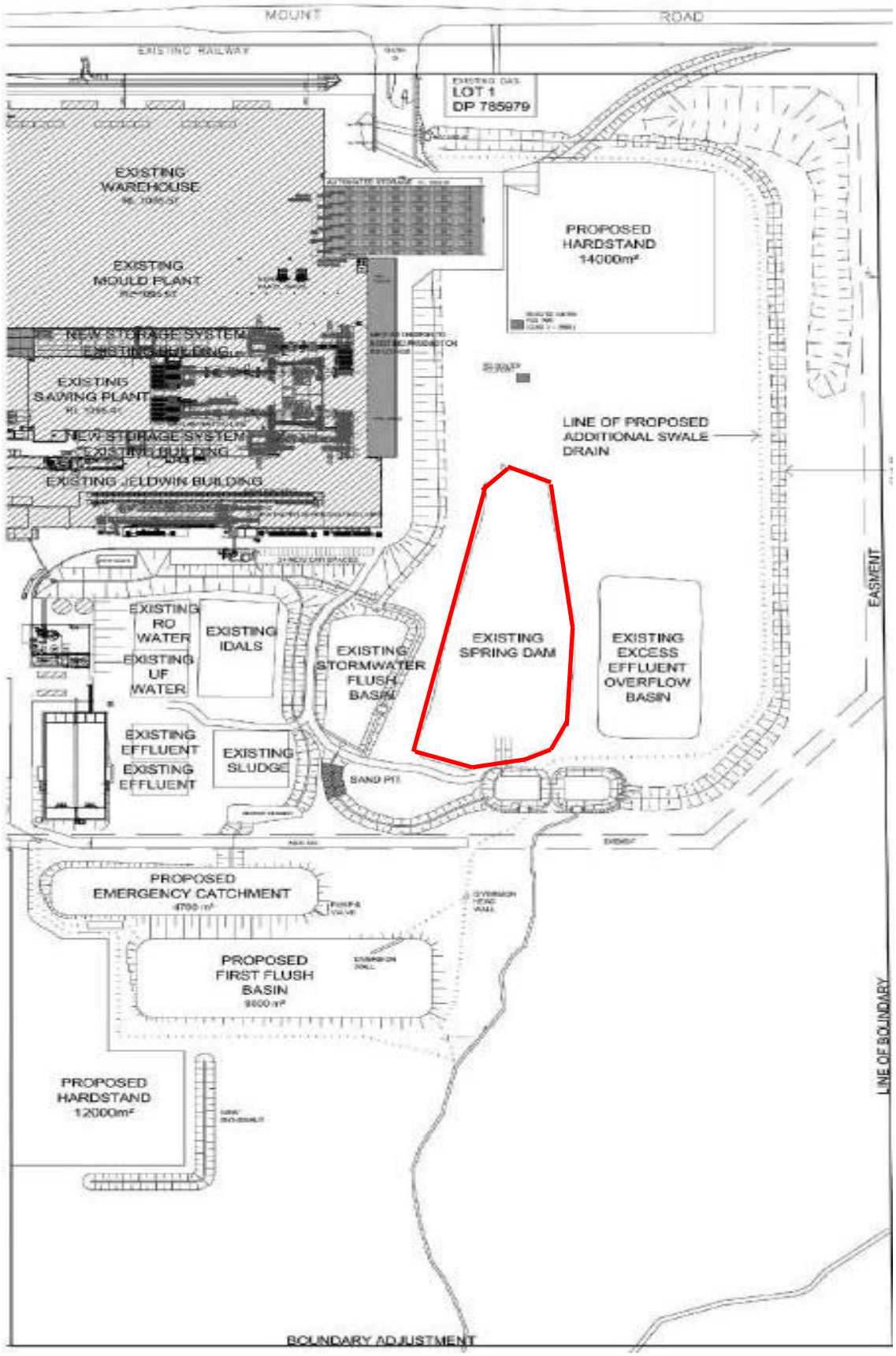

Figure 1 Existing spring dam location

4 ENVIRONMENTAL IMPACT ASSESSMENT

4.1 Existing Environment

The spring dam is a groundwater dependent dam that does not store surface waters. This dam was created by previous owners of the facility when they had extracted clean fill for construction purposes. This location has a shallow groundwater table and as a result, a permanent waterbody was inadvertently created. The dam has no notable upstream catchment and is simply a hole in the ground, filled with groundwater.

The permeability of the fill placed in the dam will need to be maintained during construction and operation of the facility to prevent sealing of the spring and influencing the groundwater table.

4.2 Potential Impacts

Potential impacts from the activity could occur during both construction and operation of the facility.

4.2.1 Construction

During construction, impacts on water quality causing pollution to Kings Stockyard Creek has been identified as a key risk if dewatering of the dam to reduce the water level were to occur. This water may be more turbid than normal given the construction activities and hence, affect water quality.

Envirowest Consulting has provided a construction design plan (see **Appendix D**) which satisfies the requirements recommended by Edge Geotechnical and The Sustainability Workshop. This plan is outlined below in Section 6 Fill Design & Methodology.

Use of unsuitable fill material has also been identified. If use of a fill material that has a lower permeability that currently exists localised groundwater mounding may result. Groundwater mounding occurs where infiltrating water intersects a groundwater table and the rate of water entering the subsurface is greater than the rate at which water is conveyed away from the infiltration system. Mounding may result in groundwater impacts on site or on adjacent land, and has the potential to damage building structures, as it is an unsuitable construction material.

4.2.2 Operation

Provided that a porous fill material is chosen to reclaim the dam i.e. allows groundwater to flow through it at a rate equal to or greater than the site clays and is also low in dispersible materials (less than 10% dispersibility), it is unlikely that there will be any short term or long-term groundwater implications. Further, a reduction in evaporation from the surface of the dam may be realised as the surface area will be reduced.

5 MITIGATION & MANAGEMENT MEASURES

Provided the advice contained within Sustainability Workshop *'Proposed S96 Mod for an increase building footprint at Oberon – surface water quality and quantity considerations'* and fill design provided by Envirowest Consulting, the proposed reclamation works will not impact on long term viability of the groundwater source whilst providing a suitable foundation for the building works to proceed. The below mitigation and management measures are applicable for both construction and operation phases of the facility. Measures are as follows:

- Implement the Spring Fed Dam Reclamation Management Plan (this Plan) for the site
- Implement erosion and sediment control measures over the development site whilst construction works are underway as part of CEMP
- Fill imported to site to be suitably certified
- Engage a geotechnical engineer to review subsurface conditions during construction stages and to confirm that subsurface conditions are consistent with design assumptions (see section 6. Fill Design), and provide advice on fill placement methodology
- Ensure flow path for emerging groundwater is maintained
- Daily monitoring to ensure no discharge of dam water off site, pump into the existing stormwater flush basin to be used as site process water
- Follow the fill design (including reclamation materials) provided by Envirowest Consulting and outlined in this Plan in Section 6. Fill Design & Methodology
- Undertake daily site inspection to maintain and ensure ERSED controls are working effectively
- Undertake (at least monthly) environmental inspections using checklist to record site condition, monitor environmental performance of the construction works, and capture required actions to address identified adverse environmental impacts

Provided that a 'closed site' approach is adopted during construction to ensure no dam water leaves the site, the risk of causing pollution under the POEO Act will be minimised.

6 FILL DESIGN & METHODOLOGY

It is anticipated that approximately half of the spring dam will be filled to facilitate the warehouse extension works. **Figure 2** illustrates the area of the spring dam to be reclaimed, and **Figure 3** the extension and associated works details. During construction the permeability of the dam void will be maintained in the filling process. The expected depth of the dam is 6 meters. The fill for the reclamation works will comprise boulders, ballast, recovered aggregates, general fill and stabilised fill (**Table 1**). Geotextile, geogrid and geotube will assist the stabilisation process.

Boulders will be placed in the base of the dam to provide a stable layer for compaction. The fill material in the dam void will be crushed coarse cobbles or ballast comprising gravel, concrete and ceramic tile. The aggregate will be placed from the base of the dam to the water level. The aggregate will be placed on the edge of the dam and pushed into the dam filling approximately half of the dam. Voids between the cobbles will enable movement of water and ensure the permeability and that the spring remains able to maintain flows into the remaining area of the dam. The blast/cobbles will have a 1:2 batter and may be stabilised with a permeable grout mat and a concrete filled geotube. The geotube will be anchored to the base of the dam with rock and will secure the edge batter of the filled area.

At the water level, a layer of geotextile matting will be placed above the cobbles. Subsequent layers will consist of a sandy clay fill material with gravel and will contain two layers of geogrid geotextile and geotextile matting, which will bridge the aggregate above the dam. Advice may be sought from geotextile suppliers for the optimum product for the bank and pad area.

The final fill level will be approximately 6 meters above the dam water level and the geotextile. The upper 300mm of fill will comprise DGB 20mm gravel stabilised with 5% cement. The final wearing surface layer is steel reinforced concrete and the thickness shall be governed by the expected loads. **Figure 4** provides a schematic of the filled dam area including fill layers and materials.

The level of stabilised layer will be verified for no deformation by proof rolling with a minimum 10t truck or similar prior to construction activities. Compaction testing may be undertaken at each lift above the water level to check for compaction density.

Table 1: Fill Layers in the Spring Dam

Layer	Description	Comments
Surface layer	Concrete	-
Base and subbase (300mm)	Stabilised DGB gravel	Compacted
General fill (5m)	Sandy clay with gravel with two layers of geogrid separated by 2m	Compacted
Water level	Geotextile	-
Dam void (5m)	Ballast/cobbles (>75mm dia)	Washed with no fines
Base of dam	Boulders (>200mm dia)	Base of dam in sediment

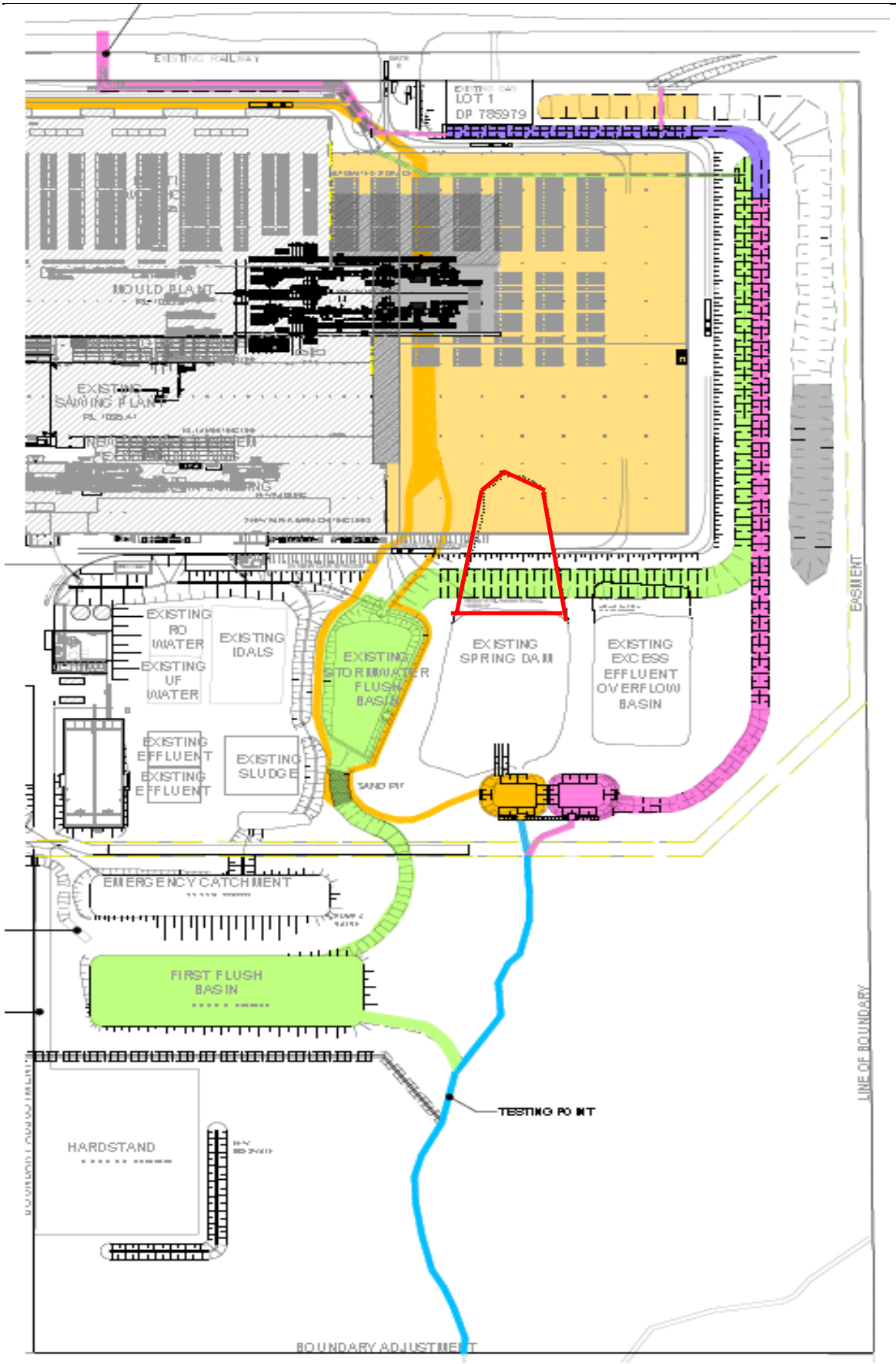

Figure 2 Spring dam reclamation area

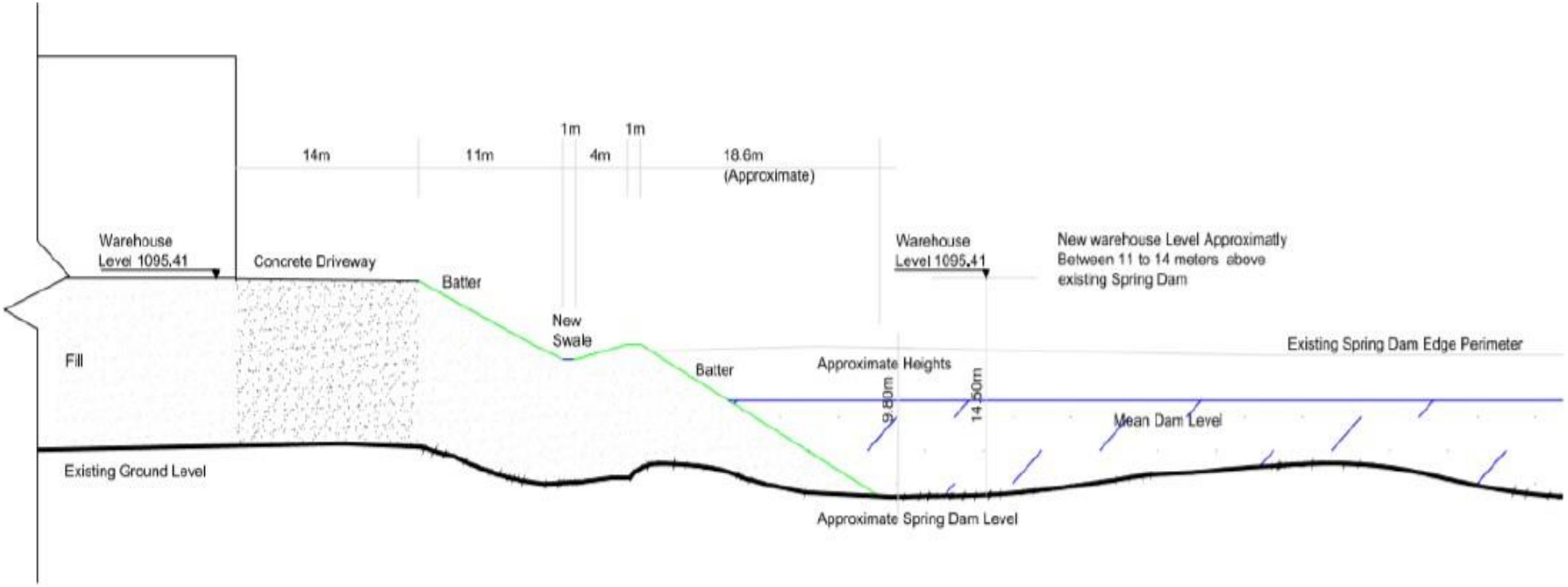

Figure 3 Construction plan for reclamation works

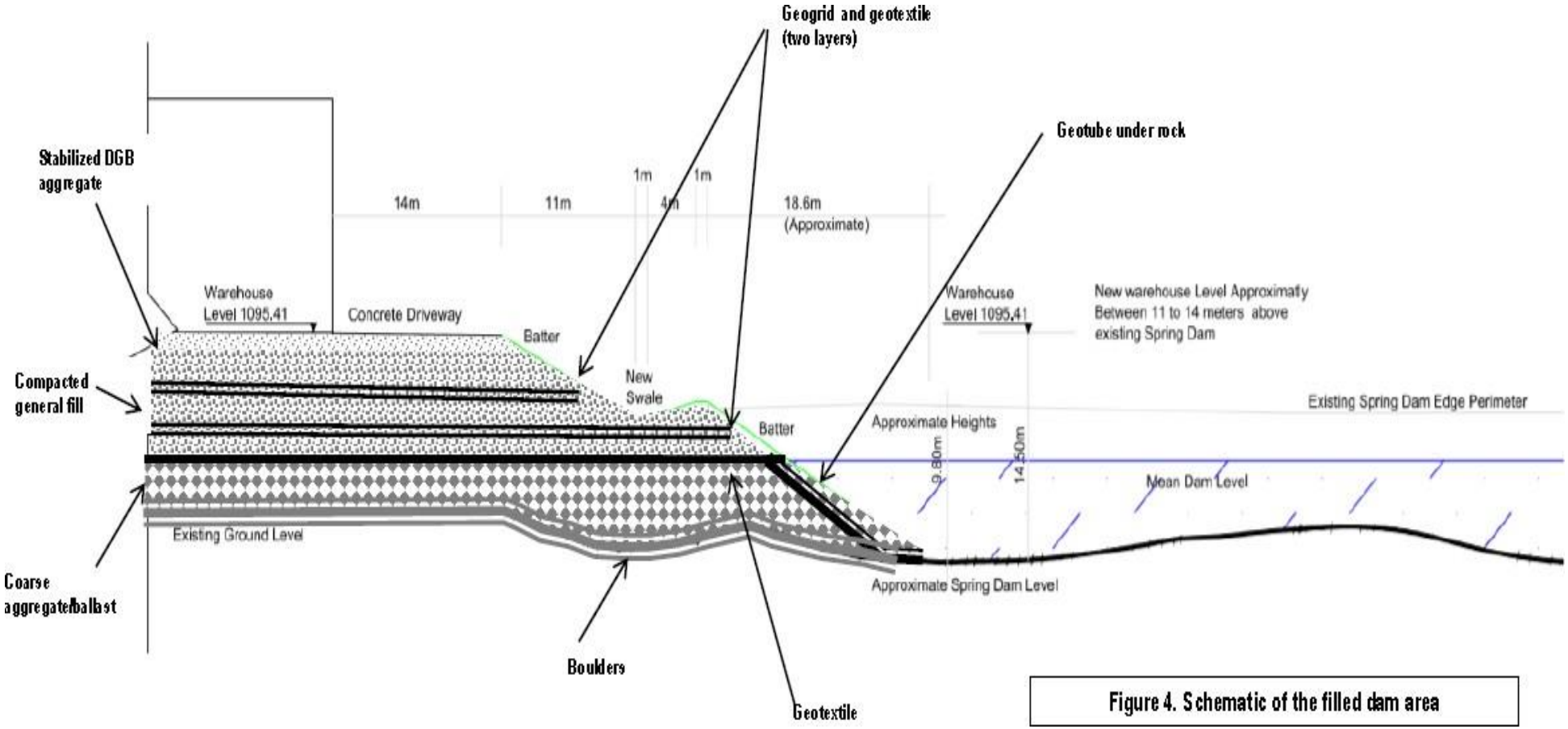

Figure 4 Schematic of filled dam area

7 INSPECTIONS & REPORTING

Borg Panels will manage all internal and external reporting requirements in accordance with EMS0060 Construction Environment Management Plan (CEMP). Any environmental concerns regarding the reclamation works will be immediately reported to the Construction Manager and/or the Environment Officer.

7.1 Inspections

Either the Environment Officer or Site Supervisor will perform daily inspections of the construction area. Any environmental issues identified such as ineffective erosion or sediment controls will be addressed immediately. A monthly site inspection will be conducted and recorded by the Environment Officer. Checklists will be used to report on activities for compliance with this Plan and to identify issues specific to the reclamation works that require attention.

Pre-rainfall and post-rainfall inspections will also be undertaken and recorded by the Environment Officer to ensure erosion and sediment control devices are adequate, working effectively and replaced if necessary.

All workers will be responsible for reporting identified environmental issues immediately to the Site Supervisor, and implementing the requirements of this Plan as they conduct their works.

7.2 Unlicensed discharge

In the event of an unlicensed discharge during the reclamation works, 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 Officer for Borg Panels. In the absence of the Environment Officer, the notification procedure is to be initiated by the person designated as fulfilling the responsibilities of the Environment Officer.

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

7.3 Annual Review

In accordance with Development Consent SSD 7016 an Annual Review report is prepared and submitted to the Secretary Department of Planning and Environment on an annual basis. The review will be prepared in accordance with Condition C11.

8 PLAN REVIEW

In accordance with Development Consent SSD 7016 Condition C10, this Plan 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 Plan 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 Plan will be submitted to the Secretary DP&E for approval.

Appendix A
Consultation Correspondence -DPI and DILW

Appendix B
Edge Geotechnical *Borg Panels Timber Processing Facility Modification 1 (SSD 7016 MOD 1) Comments on Reclamation of Spring Fed Dam*

Appendix C
Sustainability Workshop *Proposed S96 Mod for an increase building footprint at Oberon – surface water quality and quantity considerations'*

Appendix D
Envirowest Consulting –*Partial filling of Spring Dam, 124 Lowes mount road, Oberon NSW*.

Appendix H – Site Inspection Checklists

Construction Site Inspection Checklist

Note: This form is designed for general use and may not be exhaustive. Modifications and additions may be necessary as the project progresses to address specific environmental issues and associated mitigation measures.

Project – Install particle board plant and additions to MDF plant

Site Location – Borg Panels 124 Lowes Mount Road, Oberon

Inspection Date – **Inspection Time –**

Weather Condition –

Inspected By – **Signature –**

Inspection Item	Implemented? Y/N or n/a	Remarks & Action (specific location, good practice or problem observed)
1. Site Security and Access		
Is the perimeter fence undamaged?		
Are internal footpath areas clear of sediment, sand and mud?		
Are public roadways clear of dirt/mud?		
Are site entry/exit hardstand areas clean?		
Is the street sweeper being used on site and public roadways?		
Others (please specify)		
2. Soil and Water Management		
Are erosion and sediment controls installed prior to earthworks commencing?		
Are controls installed at access/egress areas to managing tracking of mud?		
Are sediment fences installed correctly (fabric buried and standing upslope of stakes)?		
Do any erosion/sediment controls need repairing or replacing?		

Inspection Item	Implemented? Y/N or n/a	Remarks & Action (specific location, good practice or problem observed)
Have swales been grassed/stabilised?		
Is the site adequately prepared for potential storms? i.e. adequate stock of erosion and sediment controls materials (hay bales, silt fence etc.), no loose materials		
Others (please specify)		
3. Spring Dam		
Are daily observations undertaken for conditions of environmental control?		
4. Noise Management		
Are works being undertaken within the approved construction hours? *Monday to Friday 7am to 7pm* *Saturdays 8am to 1pm* *Sundays and Public Holidays* *NO WORKS*		
Are all workers aware of the approved construction hours?		
Is plant and equipment maintained to ensure running efficiently?		
Is plant and equipment turned off when not in use? i.e. not left idling		
Others (please specify)		
5. Air Quality (Dust) Management		
Are material stockpiles stable and not generating dust?		
Are site activities generating offsite dust emissions?		
Is dust suppression being used?		
Do trucks entering and exiting the site have their loads covered?		

Inspection Item	Implemented? Y/N or n/a	Remarks & Action (specific location, good practice or problem observed)
Others (please specify)		
6. Hazardous/Chemical Materials		
Are chemicals or fuels used on site correctly bunded? (and bund is to be covered to not collect and store rainwater)		
Are spill kits present and appropriately stocked?		
Is the site free of fuel or chemical spills? i.e. no visible spills		
7. Construction & Demolition Waste Management		
Is the construction site clear of litter and loose rubbish?		
Do waste bins have capacity to receive rubbish? i.e. not full or overflowing?		
Is liquid waste stored in appropriate containers in a bunded area?		
Are waste streams separated into skips where applicable? i.e. steel, concrete		
Are records being kept of all waste removed from site?		
Is the Waste Tracking Register up to date?		
Others (please specify)		
8. Traffic and Pedestrian Management		
Is the Traffic Control Plan up to date?		
Is there adequate plant/people separation?		
Others (please specify)		
9. Contamination Management		
Are excavations free of visual and odorous contamination?		

Inspection Item	Implemented? Y/N or n/a	Remarks & Action (specific location, good practice or problem observed)
Are records being kept for all imported fill material? i.e. VENM, ENM		
Is the Unexpected Finds (UF) Protocol displayed on site notice board?		
Have workers been trained in the UF Protocol?		
Is contaminated soil stockpiled separately for classification?		
Others (please specify)		
10. Vegetation		
Has vegetation to be retained been protected?		
Does this need to be repaired/replaced?		
Others (please specify)		
11. Other Items		

Daily Inspection Checklist for Site Supervisor

Note:

On a daily basis, site supervisory staff will inspect the site and any issues arising will be noted in the daily diaries and communicated to the Project Manager.

The inspections will be conducted visually prior to commencement of each day's work and where appropriate during the working day.

A final daily inspection will also be undertaken at the end of the workday to ensure that systems and structures are in place.

Visual inspection of the site for:

- excessive dust generation
- weather conditions and activities being carried out
- condition of stabilised site work access controls
- truck load covers
- no tracking of dirt onto public roads
- public roads are clean
- excessive exhaust emission from plant and equipment
- no odour present
- visual inspection of excavations to detect presence of contamination