
APPENDIX H**CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN & DRAINAGE & STORMWATER PLAN**

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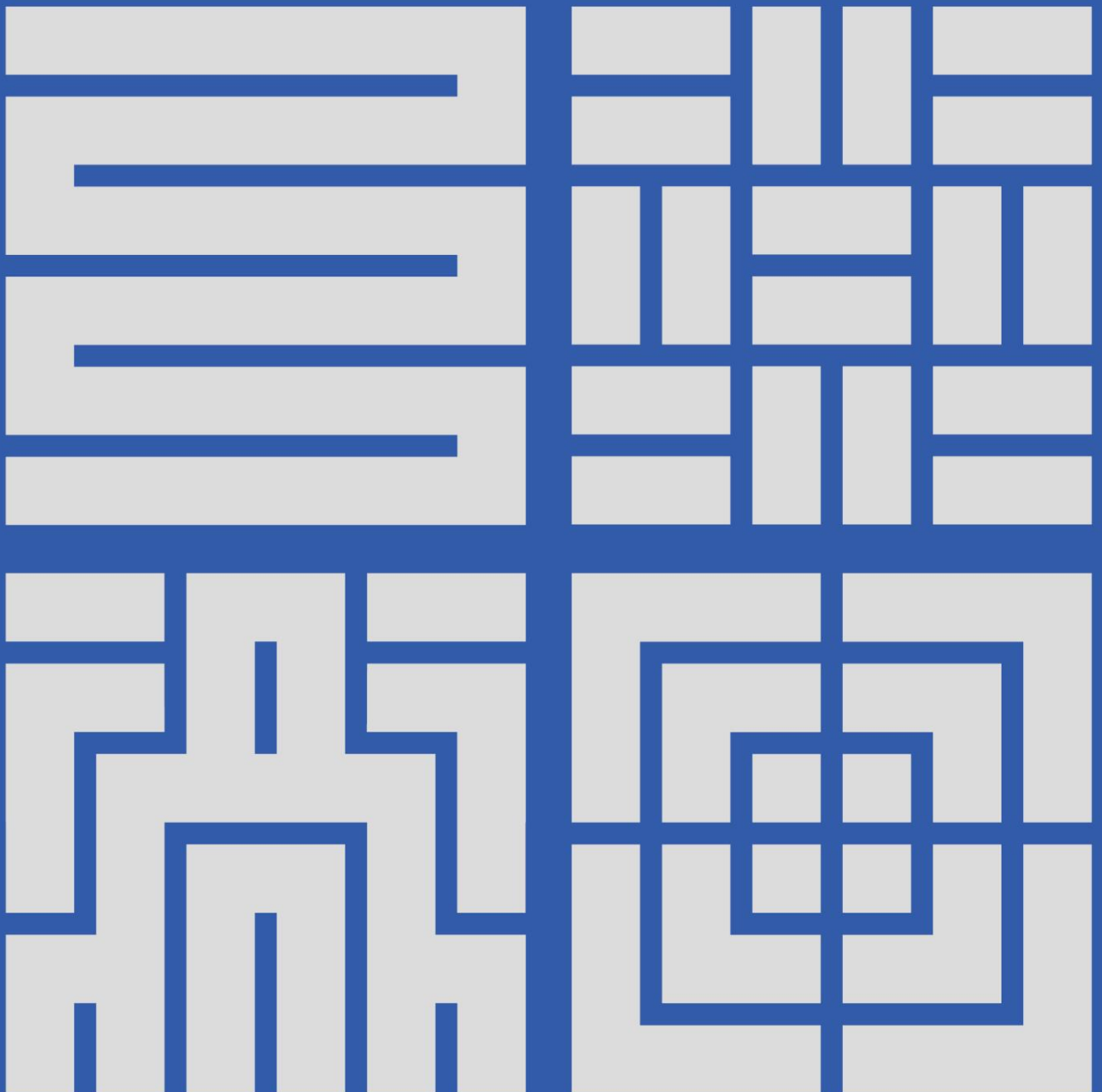
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**NILLUMBIK SOLAR FARM – SOLAR PANEL INSTALLATION
CONSTRUCTION ENVIRONMENT MANAGEMENT PLAN**

LMS Energy Pty Ltd | 290-304 Yan Yean Road, Plenty, Victoria
67345-1-CEMP-V3 | 11 March 2022

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VALUE THROUGH INTEGRATION

NILLUMBIK SOLAR FARM – SOLAR PANEL INSTALLATION CONSTRUCTION ENVIRONMENT MANAGEMENT PLAN

290 – 304 Yan Yean Road, Plenty, VIC
67345-1 CEMP-V3

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Date	11/03/2022		



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1. INTRODUCTION

Fyfe Pty Ltd (Fyfe) was commissioned by LMS Energy Pty (LMS Energy) to produce a construction environmental management plan (CEMP) pertaining to the construction and development of a solar farm at a site located at 290 – 304 Yan Yean Road, Plenty, VIC (the site).

The site is a pre-existing landfill that has recently been decommissioned and a capping process completed as part of the site rehabilitation. The landfill had been known historically as the ‘Plenty Landfill’.

Being a former landfill, the site is regulated by the Victorian Environment Protection Authority (EPA).

The landfill closure works outlined in the Plenty Landfill Aftercare Management Plan (ACMP) prepared by Golder Associates and dated June 2015 have been largely completed as of the date of this report. The closed landfill will therefore be in a post-closure care and maintenance state by the time site activities for the construction of the solar farm commence. All requirements of the ACMP will continue unchanged by the presence of the solar farm.

LMS Energy has an ongoing commitment to protect the environment. The purpose of this CEMP is to identify the environmental protection measures, systems and tools to be implemented by LMS Energy and its contractors during the construction works. These measures are aimed at preventing or minimising potentially adverse environmental impacts arising from project development and construction activities and achieving compliance with environmental regulatory requirements. In addition, the CEMP also demonstrates a system for hazard and risk identification and determines appropriate management strategies to be adopted by LMS Energy and its contractors to mitigate or eliminate these risks.

1.1 Background

This CEMP has been prepared in order for LMS Energy to satisfy planning requirements and to meet its requirements under the Victorian *Environment Protection Act 2017* and *Environment Protection Regulations 2021* and related subordinate policies and regulations. This CEMP should be reviewed and updated following receipt of development consent for the project to ensure all conditions of the consent are adequately addressed.

1.2 Objectives of the CEMP

The key performance objective set by the CEMP is to ensure compliance with all environmental legislation and approvals, minimise the potential for pollution, reduce waste, and implement effective controls to mitigate environmental impact. Table 1.1 details specific environmental objectives and targets relevant to the redevelopment project.

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Table 1.1 Objectives and Targets

Number	Objective	Target
1	To employ best management practices to ensure that the construction project meets environmental legislative requirements.	<ul style="list-style-type: none"> – No breach of environmental legislative or regulatory requirements. – No <i>significant</i> environmental incidents.
2	To employ best environmental management practice to ensure compliance with all planning approvals and environmental authorisations	<ul style="list-style-type: none"> – No non-compliance with planning approvals or applicable legislative requirements.
3	To employ best environmental management practice to minimise noise and vibration impacts.	<ul style="list-style-type: none"> – Maintain noise levels to comply with EPA Publication 1254 – Noise Control Guidelines. Maintain vibration levels within human comfort and structural damage criteria.
4	To apply best environmental management practice to soil and water (surface water and groundwater) quality management.	<ul style="list-style-type: none"> – No breach of environmental legislative or regulatory requirements.
5	To minimise dust and air pollution from construction and associated activities.	<ul style="list-style-type: none"> – Levels to comply with EPA Publication 960 - <i>Doing it Right on Subdivisions – Temporary Environmental Protection Measures for Subdivision Construction Sites</i> (2004)
6	To protect vegetation adjacent to the construction zone.	<ul style="list-style-type: none"> – No impacts on trees or other native vegetation outside the construction zone. – Manage any vegetation clearance in accordance with the Victorian <i>Guidelines for the removal, destruction or lopping of native vegetation</i> (2017)
7	To avoid pollution of the environment caused by fuels, oils or chemicals stored or used on the Project.	<ul style="list-style-type: none"> – No major spills of fuel, oil or chemicals.

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1.3 Site Location and Surrounding Land Use

The proposed development site is situated at 290 – 304 Yan Yean Road, Plenty, VIC and is bound to the:

- **West:** Bushland (RCZ – Rural Conservation) and residential housing (LDZR – Low Density Residential)
- **East:** Residential housing and bushland (RCZ – Rural Conservation).
- **South east:** Nillumbik Recycling & Recovery Centre (PUZ6 – Public Use-Local Government).
- **North:** Bushland (RCZ – Rural Conservation).

The site itself is a graded and grassed mound atop the former landfill. It is devoid of trees and bushes (except for the corridor west to Yan Yeau Road that will carry the high voltage connector to the local electricity transmission network).

1.4 Project Description

The proposal includes the operation of fixed, tilted solar panels and associated inverters within a high voltage compound with a total capacity of approximately 1.2 MW. Associated fencing, landscaping, internal driveways, car parking, and water tanks are included in the proposal. An underground powerline extension from the high voltage compound will travel to the Yan Yeau Road site boundary. The proposal also includes development of the adjacent road reserve containing Yan Yeau Road for a utility installation, being the extent of the underground powerline extension extending out into the road reserve to a new 22kV recloser pole and connecting into the existing 22kV overhead pole sited 15m further north along the road reserve.

The inverters will only operate during daylight hours. The site will be an unmanned facility. The number of vehicles and personnel accessing the site will therefore be limited to occasional maintenance staff.

The site will be accessed using the existing access point from Yan Yeau Road and the internal driveway. A designated car parking area with four (4) car parking spaces is provided at the end of the formal driveway and turn around area. An access path is provided around the perimeter of the solar array area and high voltage compound area.

The solar farm will utilise the existing landfill infrastructure such as sediment management and stormwater control systems, without impacting on the landfill aftercare that includes landfill leachate and landfill gas management, and without adding new burdens to these systems.

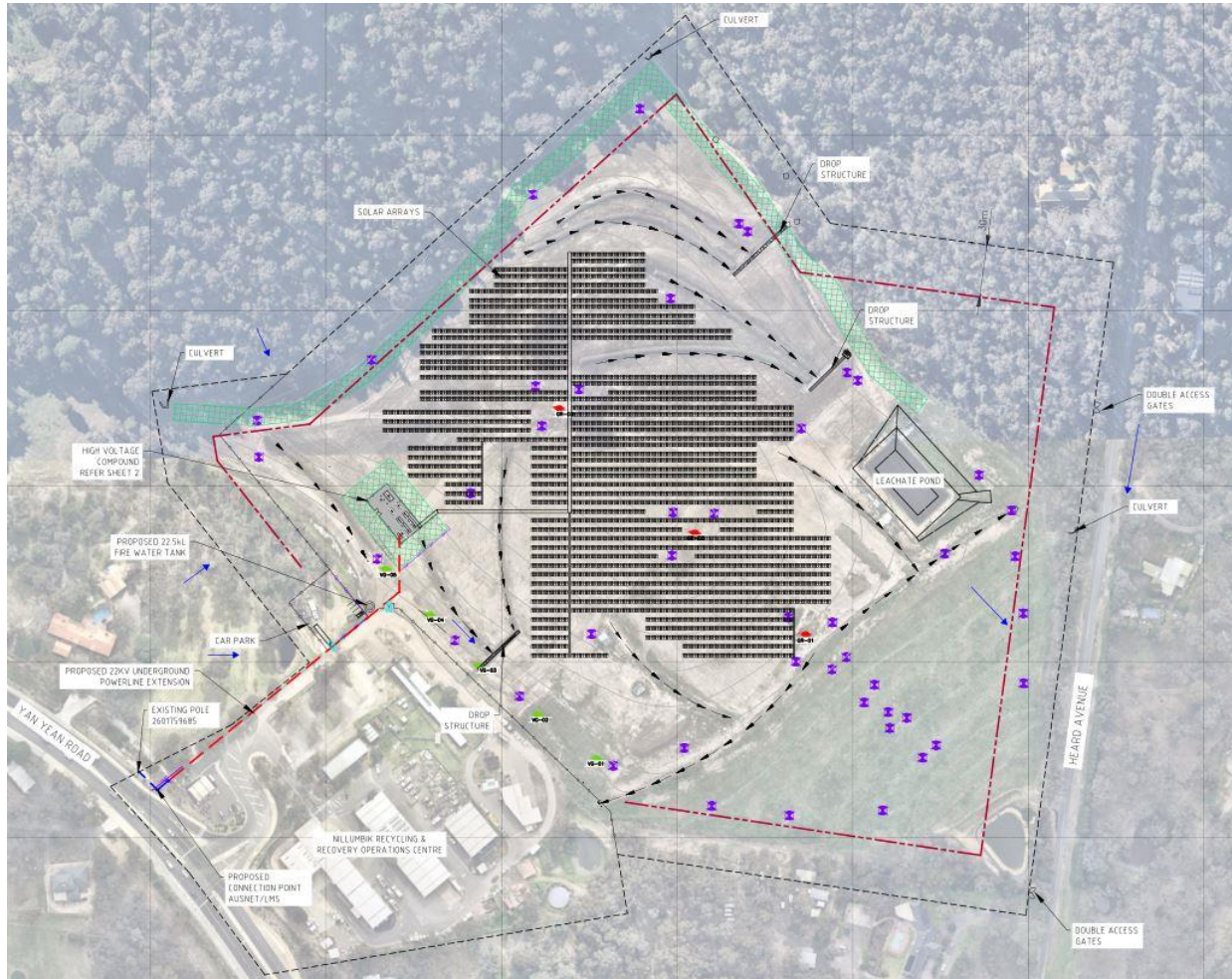
The proposed solar PV facility will include the installation of approximately solar panels and associated electrical cabling, high voltage equipment and connection to the local electricity transmission network.

The proposed works are shown in Figure 1.1.

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Figure 1.1 Proposed works

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2. SITE CONTAMINATION STATUS

The site is a pre-existing landfill facility that has recently been decommissioned and completed a capping process as part of the site rehabilitation. The landfill had been known historically as the ‘Plenty Landfill’.

The former landfill defines the site as a contaminated site. However, the recent decommissioning and closure works involved installing an impermeable engineered cap above the landfill wastes. A typical profile of the cap is shown in Figure 2.1 below.

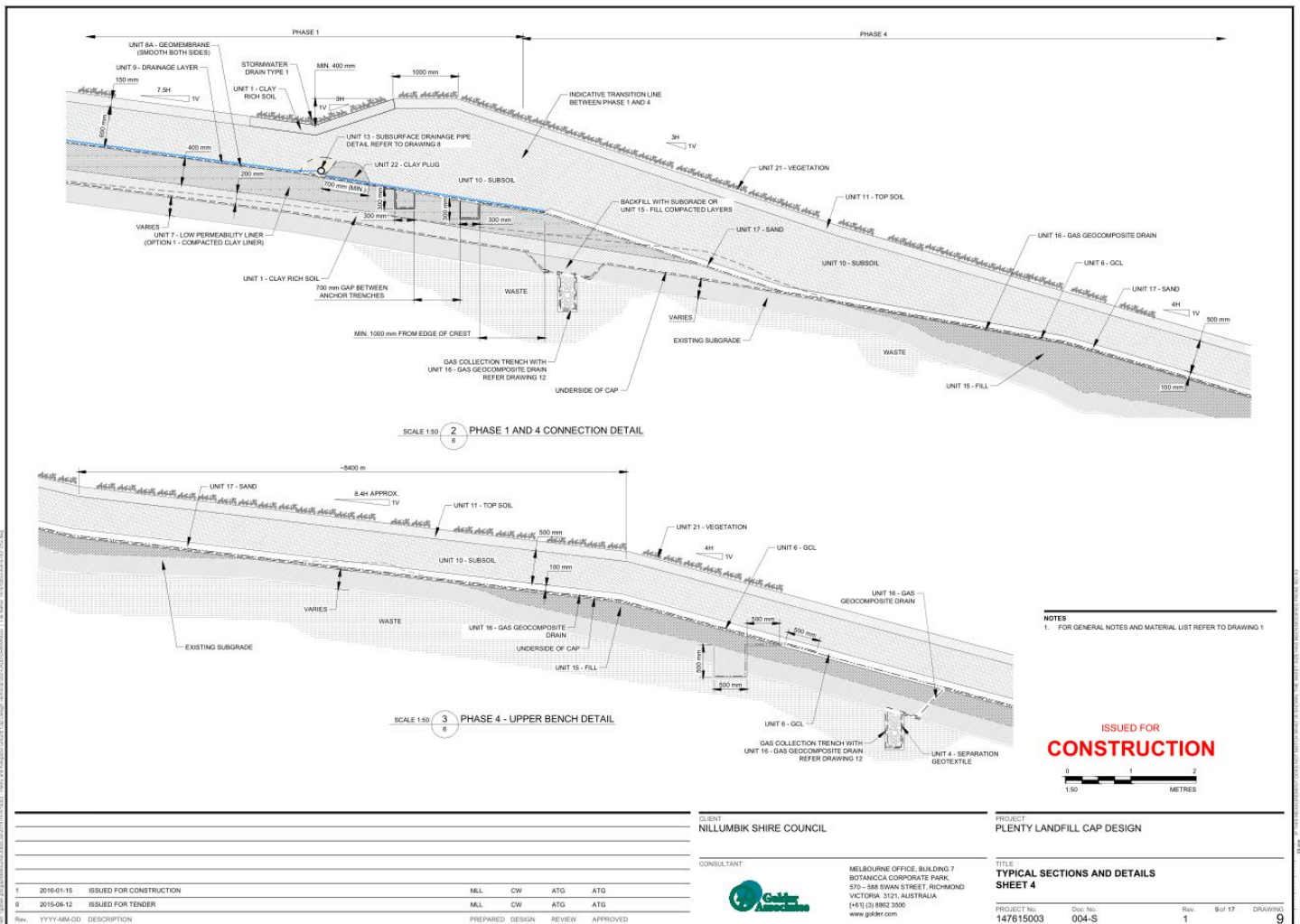


Figure 2.1 Nillumbik landfill cap – typical cross section

The presence of the cap means that the site can be developed for certain uses (including as a solar farm) without having to consider the presence of the contamination, provided the integrity of the landfill cap is not breached or damaged in any way during the construction of the solar farm.

As shown in Figure 2.1, there is a minimum soil thickness of 750 mm above the uppermost protective layer of the landfill cap. All construction works have been designed to not reach as deep as this geomembrane cap layer.

3. PLANNING

3.1 Regulations and Legislative Requirements

The construction works to be undertaken will comply with applicable environmental regulatory and legislative requirements. The following provides a summary of the general requirements for the proposed works.

Table 3.1 Applicable Legislation Relevant to the Development

Legislation/Regulation/Policy	Key Project Requirements
<ul style="list-style-type: none"> • <i>Environment Protection Act 2017 (the Act) and Environment Protection Regulations 2021</i> 	<p>Undertake all activities so as to minimise harm to the environment (in particular pollution of air and water and noise emissions) and not cause an offence under the Act.</p> <p>Any waste be generated by the project can only be sent to disposal/processing facilities that are licensed under the Act.</p>
<ul style="list-style-type: none"> • Victorian EPA Guidelines and Publications: <ul style="list-style-type: none"> ○ <i>1254 Noise Control Guidelines</i> ○ <i>480 Environmental Guidelines for Major Construction Sites</i> ○ <i>1820 – Construction – Guide to preventing harm to people and the environment</i> ○ <i>1828.2 – Waste disposal categories – characteristics and thresholds</i> ○ <i>1856 – Reasonably Practicable</i> ○ <i>1915 – Contaminated land policy</i> ○ <i>1940 – Contaminated land: understanding section 35 of the Environment Protection Act 2017</i> ○ <i>1968 –Guide to classifying industrial waste</i> ○ <i>2008 –Notifiable contamination guideline – Duty to notify of contaminated land</i> 	<p>The project will aim to prevent harm to people and the environment and achieve sustainable waste management by applying the waste management strategies and hierarchy as set out in the various guidelines and publications.</p>

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Legislation/Regulation/Policy	Key Project Requirements
<ul style="list-style-type: none"> • <i>National Environment Protection (Assessment of Site Contamination) Measure, 1999 (NEPM 1999, as amended) - Guideline on Investigation Levels for Soil and Groundwater. Schedule B(1).</i> • <i>Environment Protection (Industrial Waste Resource) Regulations, 2009</i> • <i>1828.2 – Waste disposal categories – characteristics and thresholds</i> 	<p>Works onsite associated with the excavation of contaminated soils and management of excavated material shall be undertaken in such a manner as to meet the mandatory requirements and expectations of Victorian legislation and the EPA, to ensure the ongoing protection of human health and the environment.</p>
<ul style="list-style-type: none"> • <i>Civil construction, building and demolition guide. EPA publication 1834, November 2020.</i> • <i>Improving Victoria's Air Quality Victorian Auditor-General's Office, 2018 (retrievable from https://www.audit.vic.gov.au/report/improving-victorias-air-quality#page-anchor).</i> • <i>Guideline on Protection of Health and the Environment during the Assessment of Site Contamination. NEPM 1999 (as amended), Schedule B(9).</i> • <i>National Environment Protection (Ambient Air Quality) Measure (2003)</i> • <i>Environmental Health Risk Assessment—Guidelines for assessing human health risks from environmental hazards. enHealth, 2002.</i> • <i>Water Act, 1989</i> • <i>Erosion, sediment and dust: treatment train, EPA publication 1893, 2020.</i> • <i>Managing stockpiles. EPA publication 1895, 2020.</i> 	<p>The overarching guidance document is EPA Publication 1834.</p> <p>Dust and potentially offensive vapours encountered or produced during the works will be managed in accordance with relevant Victorian and national policies and guidelines.</p> <p>Stormwater runoff and dust will be managed appropriately and minimised throughout the works.</p> <p>Management of water in excavations shall be undertaken in such a manner as to meet the mandatory requirements and expectations of Victorian legislation and the EPA, to ensure the ongoing protection of human health and the environment.</p> <p>Noise levels during construction works will be managed in accordance with Victorian policies, as set out in EPA publication 1834.</p>

3.2 Construction Hours of Operations

In accordance with EPA publication 1834, construction hours are limited to 7 am – 6 pm Monday to Friday and 7 am - 1 pm, Saturday.

Construction activities with the potential to generate noise with an adverse impact on amenity are subject to the following restrictions:

- must not occur on a Sunday or other public holiday, and
- must not occur on any other day except between 7 am and 7 pm.

However, a particular operation may occur outside these hours, such as on a Sunday or Public Holiday between 9 am and 6 pm or before 7 am or after 6 pm on any other day to avoid unreasonable interruption

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of vehicle or pedestrian traffic movement or local amenity, provided adequate notice (typically at least seven days) is provided to residents who may be impacted, to the local Council and to the EPA.

3.3 Site Establishment and Security

Site establishment will include the establishment of temporary site offices and toilet facilities, designating car parking areas, vehicle access and vehicle loading, unloading and lay down areas. Fencing and gate access will be established in conjunction with the construction works and will be maintained as appropriate to secure the Site and preclude public access from the site.

The site itself is within the secure boundary of the Nillumbik Recycling Centre, which is fully fenced and locked closed when not occupied (after hours).

There is sufficient off-street parking available on-site to ensure that no construction or contractor vehicles will be parked on public roads.

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4. ENVIRONMENTAL ASPECTS, IMPACTS AND RISKS

Environmental aspects as referred to in this document are those activities associated with the project that have the potential to cause, or result in, adverse environmental impacts. Due to the nature of the development, different aspects of the project would present different degrees of environmental risk which need to be managed accordingly.

Effective environmental management should be proactive rather than reactive. In order to facilitate a proactive style of environmental management, a risk management style of assessment has been utilised to identify and assess environmental aspects associated with the project, and to implement appropriate mitigation strategies to minimise the likelihood of environmental issues associated with each aspect. This process involves:

1. Identifying the risk/aspect
2. Analysing the risk/aspect (determining likelihood and consequence)
3. Evaluating the risk/aspect
4. Treating the risk.

All identified aspects are assessed based on the risk assessment matrix displayed in Table 4.1.

Risk assessment is based on (1) the likelihood of an impact occurring as a result of the aspect; and (2) the consequences of the impact if the event occurred. Following this assessment, each impact is assigned a risk category which range from “low” (low likelihood and consequence) to “extreme” (high likelihood and consequence).

A risk category identified as having an extreme or high risk (a significant impact) may be downgraded if appropriate environmental controls and measures are implemented and maintained. Proactive planning, installation and maintenance of appropriate environmental controls and ongoing monitoring will reduce the risks associated with each environmental impact identified for the project. Table 4.2 details the environmental aspects identified for the development project, the initial risk category prior to appropriate management strategies, the proposed management strategy and a revised risk category.

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Table 4.1 Risk Matrix and Qualitative Measures of Likelihood Scale

	Likelihood	Consequences				
		1	2	3	4	5
		Negligible impact or discharge	Uncontrolled Discharges in minor quantities	Moderate breach of environmental statutes	Major breach of environmental statutes	Shutdown of project due to Environmental breach
A	Almost Certain	H	H	E	E	E
B	Likely	M	H	H	E	E
C	Moderate	L	M	H	E	E
D	Unlikely	L	L	M	H	E
E	Rare	L	L	M	H	H

Level	Categorisation of Likelihood	Description
A	Almost Certain	Is expected to occur during the project, 90% or > probability
B	Likely	Will probably occur during the project, ~50% probability
C	Moderate	Might occur at some time during the project, ~10% probability
D	Unlikely	Could occur at some time during the project, ~1% probability
E	Rare	Only occur in exceptional circumstances, < 1% probability

Table 4.2 Potential Impacts and Risk Analysis for the Proposed Development

Potential Impact	Untreated Risk Category	Mitigation Measure (refer to Table 5.1)	Revised Risk Category
Odours emanating from surface stockpiles of cleared material, fill materials, natural soils or buried wastes being exposed through excavation providing an off-site nuisance and/or an on-site health risk.	D1 Unlikely	1	E1 Low
Incorrect off-site disposal of odorous material or potentially contaminated soils.	D1 Unlikely	1	E1 Low
Poorly maintained or inadequate run-off sediment control measures not effectively treating construction run-off on site resulting in a pollution event.	C3 High	3, 4, 5, 7, 8, 9, 10, 11	D2 Low
Excessive dust emissions from earthworks resulting in a community complaint.	D2 Low	13, 14	E1 Low
Inappropriate stockpiling of material potentially resulting in a pollution event.	C2 Moderate	3	D2 Low

Potential Impact	Untreated Risk Category	Mitigation Measure (refer to Table 5.1)	Revised Risk Category
Excessive smoke emissions and fumes into the atmosphere due to poorly maintained equipment	D1 Low	15	E1 Low
Excessive noise generated during bulk earthworks resulting in a community complaint.	D2 Low	16	E1 Low
Spills and leaks during plant maintenance/operation resulting in soil/groundwater contamination.	D2 Low	10, 11	E1 Low
Inappropriate storage of fuels and chemicals resulting in soil contamination or pollution of waterways or wetlands.	D3 Moderate	17	D2 Low
Excavation damage or breach the engineered landfill cap.	C3 High	6	D2 Low
Tracking of sediment onto public roads from construction fleet leaving site.	A3 Extreme	14	D2 Low
Soil contamination as a result of the inadvertent importation of contaminated fill material for backfilling	D3 Moderate	12	E1 Low
Cleaning of agitators or concrete trucks resulting in ground contamination and/or water pollution.	C3 High	10	D2 Low
Disposing of soil and waste construction materials to land fill without the consideration of recycling or reuse.	C2 Moderate	18	D2 Low
Breach of landfill cap resulting in escape of landfill gases and/or infiltration of rainwater.	B4 Extreme	20	D1 Low

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5. ROLES AND RESPONSIBILITIES

5.1 All Personnel

The construction works to be undertaken will comply with applicable environmental regulatory and legislative requirements. The following provides a summary of the general requirements for the proposed works.

All personnel (including sub-contractors) have a general environmental duty of care (as defined in the *Environmental Protection Act 2017* and the *Environment Protection Regulations 2021*) and are responsible for their own environmental performance whilst on the project.

As a minimum, personnel are required to:

- Comply with the requirements of applicable environmental legislation and environmental authorities including the specific requirements of the project approvals and supporting documentation.
- Undertake all activities in an environmentally responsible manner.
- Undertake all activities in accordance with this CEMP, procedures and any subsequent work method statements.
- Identify and report any non-conformances with environmental management, legislative or approvals requirements.
- Ensure that they are aware of the contact person regarding environmental matters and report any activity that has resulted in or has the potential to result in an environmental harm.
- Ensure that they attend any environmental training provided relevant to their role and responsibilities.
- Support the construction team in planning and implementing environmental requirements.

5.2 Key Personnel

5.2.1 Project Manager

The Project Manager is responsible for delivery of the construction phase of the Project to ensure that environmental impacts are minimised and obligations are met. The Project Manager will ensure that the construction team delivers the prescribed environmental outcomes. Key tasks include:

- Ensure compliance with all applicable legal, approval and project environmental obligations including but not limited to this CEMP.
- Ensure all project staff has a clear understanding of the environmental requirements relevant to their area/scope of work.
- Ensure all project staff are competent to undertake their duties including fulfilment of the general environmental duty, with regard to appropriate education, training and experience.
- Ensure the necessary resources and processes are in place for implementation of required environmental controls.

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- Ensure site supervisors are familiar with environmental obligations, project approvals, CEMP and site level plans, relevant environmental management plans and associated documents, and their responsibilities within them.
- Participate and provide guidance in the regular review of the CEMP and any associated documents.
- Take action in the event of an emergency and allocating the required resources to minimise environmental impact.
- Ensure non-conformances are identified, recorded and reported and that required corrective and remedial actions are implemented.
- Report any activity that has resulted in an environmental incident to the Safety Group Manager, and Compliance Group Manager within two hours of the incident occurring

5.2.2 Site Supervisor

Site Supervisor report to the Project Manager. They will have a direct role in the compliance with identified environmental procedures and controls. They will also be responsible for checking the Site on a regular basis and ensuring that regular maintenance is undertaken to minimise environmental impacts and that personnel are provided with appropriate environmental “toolbox” training. Where applicable the Supervisor will be responsible for ensuring that any work performed by external parties meets with the requirements of this CEMP, including identifying and documenting the environmental risks of the proposed works. Key tasks include:

- Ensure all personnel and subcontractors are made aware of the requirements for compliance with this CEMP, environmental obligations and site-specific environmental issues.
- Implement all environmental requirements as outlined in this CEMP as required to avoid and minimise actual or potential environmental harm.
- Ensure non-conformances are identified, recorded and reported.
- Ensure implementation of preventative and corrective actions.
- Co-ordinate the implementation and maintenance of environmental control measures.
- Provide necessary resources required for implementation of the CEMP.
- Co-ordinate action in emergency situations and allocating required resources accordingly.
- Ensure that instructions are issued and adequate information provided to field-based employees who relate to environmental risks on site including via regular toolbox meetings that address environmental issues and controls including the requirements of this CEMP.

5.2.3 Construction Personnel

In addition to the key positions outlined above, with respect to environmental management, all staff working on the project including but not limited to construction workers, personnel involved in preparatory works for construction, surveyors, geotechnical consultants and any other persons undertaking investigations or works for preparatory works have responsibility for environmental performance of the project. The responsibilities of these personnel include:

- Attend all environmental training required and adhere to and remain familiar with the principles covered in the training session(s);
- Undertake all activities in accordance with agreed procedures and work methods;
- Ensure that they are aware of the contact person for environmental matters;

- Ensure that any clearances are obtained from the Site Supervisor where required; and
- Report any activity that has resulted in an environmental incident.

5.2.4 Sub-contractors

It is recognised that often sub-contractors present the greatest environmental risks to a project due to:

- Their detachment from the main construction delivery teams, and therefore the potential for poor communication regarding environmental risks;
- Sub-contractors having different certification standards for quality assurance and environment; and
- Sub-contractors operating under a different management system from the rest of the construction team.

It is LMS Energy's responsibility to ensure that all persons on the Project including sub-contractors and their employees are notified on their need to comply with the relevant environmental requirements. As a minimum, sub-contractors and their employees will be required to comply in full of this CEMP.

All sub-contractor personnel are considered equivalent to the construction team personnel in all aspects of environmental management and control, and their responsibilities in this respect mirrors those of the construction team personnel.

Sub-contractors working on the Project will be required to:

- Observe sub-contract and statutory requirements relating to environmental protection and other environmental legislation and to follow instructions issued by the Project Manager and supervisory personnel;
- Nominate Site representatives to liaise with the construction team with respect to, and take responsibility for, environmental requirements for the Site activities;
- Adhere to the Site management system as it applies to their operations on the Site;
- Co-operate fully with Site emergency incident procedures and consultative arrangements; and
- Follow procedures incorporated in this CEMP.

The Site Supervisor will ensure that the work of sub-contractors is monitored through the Site inspection process. Observations will be made by relevant personnel to assess the effectiveness of the environmental protection measures being used on site by the sub-contractor and to determine compliance with the requirements of the CEMP.

5.3 Environmental Control Measures and Procedures

5.3.1 General Approach

The timing of installation of control measures will be critical to ensuring that environmental obligations are met within the required timeframe and that controls are effective in achieving their purpose.

Control measures and safeguards to minimise and manage environmental risks identified in Table 4.2 are detailed in Table 5.1 below. A program of routine maintenance will be conducted on environmental controls.

Daily inspections of work areas will be undertaken by the Site Supervisor. These inspections will provide a means for identifying maintenance requirements before they reach a critical stage.

Table 5.1 Control Measures and Safeguards to Manage and Minimise Environmental Risks

Ref. No	Control Measures and Safeguards	Responsibility for Co-ordination	Timing/Frequency
1	<p>Contaminated soils are not expected be encountered during excavation works. However it is possible that unexpected finds such as buried waste, odorous or visually discoloured soil may be encountered. This could be in areas of the site such as the car park, or if the landfill cap is inadvertently breached.</p> <p>If any unexpected find is encountered, work in the area should stop immediately and the Site Supervisor consulted on how the find should be assessed and managed.</p>	Site Supervisor	Construction – if encountered
2	<p>Should there be excess soil that is proposed to be disposed of off-site it must first be categorised and disposed of to a suitably licensed facility if it found to be contaminated. If it is found to be fill material, it can only be transported to a lawful place that is able to accept such fill material.</p> <p>In order to avoid the incorrect disposal of soils from site as “clean material” (Fill Material as defined by EPA Publication 1828.2) or contaminated soil of a lesser category, soils will either be placed into banded stockpiles pending sampling, analysis and categorisation, or be excavated and loaded directly into appropriately licensed trucks for transport to suitably licensed disposal facilities, in accordance with Schedules 5, 6 and 7 of the <i>Environment Protection Regulations 2021</i>. This process, including methods for reliably identifying the differing categories of contaminated soil, will be undertaken in accordance with a Soil Management Plan developed once the results of the <i>in-situ</i> soil investigations are available, and under the supervision of the Site Supervisor.</p> <p>No soil is to be transported from site for disposal without classification and prior approval by the Site Supervisor. Soil, including Fill Material can only be taken to a ‘lawful place’ with the appropriate waste code.</p>	Site Supervisor	Construction – if encountered

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Ref. No	Control Measures and Safeguards	Responsibility for Co-ordination	Timing/Frequency
3	<p>Prior to construction, identify appropriate locations for stockpiles of soil (if any) away from site boundaries, if possible, especially if adjoining properties are occupied or used by the general public (e.g. parks and footpaths), and not located</p> <ul style="list-style-type: none"> – adjacent to drainage/creek lines – in low lying areas subject to inundation (flooding) or areas subject to excessive surface water run-off – near drains and sumps in hardstand areas. <p>Depending on how long material/s will be held in stockpile/s consideration should be given to covering the stockpile/s, storing soil in skips or immediately transporting excavated soils to an approved commercial storage facility for classification and subsequent reuse/disposal. The benefits of these options include reduced wind generated dust, a reduction in odours, reduced surface water run-off and cleaner surface water run-off.</p>	Site Supervisor	Construction
4	Establish appropriate sediment and erosion controls on-site (see Section 5.3.2 below for further information).	Project Coordinator	Pre-construction and Construction
5	<p>Prior to commencing work on site all personnel will undergo a site-specific induction which will include environmental aspects associated with the project and relevant mitigation measures to be implemented on site.</p> <p>All inductions shall include reference to the buried landfill cap, the importance of not damaging it and the response process should it be damaged.</p>	Site Supervisor	Pre-construction
6	It is imperative that the engineered landfill cap not be damaged or breached. The measures and safeguards to be implemented during all sub-surface works are detailed in Section 5.3.3.	Site Supervisor	Pre-construction and Construction
7	Regularly during construction activities and before and after significant rain events (>10 mm in 24 hours) inspect and maintain run-off sedimentation controls that are a part of the project works to ensure they are operational and undertake maintenance repair works as required. If it is noticed that pre-existing or downstream facilities are not operational or require maintenance, then the Site Supervisor should be informed and the information passed on to the Council.	Site Supervisor	Construction
8	Records regarding functionality of run-off sediment control devices will be kept, including details of rainfall events, use of any flocculants, discharge, sediment removal and dewatering	Site Supervisor	Construction

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Ref. No	Control Measures and Safeguards	Responsibility for Co-ordination	Timing/Frequency
9	Regularly update run-off control plans when construction activities change and/or new areas are exposed and/or when current plans are deemed inadequate.	Project Manager	Construction
10	Construction machinery and equipment will be refuelled, cleaned and serviced in designated locations or where appropriate measures including suitable bunding have been installed to ensure that any spills or leaks are adequately contained and remediated.	Site Supervisor	Construction
11	Specified personnel will be provided with spill management and emergency response training including the location and application of spill kits and associated remediation products.	Site Supervisor	Construction
12	Only fill material that meets the physical and chemical requirements of "Fill Material" (as defined by the EPA Publication 1828.2 – <i>Waste disposal categories – characteristics and thresholds</i> , March 2021) can be imported onto the site for backfilling or site levelling purposes. The supplier of the material is to provide certification that material is chemically and aesthetically suitable and not contaminated prior to acceptance by the Site Supervisor. Records of all imported material shall be maintained on site and made available to the Site Supervisor for review prior to delivery of the material to site. All soils intended for importation on-site and reuse onsite must firstly be approved by the Site Supervisor	Project Manager Site Supervisor	Construction
13	Construction activities will be undertaken in a manner which minimises the generation of fugitive dust on site. This may require utilising water sprays for dust suppression, restricting vehicle access and modifying construction activities during high wind periods, and covering vehicle loads prior to leaving site.	Site Supervisor	Pre-Construction and Construction
14	Adequate controls will be implemented on site to minimise the potential of dirt and mud tracking onto public roads. Regular inspections of public roads adjacent to the construction works will be undertaken (especially during wet weather conditions). Any tracked sediment will be removed from public roads where possible and effectiveness of mitigation controls will be reassessed.	Site Supervisor	Pre-Construction and Construction
15	Construction plant and equipment will be maintained and operated in a manner that minimises smoke emissions and fumes into the atmosphere. This includes switching off plant and equipment when not in use and undertaking regular maintenance services.	Site Supervisor	Pre-Construction and Construction

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Ref. No	Control Measures and Safeguards	Responsibility for Co-ordination	Timing/Frequency
16	Construction activities will occur in a manner which minimises the potential for noise and vibration impacts on sensitive receptors, adjacent buildings, heritage structures etc. This includes operating during approved construction hours, turning off machinery and equipment when not in use, minimising reversing and horn signals, ensuring plant and equipment are operated and maintained in a satisfactory manner and abiding by proximity limits.	Site Supervisor	Pre-Construction and Construction
17	Fuels, chemicals and wastes should be stored and dispensed in banded containers or sealed, banded areas where leaks or spills cannot contaminate soil or reach surface waters.	Site Supervisor	Pre-Construction and Construction
17	Appropriate waste management and recycling strategies will be established on site to manage wastes generated as a part of the construction works. The waste management strategy should aim to achieve sustainable waste management by applying the waste management hierarchy consistently with the principles of ecologically sustainable development.	Project Manager Site Supervisor	Pre-Construction and Construction
	No soil is to be transported from site for disposal without classification and prior approval by the Site Supervisor.		
18	Where possible, wastes will be segregated into recyclable components.	Site Supervisor	Construction
19	All construction plant will be equipped with certified fire extinguishers	Site Supervisor	Construction
20	A number of specific procedures and safeguards have been established to ensure that the landfill is not damaged, and that any inadvertent damage is recognised and repaired.	Site Supervisor	Construction and Maintenance
	Please refer to Section 5.3.3 below for the procedure.		

5.3.2 Erosion and Sediment Control

Given the importance of preventing erosion of the soils above the landfill cap, and of preventing sediments from entering surface waters, a project specific document has been prepared by Fyfe. It is entitled *Nillumbik Solar Farm – Solar Panel Installation: Drainage and Stormwater Plan, 290 – 304 Yan Yean Road, Plenty, Victoria* (Drainage and Stormwater Plan).

Key management tasks specified in the Drainage and Stormwater Plan include:

- Establishing sediment controls around any areas of disturbance and significant traffic movement (entry/egress points);
- Protecting existing drainage paths from sediment loadings using sediment fences;
- Regular inspection of these measures; and
- Reinstatement to the original conditions at the completion of construction.

The Drainage and Stormwater Plan should be referred to for the complete listing of requirements.

5.3.3 Protection of the Engineered Landfill Cap

The engineering design of the solar farm has been tailored to the specific requirements and constraints imposed by the site being on a landfill cap. Hence some traditional construction techniques are not appropriate, or must be modified for this project. Specifically, there can be no deep excavations that could approach or damage the engineered landfill cap. This cap (the upper-most layer of which is a geomembrane fabric) is at a depth of approximately 750 mm or more below the ground surface.

Earthworks will be limited to the excavation of footing holes for the site perimeter fence, the fence around the high voltage compound, and the underground power line extension. A small length of this powerline may be installed in the landfill cap, with the majority being to the west of the landfill – to the connection point on Yan Yean Road. The electrical compound will be built up slightly from existing levels and any excavations there will be shallow.

Prior to excavation works, LMS Energy will undertake non-destructive digging to confirm the depth to the geotextile layer. If there is insufficient depth for the subsequent footings/trench then either:

- The footings will be redesigned to be shallower (but broader); and/or
- The ground will first be built up with the addition of imported soil.

If any works inadvertently breach the engineered landfill cap all works in the area should cease immediately and the Project Manager consulted. The Project Manager will notify Council and will identify what (if any) further investigation or repair works are required. Construction works should not resume until authorised by the Project Manager.

At the completion of the works, or a stage of the works, a soil vapour survey must be performed. The soil vapour survey would be performed in general accordance with sections 4 and 5 of the Victorian EPA publication No 1684 *Landfill gas fugitive emissions monitoring guideline*. It is that the transect method shown for a walkover survey be modified to instead sample at locations where the ground surface was penetrated. The survey is conducted using a hand-held landfill gas monitor¹ and will involve sampling the air at ground level within 50 mm of every penetration into the ground. This would include on all sides of every fence post footing and all pits and electrical compound footings and horizontal borings, and any other ground penetrations. The results should be recorded on a site plan showing the date and locations tested, with the following measurement data recorded separately:

- Instrument make, model and calibration certificate;
- Weather conditions;
- Barometric pressure, and if it is rising or falling;
- Operator;

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¹ Landfill gas monitors can be rented on a daily or weekly basis from specialist environmental monitoring equipment suppliers and come pre-calibrated with a calibration certificate and user instructions.

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- Stabilised landfill gas meter readings at each location:
 - Methane, carbon dioxide, oxygen and balance (% v/v or ppm).

A background measurement should also be taken of the outdoor ambient air at a location not on the landfill, and 20 or more metres from all potential gas sources – including vehicles, machinery and chemicals and wastes. Measured methane levels in ambient air should be 0 % v/v and 0 ppm.

Methane concentrations measured at the ground penetrations should be compared against the Action Levels listed in Table 6.4 the EPA publication 788.3 *Siting, design, operation and rehabilitation of landfill*. That document shows that concentrations greater than 100 ppm may trigger the need for action. It is recommended that LMS Energy seek expert advice should any methane measurements of 100 ppm or greater be measured.

5.3.4 Safe Work Method Statements (SWMSs)

Safe Work Method Statements (SWMS) will be prepared for specific activities to ensure sound environmental practices are implemented and to manage and minimise the risk of environmental incidents or system failures. SWMS will be developed jointly by the Project Manager and LMS Safety Group, with the contents of the SWMS tool boxed to all relevant parties prior to the activity being undertaken on site.

5.3.5 Workplace Construction Plan (WPP)

A Workplace Construction Plan (WPP), which will include a health and safety risk assessment for the planned construction works will be prepared by LMS for the site.

The WPP shall be prepared in accordance with LMS Energy’s systems and relevant legislation and include, but not be limited to:

- naming key personnel responsible for site safety
- describing the risks associated with each operation conducted
- confirming that on-site personnel are adequately trained to perform their job responsibilities
- describing the protective clothing and equipment (such as gloves, boots and hard hats) to be worn by personnel during various Site operations
- describing the actions to be taken to mitigate existing hazards to make the work environment less hazardous
- describing the type of emergency equipment to be available during the works
- setting out a contingency plan for safe and effective response to emergencies. The plan would include telephone numbers for emergency services and a map showing the route to the closest hospital.

5.3.6 Traffic Control

All traffic to and from the site will be through the main site entry point. Given the abundant space available, all parking for site workers and visitors will be provided on-site in locations that does not allow vehicles to come into contact with site plant and equipment and excavated material.

The site is well served by the local road network and the traffic-light controlled entry to the Nillumbik Recycling Centre, and no oversized transport is required for the project

5.3.7 Complaints

As the project is within the boundaries of the Nillumbik Recycling Centre, The Nillumbik Council will be advertised as the party to contact regarding any complaints they receive in relation to the construction of the solar farm. LMS Energy will provide Nillumbik Council with the contact details of the LMS Officer who should be notified of any complaints. On receipt of any complaints. LMS will address and respond as detailed in Section 7.2.1 below.

5.4 Contingency Measures

Any environmental or health and safety issues that arise should be reported immediately to the Project Manager so that specific management measures can be implemented. These may include for example any of the following in locations that were not anticipated or planned for:

- the uncovering of possible or suspected asbestos-containing materials (ACM);
- areas of odorous or stained soils indicating potential hydrocarbon contamination; and
- buried wastes, waste containers and/or pipework; and
- fill material that contains ash, brick inclusions, tars or other non-natural items; and
- possible or suspected acid sulphate soil.

Should any of the above items be encountered or observations made, then work in that area should stop immediately, and not resumed be until the all-clear is given by the Project Manager. This does **not** apply to items or observations in areas where the items or objects were known or expected to be present - it only applies to locations where the findings were **not** anticipated.

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6. TRAINING, AWARENESS AND COMPETENCE

6.1 General

Construction works to be undertaken will comply with applicable environmental regulatory and legislative requirements. The following provides a summary of the general requirements for the proposed works.

Three main forms of training will be provided on site:

- site induction
- environmental management training
- “toolbox” training.

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6.2 Site Induction (Environment & OHS)

Prior to working on site, all personnel and sub-contractors will undertake an induction incorporating Environmental and OHS requirements. The induction will address a range of environmental awareness issues including, but not limited to:

- the CEMP (purpose, objectives, nature of site contamination, CMS & key issues)
- legal requirements including due diligence, duty of care and potential consequences of infringements
- environmental responsibilities under State and Federal legislation
- conditions of licences, permits and approvals
- significant environmental issues and areas of the Site including identification of boundaries for location of refuse bins, washing, refuelling and maintenance of vehicles, plant and equipment
- incident management and emergency plans
- reporting process for environmental harm/ incidents

6.3 “Toolbox Training”

“Toolbox” training will help to ensure that relevant information is communicated to the workforce and that feedback can be provided on issues of interest or concern. “Toolbox” training will generally be prepared and delivered by the Site Supervisor. These toolboxes can be integrated into Safe Work Method Statements (SWMSs) delivered to personnel prior to commencing specific high-risk activities or can be used as a stand-alone training tool.

“Toolbox” training topics may include:

- efficient use of plant and materials;
- waste management, minimisation and recycling;
- noise and vibration minimisation;
- dust control;
- wastewater control;
- management of contaminated soil;
- installation and maintenance of erosion and sediment control devices;
- storm management procedures; and
- other general site environmental issues.

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7. INCIDENT AND EMERGENCY PLANNING, PREPAREDNESS AND RESPONSE

7.1 Emergency Planning

All site personnel and contractors shall be made aware of the Emergency Response Plan (ERP) and its location during the induction process. For the construction period LMS personnel and approved contractors will fall under the LMS ERP.

Emergency Preparedness	Details / Location
Emergency Response Plan	LMS / LMS Site office
First Aid:	First Aid kits available in company vehicles and site office. First Aid trained personnel
Emergency Alarm:	To be activated by LMS Energy under the ERP and action
Assembly Muster Point	To be activated by LMS Energy under the ERP and action
Fire Fighting Plan and Equipment	To be activated by LMS Energy under the ERP and action
Safety Shower & Eye Wash	Must be present and operational.
Emergency Route	Must be clear at ALL times

7.2 Notification

In the event that an incident has caused, is causing, or is likely to cause material or serious environmental harm, whether the harm occurs on or off the site, the Project Manager and Site Supervisor will follow LMS's standard Incident Reporting Procedure.

In addition to notifying key government agencies LMS Energy will ensure the EPA and any other responsible agencies are kept well informed.

Various emergency contacts are listed in Table 7.1, below.

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Table 7.1 Emergency Contacts List

Organisation	Name	Number(s)
LMS, Chief Project Officer	Darren Matthews	0439 152 906
LMS, Group Manager Projects	Luke Williams	0409 015 709
LMS, Group Manager Engineering	Noel Johnston	0400 658 460
LMS, Group Manager Health & Safety	Damien Manning	0437 290 499
LMS, Project Manager	Fred Moore	0429 107 427
LMS, Construction Manager	Steve Falzon	0438 892 102
LMS, Site Supervisor	Matthew Bradford	0437 554 181
LMS, Mechanical Engineer	Ryan Dreyer	0429 135 383
LMS, Electrical Engineer	David Bosnakis	0437 271 479
EPA/Emergency (After Hours)	Pollution Line	1300 372 842 000
Victoria Police	Emergency	000
	Non-emergency	131 444
Country Fire Authority		000
Ambulance Services		000
Poisons Information		131 126

Organisation	Name	Number(s)
Nearest hospital emergency centre	Northern Hospital Epping 185 Cooper St, Epping VIC 3076	(03) 8405 8000
Solid waste collection, spill clean up	Cleanaway	1800 774 557
Liquid waste collection and disposal	Bartletts Environmental	(03) 5248 7955

A map showing the route to the nearest hospital emergency department is provided as **Figure 7.1** (below).

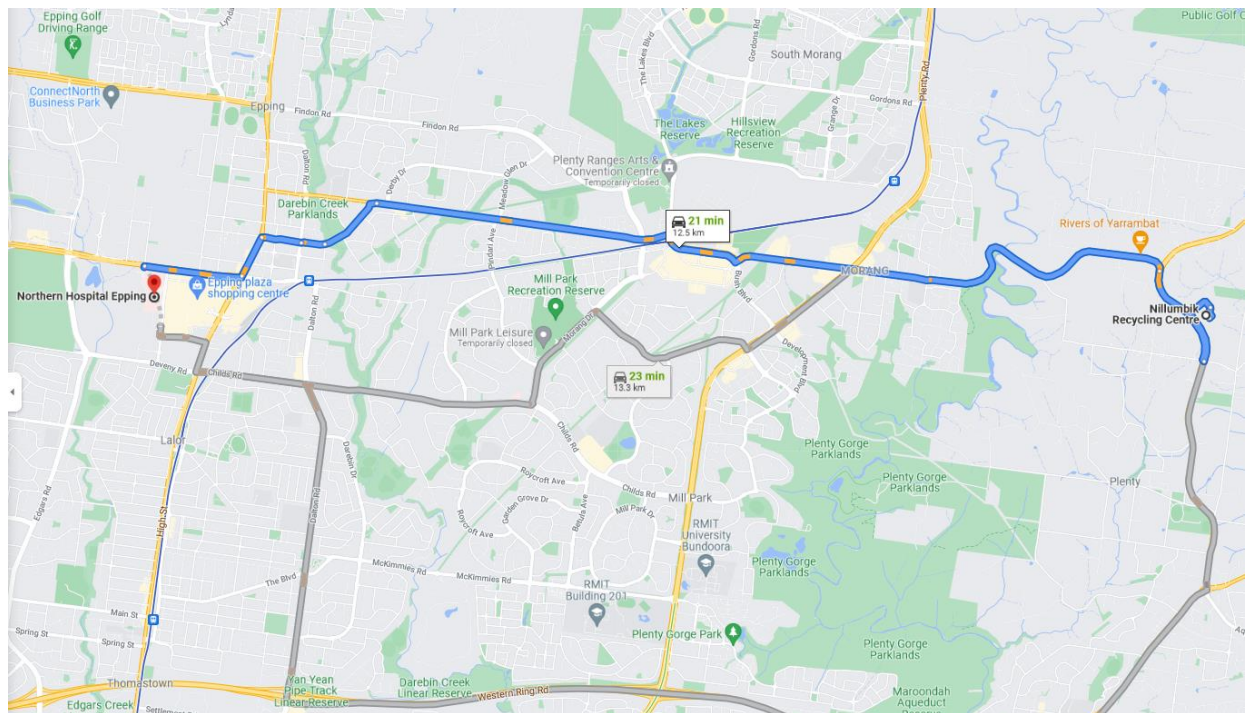


Figure 7.1 Medical emergency route – Northern Hospital Epping (03) 8405 8000

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8. REVIEW AND IMPROVEMENT OF CEMP

The Project Manager will review the CEMP and its operation and implementation from time to time. Between the reviews, a register of issues will be maintained to ensure that any issue raised by internal and external personnel associated with the project are recorded for later inclusion into the CEMP. The purpose of the review is to ensure that the system is meeting the requirements of the standards, policies and objectives of the project and, if not, to amend the CEMP to facilitate continuous improvement.

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9. REFERENCES

- EPA Publication 788.3 *Siting, design, operation and rehabilitation of landfills*, dated August 2015.
- EPA Publication 1684 *Landfill gas fugitive emissions monitoring guideline*, dated February 2018.

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10. LIMITATIONS

Fyfe has prepared this CEMP for the use of LMS Energy, in accordance with the usual care and thoroughness of the consulting profession. It is based on generally accepted practices and standards at the time it was prepared. No other warranty, expressed or implied, is made as to the professional advice included in this report.

This CEMP is based on the information provided by LMS Energy and reviewed at the time of preparation. Fyfe disclaims responsibility for any changes that may have occurred after this time. This CEMP should be read in full. At the time of writing the CEMP Fyfe was not engaged as the EMR. No responsibility is accepted for use of any part of this CEMP in any other context or for any other purpose or by third parties. This CEMP does not purport to give legal advice. Legal advice can only be given by qualified legal practitioners.

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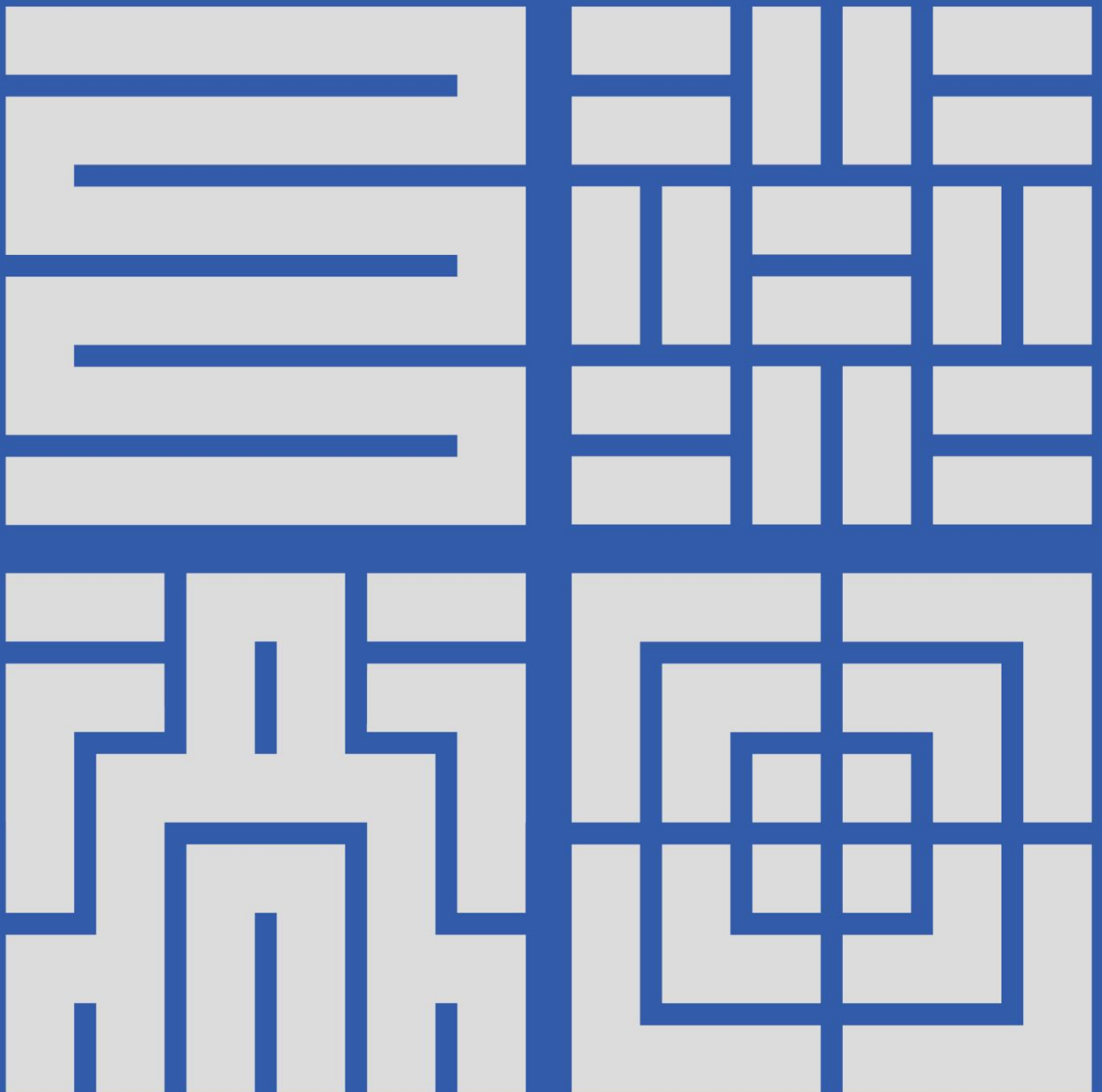
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NILLUMBIK SOLAR FARM – SOLAR PANEL INSTALLATION DRAINAGE AND STORMWATER PLAN

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LMS Energy Pty Ltd | 290-304 Yan Yean Road, Plenty, Victoria
67345-1-DSP V2 | 11 March 2022



NILLUMBIK SOLAR FARM – SOLAR PANEL INSTALLATION DRAINAGE AND STORMWATER PLAN

290 - 304 Yan Yean Road, Plenty, Victoria
Rev. V2

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Approved by: Glenn Thiele 	Environmental Manager, Vic., Fyfe Pty Ltd	Date: 11 March, 2022
Client acceptance by: Fiona Lambert	Project Development & Compliance Group Manager, LMS Energy Pty Ltd	Date: 11 March, 2022

Revision History

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V1	Issued	1/10/2021	EMM	GAT	GAT
V2	Issued	11/3/2022	GAT	GAT	GAT

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1. INTRODUCTION

This Drainage and Stormwater Plan (DSP) has been developed for the proposed works associated with the installation of the solar panels and associated infrastructure (cabling, security, parking and high voltage compound) at the Nillumbik Solar Farm. The associated set of construction plans (30032-GA-101_rev3, 30032-GA-102_revD, 30082-EA-118-1_RevB, 3002-GA-111 Rev A) have been utilised to detail the required temporary and permanent erosion, drainage and sediment controls that are required in all stages of construction.

This plan has been developed in accordance with the International Erosion Control Association, Best Practice Erosion and Sediment Control Guideline (IECA, 2008).

It is assumed that there may be differences as construction progresses between assumed conditions and construction processes that are outlined in this report, which has been prepared as part of the pre-construction approval process, and those that occur on the ground. As such, this plan should be treated as a live document, with regular reviews completed and all modifications to the plan noted on the affronting revision table. This may require consultation with the author of this plan.

1.1 Objectives and Targets

This Drainage and Stormwater Plan has been developed in accordance with the following guidelines and technical standards:

- *Best Practice Erosion and Sediment Control* (IECA, 2008);
- *Reducing Stormwater Pollution from Construction Sites* (Victorian EPA Publication 981, 2005); and
- *Code of Practice for the building and construction industry* (Environmental Protection Agency, SA, 1999).

The objective of this DSP is to minimise erosion, sediment discharge and impacts upon the environmental values of the receiving waters throughout the construction and post-construction stages, and to address the soil physio-chemical properties that may limit the success of the rehabilitation of project disturbance footprint.

To achieve compliance with the project environmental approval, the following targets are required to be met through compliance with this DSP:

Fine Sediment (<0.02mm)	Minimise mobilisation of fines from the site
Coarse Sediment (>0.02mm)	Retain all coarse sediment on site

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2. SITE CHARACTERISTICS

2.1 Project Details

The proposal includes the operation of an array of fixed, tilted solar panels and associated inverters within a high voltage compound with a total capacity of approximately 1.2 MW. Associated fencing, landscaping, internal driveways, car parking, and water tanks are included as part of the scope of works for this project. An underground powerline extension from the high voltage compound will travel to the Yan Yeau Road site boundary. The proposal also includes development of the adjacent road reserve containing Yan Yeau Road for a utility installation, being the extent of the underground powerline extension extending out into the road reserve to a new 22 kV recloser pole and connecting into the existing 22 kV overhead pole sited 15 m further north along the road reserve.

The inverters will only be operating during daylight hours. The site will be an unmanned facility. The number of vehicles and personnel accessing the site will therefore be limited to occasional maintenance staff.

The site will be accessed using the existing access point from Yan Yeau Road and internal driveway. A designated car parking area with four (4) car parking spaces is provided at the end of the formal driveway and turn around area. An access path is provided around the perimeter of the solar array area and high voltage compound area.

This DSP has not assessed the requirements for this construction of the carpark, extension of the underground powerline or high voltage compound, as the earthworks design for these works had not been completed at the time of the current publication. Once the design is complete, this DSP should be updated to incorporate these works.

2.2 Topography, Vegetation, Soil Description & Pre-Development Drainage Pattern

The site is a pre-existing landfill facility that has recently been decommissioned and completed a capping process as part of the site rehabilitation. The capping of the landfill included the construction of permanent stormwater management of the site, inclusive of installation of drainage structures, as shown in drawings 1 – 17 (147615003_004-S_Rev1) as produced by Golder Associates. The final surface profile is as shown in the as constructed *drawings PLENTY Phase 2&3 Plenty As Built Topsoil Swales Combo 25-04-21 - Ver 2, PLENTY Phase1 Top of Topsoil (ver03) and PLENTY Phase1&4 surface drain sections (ver01)-Sheets 1 – 3.*

2.3 Surrounding Area

The previous land use was for a council operated landfill and is neighboured by the Nillumbik Recycling & Recovery Centre to the south, bushland to the north and west and some residential housing to the south-east / east.

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3. IDENTIFICATION OF RISKS

3.1 Climate

Average annual rainfall as recorded by the Bureau of Meteorology (BoM) station located at Viewbank is 660 mm. There is minor seasonality with the highest rainfall period between November and December.

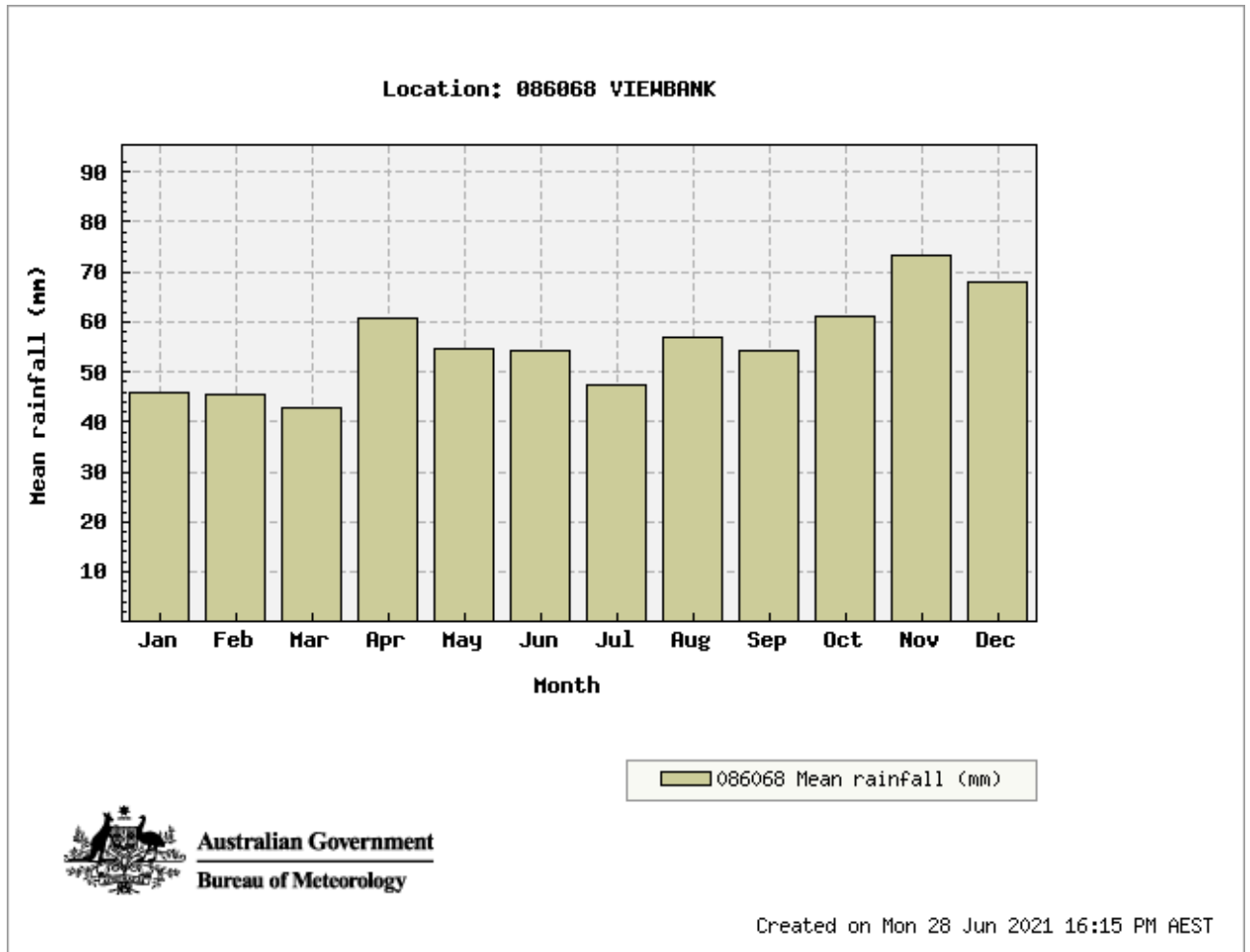


Figure 3-1 - Average Monthly Rainfall and Average Daily Evaporation

The highest mean temperature occurs between December and February with maximum average temperature of 28° recorded in the month of January.

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NILLUMBIK SOLAR FARM – SOLAR PANEL INSTALLATION
290 SOUTH COAST ROAD, ALLIANCE, VICTORIA
3177



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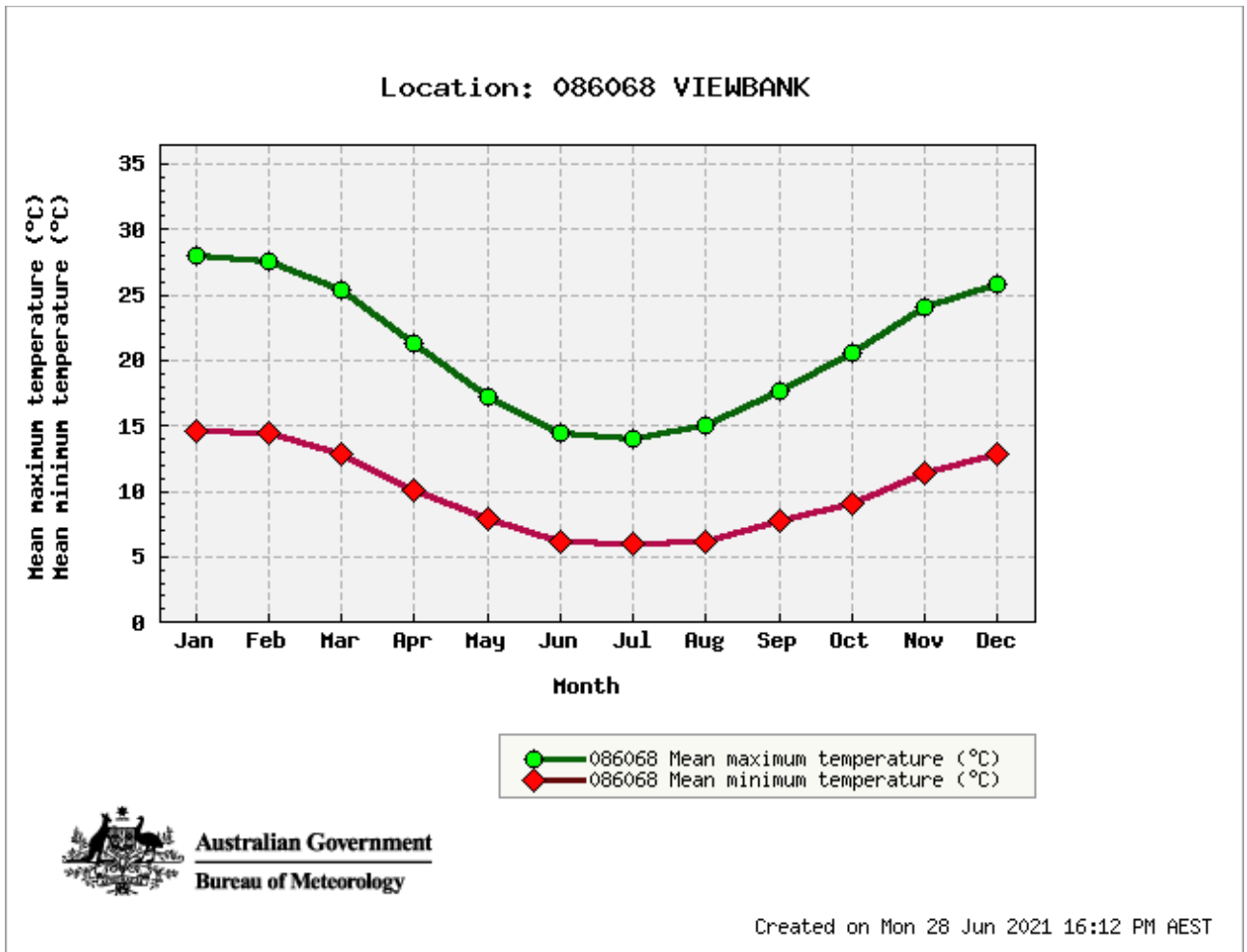


Figure 3-2 - Average Monthly Minimum and Maximum Temperature

3.1.1 Size and nature of contributing catchment

The landfill itself sits above the natural ground level (between 7.5 m – 11.03 m above NGL). The final profile of the capped landfill falls to the north-west, south-east west and north-east. Its contributing catchment is constrained within the landfill profile as such (all surrounding catchments are directed around the site) and has a surface area of approximately 18.7 ha.

3.2 Erosion Risk Assessment

Erosion risk assessment is utilised as a preliminary indicator assessment tool to determine the level and type of sediment and erosion controls that should be applied to a project. The effectiveness of these controls should be re-evaluated post installation and reviewed post any runoff producing rainfall event, with any changes to controls recorded in revisions of this plan.

Given the pre-existing council owned and maintained infrastructure present, the erosion management responsibilities will be shared between the two parties:

- LMS Energy will be responsible for maintenance works directly related to their infrastructure – such as where surface water flows may concentrate because of the presence of LMS Energy’s

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infrastructure – such as flow diversions around panel structure footings or the high voltage compound.

- Council will remain responsible for pre-existing features such as the diversion bunds on the landfill cap and the perimeter drainage lines and any associated sediment and flow control infrastructure.

3.2.1 Methodology

The methodology adopted by this plan is the quantitative erosion risk assessment tool, the Revised Universal Soil Loss Equation (RUSLE). RUSLE aims to predict the potential soil loss caused by the proposed disturbance works based upon a set of parameters that have been chosen specific for the site, using the below formula:

$$A = K \times R \times LS \times P \times C$$

where:

- A is the predicted soil loss measured as tonnes per hectare per year (t/ha/yr)
- K is the soil erodibility factor
- R is the rainfall erosivity factor
- LS is the topographical factor derived from slope length and slope gradient
- P is the erosion control practice factor
- C is the cover and management factor.

3.2.2 Soil Erodibility (K)

The soil erodibility is a numeric representation of the ability of the soil to resist the erosive energy of rain. The capping material utilised on the landfill is reworked natural alluvial materials that were present at the site which are primarily silty clays. A K-factor of 0.025 has been adopted.

3.2.3 Rainfall Erosivity

The rainfall erosivity factor (R factor) is a measure of the ability of the rain to cause erosion. An R-factor has been calculated for the project site as a R-factor value was updated in Table E1 of IECA, 2008 utilising the equation:

$$R = 164.74 (1.1177)^S S^{0.6444}$$

where *S* is the 2 year ARI, 6 hour rainfall event (mm).

Utilising the Bureau of Meteorology website for determining IFD (<http://www.bom.gov.au/water/designRainfalls/ifd-arr87/index.shtml>), it has been determined that for the project site (coordinates: 37.6625° S, 145.1375° E):

$$^2I_6 = 5.11, \text{ therefore}$$

$$R = 832.24\text{mm}$$

3.2.4 Slope Length and Steepness

Slope length and slope gradient have substantial effects of soil erosion by water. The factor has been evaluated utilising Table E3 (IECA, 2008) based upon the slope gradient - slope length factor that represented the worst case scenario. Where this project is later discussed in terms of staging, separate calculations based upon each stage have been calculated to reflect the individual stages.

For the overall project a slope gradient of 4.7% over 220m slope length has produced an LS factor = 2.00 has been adopted.

3.2.5 Site Management

The C & P factors represent management of the site with respect to reducing soil loss. The C-factor measures the combined effect of all the interrelated cover and management variables. For this erosion risk assessment that is being assessed post capping – and the assumed impact of installation of solar farm infrastructure which is predominately able to be achieved without the further disturbance to the ground surface, the worst-case scenario of newly established grass cover has been adopted, i.e. C-factor = 0.07.

The P-factor measures the combined effect of all support practices and management variables. For construction sites it represents the roughening or smoothing of the soil surface by machinery. Therefore, to represent the construction period (again based on existing post landfill capping, minimal ground disturbance caused by installation of solar farm infrastructure), a P-value of 0.9 will be adopted to reflect a track walked up and down slope finished surface.

3.3 Soil Loss Prediction Results

The calculations for the overall project site is:

$$A = K \times R \times LS \times P \times C$$

$$A = 0.025 \times 832.24 \times 2.00 \times 0.07 \times 0.9$$

$$A = 2.62t/ha/yr$$

According to Table 4.4.3 (IECA, 2008 Section 4.4), this estimated soil loss is rated to be a Low risk erosion rating. In terms of selecting appropriate sediment controls, Table 4.5.1 (IECA, 2008 Section 4.5) a soil loss of less than 75t/ha/yr on a site where a disturbance footprint of greater than 2500m² requires Type 3 controls to be utilised as shown in Table 3-1 below.

Table 3-1 - Minimum Sediment Control Standards Based on Soil Loss (Table 4.4.7 of IECA 2008)

Soil Loss Rate (t/ha/yr)	Sediment Control Technique	Default Sediment Control Device
0 to 75	Type 3	Sediment fence, sediment trap
75 to 150	Type 2	Filter tube dam, rock filter dam, sediment trench, sediment weir, compost mulch berm
>150	Type 1	Sediment Basin (sized in accordance with design standard)

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4. DRAINAGE, EROSION AND SEDIMENT CONTROLS

4.1 Proposed drainage measures

No additional drainage measures are proposed as part of the scope of works to be completed in the installation of the solar farm infrastructure.

4.2 Proposed erosion measures

It is not anticipated that significant disturbance will occur during construction as there is no cut-and-fill proposed – rather there will be placement of fill where required to create level areas. No specific erosion controls will be required for such works. Where existing stabilised areas are disturbed / impacted and/or revegetation measures are impacted they are to be repaired / reinstated as previously completed. Any disturbance will be limited to that area where the solar panels are to be installed (remainder of site has previously been rehabilitated by others).

Decommissioning activities will involve the removal of infrastructure and associated fill that had been placed during construction. The scale of the works will therefore be comparable to the construction phase activities. The major difference will be that there will be areas of bare soil following decommissioning that will present a slightly elevated erosion risk until the ground cover is re-established. The standard revegetation procedures employed to re-grass the area will be sufficient to prevent any appreciable erosion of the soil. This should include a soil needs assessment to determine any fertiliser, soil ameliorant and soil binder requirements prior to grass seeding sufficient to establish ground cover.

Where a reassessment of existing measures is required, it should be reassessed by a suitably qualified person as per Table 4-1 below. (As adopted from Table 4.4.13 – IECA 2008 Section 4.4):

Table 4-1 - Application of erosion control measures

Flat Land (flatter than 1 in 10)	Mild Slopes (1 in 10 to 1 in 4)	Steep Slopes (steeper than 1 in 4)
Erosion Controls Blankets	Bonded Fibre Matrix	Bonded Fibre Matrix
Gravelling	Compost Blankets	Cellular Confinement Systems
Mulching	Erosion Control Blankets, mats &	Compost Blankets
Revegetation	Mesh	Erosion Control Blankets, Mats &
Rock Mulching	Mulching well anchored	Mesh
Soil Binder	Revegetation	Revegetation
Turfing	Rock Mulching	Rock Armouring
	Turfing	Turfing

4.3 Proposed sediment measures

Prior to conducting the excavation earthworks for the export powerline, sediment controls shall be established around any areas of disturbance. The existing drainage paths must be protected from sediment load of the site transported from overland flow during rain events and as such must have sediment fences established above the discharge locations into the rock swales. The only other excavations to occur will be for the footings for the fence around the high voltage compound. This excavations will be so minor as to not require dedicated sediment control measures.

The controls for the site establishment have been included in Appendix A.

5. CONSTRUCTION STAGING

5.1 Staging of Works

5.1.1 Early Works (Mobilisation, Site Access)

Prior to commencement of the ground disturbing works for the export power line, preparatory works must include the establishment of a stabilised site access/egress and establishment of appropriate erosion and sediment controls.

The site access must be constructed in accordance with the IECA (2008) standard drawing EXIT-04 and EXIT-05 (see Appendix B) which includes the installation of a grid to act as a 'shaker' to avoid the transport of loose soil off the construction site onto the local sealed road network.

The controls for the site establishment have been included in Appendix A.

5.1.2 Stripping

No stripping or removal of topsoil is required in the project scope of works.

5.1.3 Bulk Earthworks

No bulk earthworks are required for this scope of works.

5.1.4 Rehabilitation / Reinstatement

Rehabilitation should be undertaken in a progressive manner. It should be managed in accordance with the following principals:

- Where sediment has been deposited in existing rock swales, this is to be removed to avoid any discharge offsite;
- Any damage to the pre-existing rehabilitated surface is to be repaired as soon as is practicable, to restore the area to its pre-existing condition;
- Progressive rehabilitation of any disturbed areas will commence as soon as practicable following completion of construction activities;
- Suitable, certified topsoil will be imported where subsoils cannot be reused;
- Excess and/or unsuitable material will be disposed of appropriately offsite;
- Topsoil application will only commence following the reinstatement of subsoil and reinstatement of contour banks on slopes and compaction of subsoils to account for subsidence;
- Topsoils will be respread over watered and scarified or ripped subsoils in even layers of thickness;
- Topsoil will be compacted firmly but not excessively and left slightly rough to provide a suitable seed bed for revegetation, and must be undertaken as soon as possible post topsoil reinstatement;
- Cross ripping of topsoils must be undertaken along the embankments to encourage rainfall infiltration and minimise runoff;
- Vehicle movement will be restricted across rehabilitated areas to encourage the reestablishment of vegetation and avoid compaction of reinstated topsoils; and
- In areas where access tracks have been utilised, the landform will be reprofiled to reinstate the natural landform, where practicable, and ensure it is left in a stable condition.

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5.2 Limits of disturbance

Ground disturbance will be limited to the immediate project area, as shown in Appendix A. Ingress and egress will be limited to the established accesses, with the remaining project sites to be appropriately fenced and signed. Designated access tracks are to be established and communicated to all employees/sub-contractors at the site induction to minimise compaction.

5.3 Inspection and Test Plan (ITP)

An inspection and test plan has been developed to assist with the documentation of the required inspections, and specific aspects of the construction process are controlled. This ITP has been included in Appendix C and identifies:

- The construction activity to be monitored;
- The method of inspection or testing (including the testing standard);
- Frequency and/or timing of inspections;
- 'witness' and 'hold points' required during the construction process;
- Performance criterion/criteria;
- Responsible officer; and
- Required documentation or inspection report

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6. MAINTENANCE SCHEDULE

The following maintenance schedule is provided, to apply during construction works.

6.1 Inspections

Best practice site management requires that all ESC measures are to be inspected by the project manager (or their nominated representative) by a frequency based upon risk; i.e. at least daily when rain is occurring (where safe to traverse across the work site), within 24 hours prior to anticipated rainfall event (where predictions are >80% chance of >10 mm rain) and within 18 hours of a rainfall event of sufficient intensity and duration to cause onsite runoff (IECA, 2008 Section 7.4). These inspections should include:

6.1.1 Daily Site Inspections

Daily site inspections of the LMS Energy works areas (during periods of runoff producing rainfall only) must check:

- drainage, erosion and sediment control measures;
- occurrences of excessive sediment deposition (whether onsite or offsite); and
- all site discharge points.

6.1.2 Weekly Site Inspections

Weekly site inspections must check (even when work is not occurring):

- all drainage, erosion and sediment control measures;
- occurrences of excessive sediment deposition (whether onsite or offsite);
- occurrences of construction materials, litter or sediment placed, deposited, washed or blown from the site, including deposition by vehicular movements;
- litter and waste receptors; and
- oil, fuel and chemical storage facilities.

6.1.3 Pre-rainfall Inspections

Site inspections immediately prior to predicted runoff producing rainfall events must be performed to check:

- drainage, erosion and sediment control measures; and
- all temporary flow diversion and drainage works.

6.1.4 Post-rainfall Inspections

Site inspections immediately following runoff producing rainfall must check:

- treatment and dewatering requirements of Sediment Basins;
- sediment deposition within Sediment Basins and the need for its removal;
- all drainage, erosion and sediment control measures;
- occurrences of excessive sediment deposition (whether onsite or offsite);
- occurrences of construction materials, litter or sediment placed, deposited, washed or blown from the site; including deposition by vehicular movements; and
- occurrences of excessive erosion, sedimentation or mud generation around the site office, car park and/or material storage areas.

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6.1.5 Post Construction – Rehabilitation Review

At the conclusion of the construction phase a rehabilitation review should be undertaken to confirm:

- surface coverage of finished surfaces;
- health of recently established vegetation; and
- effectiveness of long-term drainage controls (prior to final acceptance and handover).

6.2 Audits

The model Code of Practice (IECA, 2008 – Appendix G) recommends that an audit schedule be developed and maintained.

However Fyfe considers that the scale and nature of the works are more minor than is envisaged by IEAC Appendix G, and that it will be sufficient for LMS Energy to perform the routine inspections presented in this document.

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7. REFERENCES

- *Best Practice Erosion and Sediment Control* (IECA, 2008)
- *Code of Practice for the building and construction industry* (Environmental Protection Agency, SA, 1999).
- Drawings 1 – 17 (147615003_004-S_Rev1) (Golder Associates, 2016)
- *Plenty Landfill Aftercare Management Plan* (Golder Associates, 2015)
- *PLENTY Phase1 Top of Topsoil (ver03) and PLENTY Phase1&4 surface drain sections (ver01)-Sheets 1 – 3.* (LMS Energy, 2020)
- Plenty Renewable Energy Facility Plans (Document IDs: 30032-EA-118_Rev B, 30032-GA-101_Rev 3, 30082-GA-102_Rev D, 30032-GA-107_Rev A, 3002-GA-111 Rev A) (LMS Energy, 2021)
- *Reducing Stormwater Pollution from Construction Sites* (Victorian EPA Publication 981, 2005);
- Standard Power Station Plan (Document ID: 74130-CA-001_Rev 3) (LMS Energy, 2020)

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APPENDIX A

ESC CONTROL DRAWINGS

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APPENDIX B

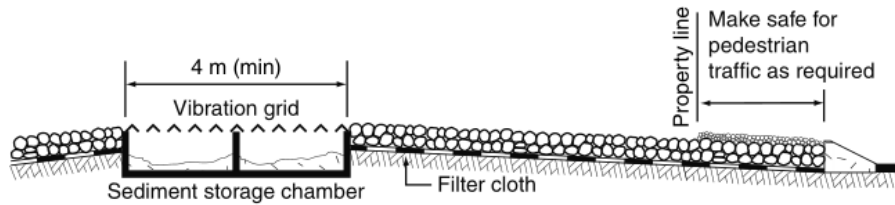
IECA FIGURES 04 AND 05

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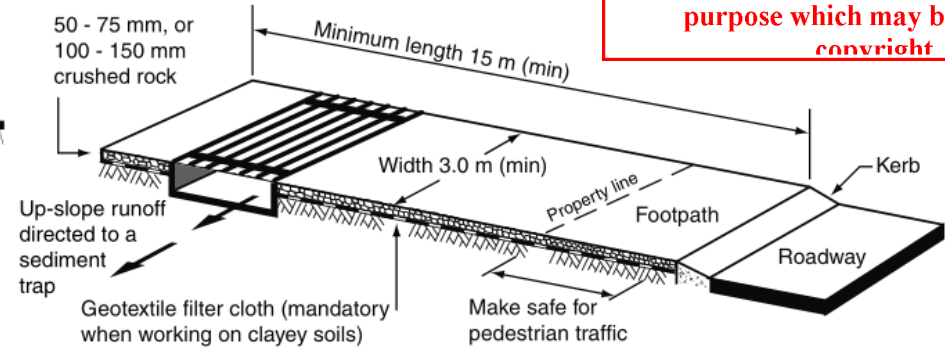
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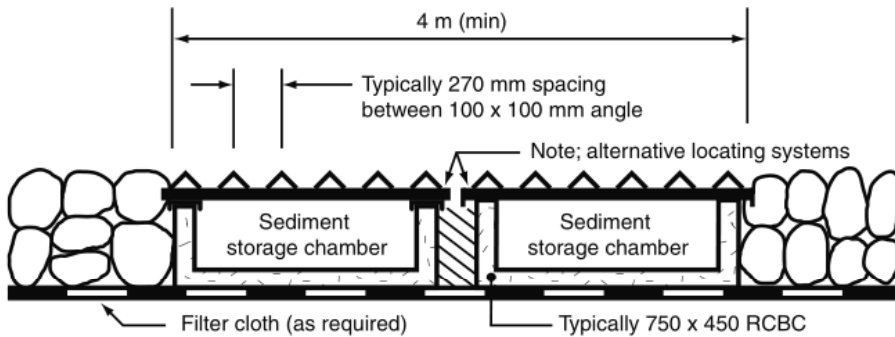
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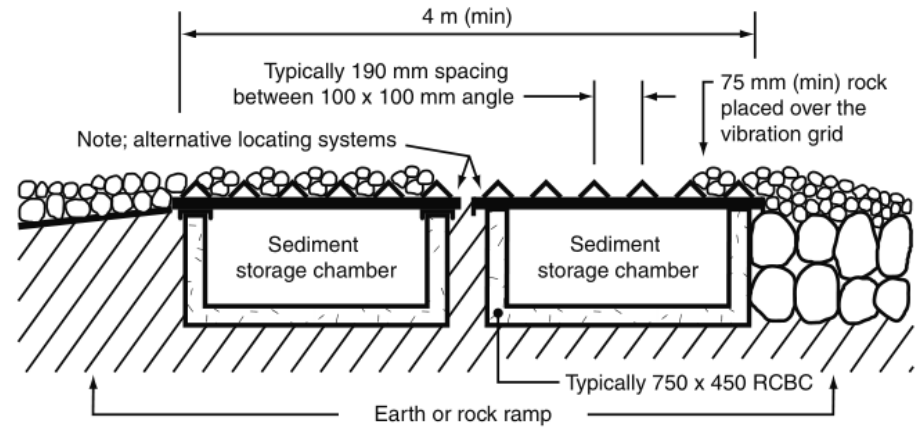
(a) Typical profile of a vibration grid



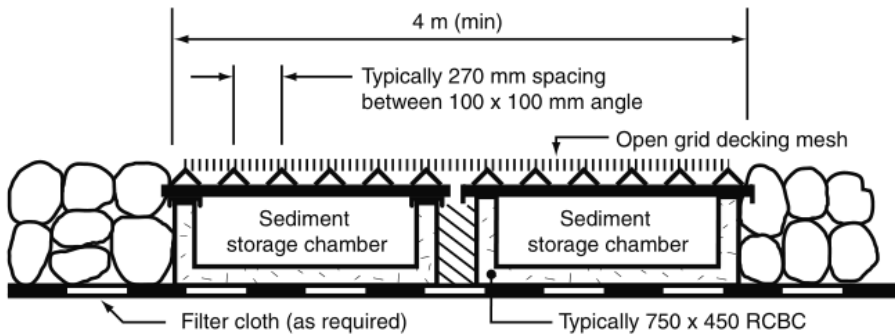
(d) Typical layout of a vibration grid



(b) Typical profile of the vibration panels



(e) Alternative, medium travel speed arrangement (concept still under development)



(c) Alternative, high travel speed arrangement (concept still under development)

Drawn: GMW	Date: Dec-09	Construction Exit - Vibration Grid	Exit-04
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MATERIALS

ROCK: WELL GRADED, HARD, ANGULAR, EROSION RESISTANT ROCK, NOMINAL DIAMETER OF 50 TO 75mm (SMALL DISTURBANCES) OR 100 TO 150mm (LARGE DISTURBANCES). ALL REASONABLE MEASURES MUST BE TAKEN TO OBTAIN ROCK OF NEAR UNIFORM SIZE.

FOOTPATH STABILISING AGGREGATE: 25 TO 50mm GRAVEL OR AGGREGATE.

GEOTEXTILE FABRIC: HEAVY-DUTY, NEEDLE-PUNCHED, NON-WOVEN FILTER CLOTH ('BIDIM' A24 OR EQUIVALENT).

INSTALLATION

1. REFER TO APPROVED PLANS FOR LOCATION AND DIMENSIONAL DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, DIMENSIONS, OR METHOD OF INSTALLATION, CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.

2. CLEAR THE LOCATION OF THE VIBRATION GRID, REMOVING STUMPS, ROOTS AND OTHER VEGETATION TO PROVIDE A FIRM FOUNDATION SO THAT THE ROCK IS NOT PRESSED INTO SOFT GROUND. CLEAR SUFFICIENT WIDTH TO ALLOW PASSAGE OF LARGE VEHICLES, BUT CLEAR ONLY THAT NECESSARY FOR THE EXIT. DO NOT CLEAR ADJACENT AREAS UNTIL THE REQUIRED EROSION AND SEDIMENT CONTROL DEVICES ARE IN PLACE.

3. GRADE THE LOCATION OF THE VIBRATION GRID SO THAT RUNOFF FROM THE UNIT WILL NOT FLOW INTO THE STREET, BUT WILL FLOW TOWARDS AN APPROPRIATE SEDIMENT-TRAPPING DEVICE.

4. ENSURE THAT THE INSTALLATION OF THE VIBRATION GRID HAS ADEQUATE SEDIMENT STORAGE VOLUME UNDER THE GRID. WHERE NECESSARY, INSTALL SUITABLE PRECAST SEDIMENT COLLECTION CHAMBERS.

5. PLACE A ROCK PAD/RAMP FORMING A MINIMUM 200mm THICK LAYER OF CLEAN, OPEN-VOID ROCK OVER THE ROADWAY BETWEEN THE VIBRATION GRID AND THE SEALED STREET TO PREVENT TYRES FROM PICKING UP MORE SOIL AFTER THEY HAVE BEEN CLEANED.

6. THE TOTAL LENGTH OF THE VIBRATION GRID AND ROCK RAMPS SHOULD BE AT LEAST 15m WHERE PRACTICABLE, AND AS WIDE AS THE FULL WIDTH OF THE ENTRY OR EXIT AND AT LEAST 3m. THE ROCK RAMP SHOULD COMMENCE AT THE EDGE OF THE OFF-SITE SEALED ROAD OR PAVEMENT.

7. FLARE THE END OF THE ROCK PAD WHERE IT MEETS THE PAVEMENT SO THAT THE WHEELS OF TURNING VEHICLES DO NOT TRAVEL OVER UNPROTECTED SOIL.

8. IF THE FOOTPATH IS OPEN TO PEDESTRIAN MOVEMENT, THEN COVER THE COARSE ROCK WITH FINE AGGREGATE OR GRAVEL, OR OTHERWISE TAKE WHATEVER MEASURES ARE NEEDED TO MAKE THE AREA SAFE

MAINTENANCE

1. INSPECT VIBRATION GRID PRIOR TO FORECAST RAIN, DAILY DURING EXTENDED PERIODS OF RAINFALL, AFTER SIGNIFICANT RUNOFF-PRODUCING RAINFALL, OR OTHERWISE AT FORTNIGHTLY INTERVALS.

2. IF SAND, SOIL, SEDIMENT OR MUD IS TRACKED OR WASHED ONTO THE ADJACENT SEALED ROADWAY, THEN SUCH MATERIAL MUST BE PHYSICALLY REMOVED, FIRST USING A SQUARE-EDGED SHOVEL, AND THEN A STIFF-BRISTLED BROOM, AND THEN BY A MECHANICAL VACUUM UNIT, IF AVAILABLE.

3. IF NECESSARY FOR SAFETY REASONS, THE ROADWAY SHALL ONLY BE WASHED CLEAN AFTER ALL REASONABLE EFFORTS HAVE BEEN TAKEN TO SHOVEL AND SWEEP THE MATERIAL FROM THE ROADWAY.

4. WHEN THE VOIDS BETWEEN THE ROCK BECOMES FILLED WITH MATERIAL AND THE EFFECTIVENESS OF THE ROCK RAMPS ARE REDUCED TO A POINT WHERE SEDIMENT IS BEING TRACKED OFF THE SITE, A NEW 100mm LAYER OF ROCK MUST BE ADDED AND/OR THE ROCK PAD MUST BE EXTENDED.

5. ENSURE ANY ASSOCIATED DRAINAGE CONTROL MEASURES ARE MAINTAINED IN ACCORDANCE WITH THEIR DESIRED OPERATIONAL CONDITION.

6. DISPOSE OF SEDIMENT AND DEBRIS IN A MANNER THAT WILL NOT CREATE AN EROSION OR POLLUTION HAZARD.

REMOVAL

1. THE VIBRATION GRID SHOULD BE REMOVED ONLY AFTER IT IS NO LONGER NEEDED AS A SEDIMENT CONTROL DEVICE.

2. REMOVE MATERIALS AND COLLECTED SEDIMENT AND DISPOSE OF IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.

3. RE-GRADE AND STABILISE THE DISTURBED GROUND AS NECESSARY TO MINIMISE THE EROSION HAZARD.

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Drawn:	Date:	Construction Exit - Vibration Grid	
GMW	Apr-10	Exit-05	

APPENDIX C

INSPECTION AND TEST PLAN

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INSPECTION AND TEST PLAN					ITP Doc No.:						
EROSION AND SEDIMENT CONTROL SCOPE OF WORKS					Revision No:		A				
					Project No:						
					Project Name:		Blakeview				
					Date:						
					Location:						
					Prepared By:		Verification Legend		Responsibility Legend		Responsibility Legend
Reviewed By:		R - ReviewPoint		PM - Project Manager		Sub - Subcontractor					
		M - Monitor		PS - Project Supervisor		Rep - Client Representative		Name		Sign and Date	
Approved By:		W - Witness Point		CM - Construction Manager							
		H - Hold Point		ENV - Environmental Representative							
		V - Verification Point		Rep - Client Representative							
TASK ID	DESCRIPTION	ACCEPTANCE CRITERIA	Frequency	INSPECTION ACTIVITIES		INSPECTION ACTIVITIES					
				Construction Contractor		Client Representative					
				Inspection Type	Representative	Inspection Type	Representative				
1	PRELIMINARY APPROVALS & DOCUMENT REVIEW										
1.1	Review the following documents at pre-start: <ul style="list-style-type: none"> Project Execution Plan Construction Environmental Management Plan Erosion and Sediment Control Plan Approved Inspection and Test Plans Field Inspection Checklists IFC Drawings 	Documents are: <ul style="list-style-type: none"> Reviewed Suitable for works to proceed Approved Issued for Construction 	Prior to Start of Work	H	PM PS CM ENV	H	Rep	Sign:		Sign:	
				Date:		Date:					
2	RECEIPT, TRANSPORT, HANDLING, STORAGE & ISSUE OF MATERIALS										
2.1	Carry out visual inspection of size, quantity and quality for: <ul style="list-style-type: none"> Backfill materials Rock Geotextile Mulch Ensure proper handling, hauling and storage methods in accordance with project procedures and specifications	<ul style="list-style-type: none"> Material Certificates must accompany delivery Correct material quantity, size and type as per accompanying documentation No obvious signs of damage prior to handling Materials packaged correctly No damage sustained during handling and storage of materials Materials only issued to authorised personnel All required documentation shall be signed off and any non conforming material is quarantined, recorded and reported in accordance with project requirements 	Per Delivery	M/R	PS	M/R	Rep	Sign:		Sign:	
				Date:		Date:					

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INSPECTION AND TEST PLAN				ITP Doc No.:							
EROSION AND SEDIMENT CONTROL SCOPE OF WORKS				Revision No:		A					
				Project No:							
				Project Name:		Blakeview					
				Date:							
				Location:							
				Prepared By:		Verification Legend		Responsibility Legend		Responsibility Legend	
Reviewed By:		R - ReviewPoint		PM - Project Manager		Sub - Subcontractor		Name		Sign and Date	
		M - Monitor		PS - Project Supervisor		Rep - Client Representative					
Approved By:		W - Witness Point		CM - Construction Manager							
		H - Hold Point		ENV- Environmental Representative							
		V - Verification Point		Rep - Client Representative							
TASK ID	DESCRIPTION	ACCEPTANCE CRITERIA	Frequency	INSPECTION ACTIVITIES		INSPECTION ACTIVITIES					
				Construction Contractor		Client Representative					
				Inspection Type	Representative	Inspection Type	Representative				
3	SURVEY and SET OUT										
3.1	<ul style="list-style-type: none"> Construction Survey 	<ul style="list-style-type: none"> Working area limits identified All buried services located and marked Any trees to remain to be marked Any permanent survey marks or indicators removed, disturbed or destroyed shall be restored The survey shall comply with Mapping Grid of Australia (MGA2020) or other approved datum The survey shall adopt the same marks and benchmarks as used in the engineering design 	Prior to Start of Work	H	S	M/R	Rep				
				Sign:		Sign:					
				Date:		Date:					
4	SITE CLEARING AND PREPARATION WORKS										
4.1	INSTALLATION OF EROSION AND SEDIMENT CONTROLS										
4.2.1	<ul style="list-style-type: none"> Implementation of Erosion and Sediment Control (installation of all measures) 	<ul style="list-style-type: none"> Conformance with the requirements of the project Erosion and Sediment Control Plan and associated drawing 	As required	V	PS ENV	M/R	Rep				
				Sign:		Sign:					
				Date:		Date:					

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ADVERTISED PLAN

INSPECTION AND TEST PLAN				ITP Doc No.:							
EROSION AND SEDIMENT CONTROL SCOPE OF WORKS				Revision No:		A					
				Project No:							
				Project Name:		Blakeview					
				Date:							
				Location:							
				Prepared By:		Verification Legend		Responsibility Legend		Responsibility Legend	
Reviewed By:		R - ReviewPoint		PM - Project Manager		Sub - Subcontractor		Name		Sign and Date	
		M - Monitor		PS - Project Supervisor		Rep - Client Representative					
Approved By:		W - Witness Point		CM - Construction Manager							
		H - Hold Point		ENV- Environmental Representative							
		V - Verification Point		Rep - Client Representative							
TASK ID	DESCRIPTION	ACCEPTANCE CRITERIA	Frequency	INSPECTION ACTIVITIES		INSPECTION ACTIVITIES					
				Construction Contractor		Client Representative					
				Inspection Type	Representative	Inspection Type	Representative				
4.1	CLEARING & GRADING										
4.1.1	Review the following documents prior to Clear and Grade activities: <ul style="list-style-type: none"> "Dial Before You Dig" clearance report; Project Approvals Conditions including <ul style="list-style-type: none"> Construction Environmental Management Plan. Erosion and Sediment Control Plan 	Documents are: <ul style="list-style-type: none"> Reviewed Suitable for works to proceed Approved Issued for Construction 	Prior to Start of Work	H	PM PS QA/QC PE ENV	R	Rep	Sign:		Sign:	
				Date:		Date:					
4.1.2	<ul style="list-style-type: none"> Clearing and Grading Works 	<ul style="list-style-type: none"> Grub all cleared areas shown on the Drawings where vegetation is of a woody fibrous nature and the base of the plant(s), at a height of 300mm above ground surface, has a trunk diameter of 30mm or greater Within streams and waterways, do not remove stumps and roots below ground surface 	As required	M/R	PS	W	Rep	Sign:		Sign:	
				Date:		Date:					
4.3	HANDLING OF TOPSOIL										
4.3.1	<ul style="list-style-type: none"> Topsoil Stripping 	<ul style="list-style-type: none"> All cleared areas shown on the construction Drawings where topsoil is prevalent and/or where organic matter in near-surface soil might have an adverse impact on the quality of controlled fill shall be stripped The depth of stripping will vary depending on the organic content of surface soil, but shall not be less than 100mm in any area identified for stripping 	As required	M/R	PS ENV	W	Rep	Sign:		Sign:	
				Date:		Date:					

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INSPECTION AND TEST PLAN

EROSION AND SEDIMENT CONTROL SCOPE OF WORKS

INSPECTION AND TEST PLAN				ITP Doc No.:			
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Prepared By:		Verification Legend	Responsibility Legend	Responsibility Legend	ITP Completion Sign Off		
		R - ReviewPoint	PM - Project Manager	Sub - Subcontractor			
Reviewed By:		M - Monitor	PS - Project Supervisor	Rep - Client Representative	Name	Sign and Date	Name
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TASK ID	DESCRIPTION	ACCEPTANCE CRITERIA	Frequency	INSPECTION ACTIVITIES		INSPECTION ACTIVITIES	
				Construction Contractor		Client Representative	
				Inspection Type	Representative	Inspection Type	Representative
4.3.2	<ul style="list-style-type: none"> Removal of Topsoil 	<ul style="list-style-type: none"> Unless shown otherwise on the IFU construction drawings, topsoil shall be removed to a depth of 150mm or as directed by the Client's Representative 	As required	M/R	PS ENV	W	Rep
				Sign:		Sign:	
				Date:		Date:	
4.3.4	<ul style="list-style-type: none"> Topsoil Stockpiling 	<ul style="list-style-type: none"> Stockpile to have sediment fencing installed around downstream portion to avoid any sediment loss 	As required	M/R	PS ENV	M/R	Rep
				Sign:		Sign:	
				Date:		Date:	
7	CLEAN-UP & RE-INSTATEMENT						
7.1	<ul style="list-style-type: none"> Site Clean-up and Remediation <p style="text-align: center; color: red; font-weight: bold; font-size: 1.2em;">ADVERTISED PLAN</p>	<ul style="list-style-type: none"> Roads and stormwater drainage infrastructure shall be left in a neat and clean condition clear of any sediment Turf stripping and sediment fence to be installed on edge of allotments to capture any sediment runoff 	As required	M/R	PS ENV QA/QC	M/R	Rep
				Sign:		Sign:	
				Date:		Date:	
8	FINAL INSPECTION						
8.1	<ul style="list-style-type: none"> Review success of rehabilitation measures Ensure all sediment devices are free of sediment and replace any controls that may have become damaged 	<ul style="list-style-type: none"> Compliance with project drawings and specifications Confirmation of completion of ITP Confirmation with site walk-through All inspection records indicate conformance are signed off 	Completion of Work	H	PS PM ENV	H	Rep
				Sign:		Sign:	
				Date:		Date:	

Notes:

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EROSION AND SEDIMENT CONTROL SCOPE OF WORKS		Verification Legend		Responsibility Legend		Responsibility Legend		ITP Completion Sign Off	
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ITP Signature Legend									
Name		Signature							

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