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Environmental Management Plan

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1 Policy

We believe that businesses are responsible for achieving good environmental practice and operating in a sustainable manner.

We are therefore committed to reducing our environmental impact and continually improving our environmental performance as an integral and fundamental part of our business strategy and operating methods.

It is our priority to encourage our customers, suppliers and all business associates to do the same. Not only is this sound commercial sense for all; it is also a matter of delivering on our duty of care towards future generations.

Our policy is to

- Wholly support and comply with or exceed the requirements of current environmental legislation and codes of practice.
- Minimise our waste and then reuse or recycle as much of it as possible.
- Minimise energy and water usage in our buildings, vehicles and processes in order to conserve supplies, and minimise our consumption of natural resources, especially where they are non- renewable.
- Operate and maintain company vehicles with due regard to environmental issues as far as reasonably practical and encourage the use of alternative means of transport and car sharing as appropriate.
- Apply the principles of continuous improvement in respect of air, water, noise and light pollution from our premises and reduce any impacts from our operations on the environment and local community.
- As far as possible purchase products and services that do the least damage to the environment and encourage others to do the same.
- Assess the environmental impact of any new processes or products we intend to introduce in advance.
- Ensure that all employees understand our environmental policy and conform to the high standards it requires.
- Address complaints about any breach of our Environmental Policy promptly and to the satisfaction of all concerned.
- Update our Environmental Policy in consultation with staff, associates and customers when required.

2 Introduction

The project is defined as the construction of the development, inclusive of the early works, inclusive of the demolition and deep excavation works, water, sediment, erosion & dust control. The Scope of Works includes Site Establishment and Preparation, Demolition and Earthworks.

3 Environmental Management

Best practice procedures will be followed throughout the project to protect the environment within and around the site.

Statutory obligations and requirements

A. Topography, Geology and Soils

Legislation / Policy	Sections / Clauses	Requirements
Protection of the Environment Operations Act 1997	Clause 120	Demolition activities will not adversely impact upon surrounding waterways.
Contaminated Land Management Act 1997	Refer *Contaminated Land*	Contaminated soil and groundwater requirements are discussed in *Section 5.8.*
Protection of the Environment Operations Act 1997	Refer *Air and Energy*	Dust management requirements are discussed in *Section 5.5.*

B. Water and Drainage

Legislation / Policy	Sections / Clauses	Requirements
Protection of the Environment Operations Act 1997	Clause 120	Demolition activities will not adversely impact upon surrounding waterways.

C. Flora and Fauna

Legislation / Policy	Sections / Clauses	Requirements
Environmental Planning and Assessment Act 1979	Section 5A	Demolition activities will not have a significant effect on threatened species, populations or ecological communities, or their habitats.
Environment Protection and Biodiversity Conservation (EPBC) Act 1999	Part 3 Division 1	Demolition activities must not have a significant impact on a matter of National Environmental Significance.

D. Air and Energy

Legislation / Policy	Sections / Clauses	Requirements
Protection of the Environment Operations Act 1997	Clause 124 and 126	Maintain and operate equipment and deal with materials in a proper and efficient manner to prevent air pollution.
Protection of the Environment Operations Act 1997	Clause 126	Controlled ozone depleting substances are not to be released to the atmosphere.

E. Noise & Vibration

Legislation / Policy	Sections / Clauses	Requirements
Protection of the Environment Operations Act 1997	Clause 124 and 126	Maintain and operate equipment and deal with materials in a proper and efficient manner to prevent noise pollution.

F. Waste Management

Legislation / Policy	Sections / Clauses	Requirements
Protection of the Environment Operations Act 1997	Part 5.6, Division 2 and 3	Waste is to be transported lawfully, disposed at a licensed facility and proof of disposal documented.
Waste Avoidance and Resource Recovery Act 2001	All	Ensure that resource management options are considered against the waste hierarchy: (a) avoidance of unnecessary resource consumption; (b) resource recovery (including reuse, reprocessing, recycling and energy recovery); and (c) disposal.

G. Contaminated Land

Legislation / Policy	Sections / Clauses	Requirements
Protection of the Environment Operations Act 1997	Chapter 5	Land and water (including groundwater) must not be contaminated by spills, leaks or unlawful disposal of material.
Contaminated Land Management Act 1997	All	Provides the EPA with the power to regulate contaminated sites that pose a significant risk of harm to human health or the environment.
National Environment Protection (Assessment of Site Contamination) Measure 1999, especially Schedule B(7a) Guideline on Health Based Investigation	All	Provides guidance on contaminated land investigation and sets health and environment based investigation levels for individual substances.

H. Heritage – Aboriginal & Non-Aboriginal

Legislation / Policy	Sections / Clauses	Requirements
National Parks and Wildlife Act 1974	Section 90	An approval from the NSW National Parks and Wildlife Service (NPWS) is required if impacting upon an Aboriginal site. Consultation with NPWS and local Aboriginal Land Council is required prior to destruction, damage or alteration of the site.
Heritage Act 1977	Section 139	If excavation is to take place over or near European heritage remains then an Excavation Permit Exception or a Permit is required.

I. Traffic and Access

There are no legislative requirements applicable to the traffic and access needs of the project.

J. Social and Visual

There are no legislative requirements applicable to the social and visual impacts of the project. It is our policy as a corporate citizen to keep potential impacts to a minimum.

K. Air and Energy

Legislation / Policy	Sections / Clauses	Requirements
Protection of the Environment Operations Act 1997	Clause 124 and 126	Maintain and operate equipment and deal with materials in a proper and efficient manner to prevent air pollution
Protection of the Environment Operations Act 1997	Clause 126	Controlled ozone depleting substances are not to be released to the atmosphere.

4 Implementation and Operation

Environmental Management Program
The management of environmental aspects relevant to construction works undertaken by Ericon Buildings (EB) is tabled in an Environmental Management Program, as per Appendix A. This table includes:

(a) A description of actions required to implement, monitor or maintain control measures;
(b) Persons responsible for these actions;
(c) Acceptance criteria or performance indicators; and
(d) Reference to specific records and relevant procedures

Structure and Responsibilities
In this section detail the names, responsibilities and authority of all employees responsible for implementing the CEMP, monitoring its effectiveness, rectifying any environmental deficiencies, controlling further construction activities until deficiencies are rectified and keeping the environmental records.

Define the relationship between contractors and subcontractors and any interfaces with EB operations. Include an organisational structure for project control. Details of each key personnel need to be included.

There are a number of responsibilities falling to various people to ensure the conduct of a project proceeds in accordance with the CEMP for the site:

- Client (Environmental Officer) - approves the EIA document (an REF, SEE or EIS), which contains the environmental safeguards forming the main basis for the CEMP. ensures all due diligence is carried out for the project by ensuring EIA processes and CEMP preparation are conducted in accordance with SWC policy and quality procedures.

- EB Project Environmental Representative (PER) - signs off the EIA document detailing the environmental measures, reviews and signs off the CEMP; may audit the project site for EIA compliance and adherence of the works to the provisions of the CEMP; reports breaches of environmental due diligence to appropriate parties.

- EB Project Manager - ensures adequate preparations and sign-offs are carried out for the EIA and CEMP documents; ensures no occupation of the site occurs until an adequate CEMP is available for the project; ensures site occupation and project delivery is carried out in accordance with the CEMP; performs quality checks; ensures customers and community are notified of commencement if necessary; ensures corrective measures are carried out for any environmental incidents or potential breaches of the CEMP provisions; ensures the site is rehabilitated to an appropriate standard after completion of the works.

As well as the key personnel dealt with above, other individuals at the site will be responsible for specific tasks, eg. maintenance of silt fences. These responsibilities must be assigned in the CEMP (along with each environmental measure). However, the key personnel are not absolved of their responsibilities by delegation of individual tasks.

Training and Environmental Awareness

This section details environmental training that all personnel, including subcontractors and site visitors, are required to undertake. As a minimum all project personnel will familiar with the EMP and can understand it. Environmental training includes:

- a site induction;
- emergency response training;
- spill kit training;
- familiarisation with site environmental features requiring protection and controls; and
- Specific environmental training of relevant employees eg erosion and sedimentation control training.

ENVIRONMENTAL COMPLAINTS

4.1.1 Purpose

To define the process for recording and responding to environmental complaints received by Ericon Buildings, hereinafter referred to as the Organisation.

4.1.2 Definitions

4.1.3 Environmental complaint:

- A documented critical observation or query about the Organisation's environmental aspects, policy, management system or performance, from interested parties requesting a response or remedial action, or otherwise worthy of response.

- A complaint, verbal or otherwise, from an employee regarding environmental aspects and their management and to which the employee requires a resolution and / or which requires senior management consideration.

4.1.4 Responsibilities

- The initial recipient of a complaint is responsible for determining whether the complaint qualifies for action under the provisions of this procedure, in association with the complainant. In the case of dispute, the complainant will refer the complaint to the Project Manager for adjudication.

- The Project Manager is responsible for maintaining a register of environmental complaints and complaint referrals.

- The Project Manager, or his nominated representative, is ultimately responsible for ensuring appropriate actions are taken to investigate all environmental complaints documented in accordance with this procedure, and that where necessary, communications are held with the relevant interested parties (in compliance with the appropriate procedure).

- Other Managerial Personnel and Site Manager are responsible for ensuring that environmental complaints, which relate to their area of responsibility, are investigated and the results of investigations forwarded to the Project Manager / Director.

- All employees are responsible for contributing to the planned resolution of complaints, in so far as they relate to matters within their control.

4.1.5 Procedure

- All environmental complaints will be reported and recorded.
- A copy of a completed Incident Form will be forwarded to the Project Manager and WHS officer otherwise nominated representative, within 48 hours of the initial receipt of the complaint.
- The complainant will be informed of the actions being taken as a consequence of the complaint, within 21 days of the complaint first being received.
- The Project Manager and WHS officer otherwise nominated representative will confirm receipt of the Incident Report Form, which will be recorded in the Organisation's incident reporting databases and forward a copy to client's Project Manager (Superintendent) otherwise nominated representative
- Where appropriate, the complaint will be fully investigated by the Project Manager / Director or a nominated representative within 28 days.

4.1.6 Community consultation

All community consultation and communications will be directed to the client. Whilst EB is the principle contractor it will not be acting as community liaison.

Emergency Preparedness and Response

The operating procedures, and the response guides to which the procedures make reference in the following procedure, are intended to provide assistance in the decision-making processes. The requirement is to complete an incident report with as much detail as can be obtained, and the requirement to distribute incident reports to various departments as well as to response partners and to others, is presumed and is not repeated in these procedures nor in their associated response guides.

4.1.7 Definitions

- Containment: Measures taken to control or to restrict the spread of hazardous materials or pollutants involved in an environmental emergency or in a pollution incident.
- Countermeasures: Embraces all activities, including intentional in-situ burning and intentional in- situ chemical reactions, which are implemented to reduce the overall impact and the overall consequences of an environmental emergency or a pollution incident.
- Emergency: A sudden and usually unforeseen event that calls for immediate measures to minimize its adverse consequences.

- Emergency Response Team: A decision-making response group consisting of representatives of partner ministries and other government agencies or departments, and possibly someone representing the responsible party and parties involved, and assigned by their respective host entities or agencies to assist the On-Scene Coordinator with his tasks by focusing on political and policy implications and on complex technical matters.

- Environment: The air or atmosphere, all surface and ground waters, and all land including sub- soils.

- Environmental degradation or degradation of the environment: Unfavourable modification of the ecological state and environment through natural processes and/or human activities.

- Environmental emergency: The degradation, or the threat of degradation of the environment to an extent that it creates or constitutes an emergency; often an event that involves hazardous materials and that, from a national perspective, is beyond the response capability of local or regional authorities and beyond the response capability of the discharger and others liable at law; and an event that calls for a response by several public authorities for immediate, coordinated, possibly pre-emptive, and large-scale countermeasures. (An environmental emergency from a regional or district perspective, of course, would be an event as defined within the concepts of this definition, but beyond the response capabilities of the smaller community or local authorities.)

- Hazardous material or hazardous substance(s): Any substance, element, compound, mixture, solution, wastes, material or goods, including pesticides and petroleum oils and their associated products, which by itself, or in conjunction with other substances, elements, compounds, mixtures, solutions materials or goods as a result of incomplete, uncontrolled or inadvertent reactions, presents a hazard to man or adversely affects man, animals or other living things including plants or the environment in general, and property, or has the potential to do so under the circumstances of the emergency

4.1.8 Primary Assessment and Response Perspective

4.1.8.1 Environmental Emergencies

A. The result of, or associated with, natural events or other catastrophic occurrences
B. Caused by parties liable at law Procedure one (B)

- If safe to do so, control and contain discharged hazardous substances
- Notify all authorities as required
- Undertake immediate countermeasures

Procedure Two (B) & One (A)

- Determine nature of threat
- Notify response partners
- Evaluate need for on-site response
- Coordinate and broker containment and countermeasures, as required
- Provide information and services
- Broker essential enforcement activities

4.1.8.2 Pollution Incidents

A. Major Pollution Incident
B. Minor Pollution Incident

Procedure one (A) & (B)

- Control and contain discharged material
- Notify all authorities as required
- Clean up and properly dispose of pollutant
- Restore affected property and environment

Procedure Two (A)

- Assess nature and extent of damage
- Notify response partners
- Assume response coordination as required
- Evaluate need for on-site response
- Provide information and advice
- Broker essential enforcement activities

Procedure Two (B)

- Assess nature and extent of damage
- Verify with local or district authorities that the event is under control
- Provide information and advice
- Notify response partners if necessary
- Broker on-site response if asked to do so by the local or district authorities

4.1.9 Emergency Response Contacts

This section lists Emergency Response Contacts in a table like below. The table is to be displayed on the work-site and in all site vehicles.

Emergency	Contact
Ambulance	000
Fire Brigade	000
HAZMAT	000
Spill Response Unit (Veolia) *Liquid Waste* • Spill Response • Treatment Oils/Oils Water • Transportation • Environmental Management, Sampling and Testing	Contact (TBA)
Contaminated Waste • Sludge, Soil • Containment, Transportation • Storage, Treatment & Disposal	Contact (TBA)
Dry Waste • General Waste Transportation	Contact (TBA)
Industrial Services • Spill Response	Contact (TBA)
EPA	131 555 (pollution reporting, environment information and publication requests) for the cost of a local call within New South Wales (mobiles excluded) or (02) 9995 5555
Local Council (Ku-ring-gai Council)	(02) 9425-0000
EB First Aid Officer	Contact (TBA)
EB Environmental Representative	Contact (TBA)
EB Site Supervisor	Contact (TBA)
Other Ericon Buildings Head Office	(02) 9715-1333

Incident Management

4.1.9.1 Scope

This procedure applies to the management of environmental incidents occurring on or extending off site. Incidents include complaints from people external to the business. It does not specify the requirements for managing Health and Safety incidents, however it does describe the links/relationship with the management process for Health and Safety incidents.

4.1.9.2 Actions

The Incident Management System comprises the following elements:

4.1.9.2.1 Incident Management Training
It is a requirement that staff are able to:

- Identify what is an environmental incident
- Take appropriate immediate action to control an incident; and
- Know the reporting requirements.

Information provided to staff must reflect the following hierarchy in their immediate response to an incident.

- Ensure Health & Safety first;
- Shut off the source if possible;
- Contain contaminants;
- Report; and
- Clean up.

4.1.9.2.2 Incident Management Resources and Documentation
Incident management procedures should be appropriate to:

- The site;
- Scale of the environmental incident;
- Resources available; and
- Geographical location and sensitivity of receiving environment. Examples of resources, documentation and procedures are detailed below. Resources and Documents

- Technical information on contaminants e.g. Safety Data Sheets, Chem Alert database, environmental effects, site specific disposal options.
- Site plans/maps showing relevant information e.g. drainage, hazardous substances locations and quantities.
- Contact information for emergency services and external specialists/resources.
- Environmental Issues Register information.

4.1.9.3 INITIAL RESPONSE

When any person becomes aware of an incident he/she will immediately inform the contractor or if the contractor is not immediately available the most senior person at the site.

If management of the incident is within the scope of the contractor's work, such work shall be immediately undertaken. If not, the appropriate persons should be contacted immediately.

It is better to over-react and then scale down the response.

4.1.9.4 PROCESS AND PROCEDURES

Incident Identification

Once the incident has been identified and its initial and potential impact assessed the appropriate personnel should be notified.

For The Constructor this could include:

- Site Manager
- Project Manager

Incident Assessment

If assessment of the incident and its impact is hampered by a lack of knowledge or information, the relevant Authorities call out personnel should be requested to attend the site immediately. This must not delay an immediate response to the current impact of the incident.

Incidents must be addressed on their process for the duration of the incident. The site manager continuously assesses and categorises the incident to ensure that the classification and response is appropriate for the circumstances.

4.1.9.5 Categorising Incidents

The Site Manager should categorise the incident as either:

I. Routine If an incident can be effectively handled by a work group with few or not adverse impacts on the community, environment or business operations, it is a routine incident and will be handled as part of normal operation.
II. Significant If an incident can be managed at site level but requires substantial additional resources from outside the work group or has substantial impacts on the community, environment or business operations, including "political sensitivity", it is a significant incident.

III. Major If an incident is or has the potential to be of such magnitude as to require off site co- ordination with major levels of resourcing and support, it is a major incident. The establishment of an Incident Head office will be required to co-ordinate support and/or extensive interaction with one or more authorities.

Based on the assessment and categorisation of the incident the site manager should review the personnel and resources available and formulate requirements of personnel, plant and parts to deal with the incident.

4.1.9.6 RECORDING, REPORTING AND DEBRIEFING

During an incident the site manager will keep a log. The log should contain information such as:

- Notification of the incident (time and who notified)
- Times for all issues logged
- Staff arrival and departure
- Persons contacted
- Equipment requests (time made, time supplied, suitability)
- Resource requests (who and when)
- Problems
- Key Decisions
- Key actions taken
- Progress reports
- Achievements
- Ideas for future improvements
- Confirmation of receipt of vital messages

5 Monitoring Subcontractors and Suppliers

EB's standard contract documents will be used for subcontracts. These require that the subcontractors meet the requirements of Project's Specifications.

Any subcontracted scope of works must be fully aligned to the head contract requirements. EB will achieve this outcome by:

- Documenting and correctly completing subcontractor and suppliers agreements that include a scope of work and environmental requirements which are aligned to the contract specific requirements;
- Examination and evaluation of subcontractor's demonstrated experience and capabilities;
- Selecting appropriate subcontractors and suppliers for tender;
- Conducting a post ender interview to verify the environmental requirements related to the contract can be met;
- Evaluation, recommendation and seeking approval from senior management for engagement of the preferred subcontractor or supplier;
- EB will hold weekly or fortnightly meetings with Subcontractors to consult on environmental compliance and issues;
- Subcontractors, their work and their work areas will be included in the fortnightly Environmental Inspection;
- Subcontractors will also be subject to random audit where their occupation on site exceeds 3 – 4 weeks.

Subcontractor Non-conformances will be identified and closed out through the following activities:

- Internal audit findings
- Third party audit findings
- Complaints (internal or external)
- Observation
- Incidents
- Housekeeping inspections
- Checklist findings
- Near-misses

6 Performance evaluation and review

Compliance/verification reporting

A list of all reporting requirements for the project should be provided including who is responsible for preparing the reports and when they are to be prepared.

Examples of reports are:

- Monthly Environmental Performance reports
- Non-conformance reports
- Corrective action reports
- Complaint reporting
- Audit reports
- Pre-construction compliance reports
- Any reports that are required by government agencies such as the EPA

Work Place Environmental Inspection

Regular workplace inspections to be performed to ensure that all environmental working settings are maintained throughout the site.

These inspections aim to identify any systematically occurring hazards in the workplace and to ensure that environmental practices are maintained throughout the site. In order to achieve this, an Environmental Workplace Inspection Checklist form is to be completed for fortnightly Environmental Inspections. Refer template attached to this EMP.

EMP audit

6.1.1 Purpose

- To determine whether EB, hereinafter referred to as the Organisation's Environmental Management System (EMS), conforms to planned arrangements for environmental management, including the requirements of the international standard ISO 14001.

- To determine whether the environmental management system has been properly implemented and maintained.

- To provide information on the results of audits to management.

6.1.2 Scope

This procedure applies to all elements of the Organisation's Environmental Management System.

6.1.3 Definitions

- Audit - a systematic and documented verification process of objectively obtaining and evaluating evidence.

- Internal Audit (First Party Audit) - an audit carried out by an organisation on its own performance

- External audit (third party audit) - an audit conducted by a third party in accordance with the requirements of ISO 14001, to maintain certification

- Element - a particular aspect of the Environmental Management System e.g. record keeping.

- Environmental auditor - persons who have completed the auditor training for ISO14001 and can display competency and objectivity in the tasks and duties of an environmental audit.

6.1.3.1 Non-conformance - reported via the auditor when the objective evidence of an auditor reveals that activities are either not in compliance with the relevant components of the EMS, the EMS is not being implemented effectively, or, the EMS as implemented does not comply with the requirements of the standard.

6.1.3.2 Observation

- An issue that requires attention in order to improve the operation of the environmental management system and that if left un-addressed is likely to lead to a non-conformance during future audits; or

- An example of good environmental practice that deserves recognition

- A flag for re-revisit at next audit.

6.1.4 Responsibilities

- It is the responsibility of the Project Manager / Site Manager otherwise nominated representative to ensure that the Organisation's Environmental Management System is audited in accordance with the requirements of ISO 14001.

- It is the responsibility of the Project Manager / Site Manager otherwise nominated representative to audit each subcontractor of the site in accordance with the Audit Schedule

- It is the responsibility of the Project Manager / Site Manager otherwise nominated representative to ensure that an accredited External auditor has been appointed under contract and to ensure that external audits are conducted at a frequency appropriate to the maintenance of ISO 14001 certification.

- The Project Manager / Site Manager otherwise a nominated representative is responsible for reporting quarterly to the Organisation's Environmental Management Committee on the results of any audits undertaken during the period.

- It is the responsibility of Site / Departmental / Personnel Managers to co-operate with audit procedures and auditors.

6.1.5 Procedure

- An audit schedule will be established by the Project Manager / Site Manager otherwise nominated representative to ensure that all areas of the Organisation's Environmental Management System are audited.

- For internal audits, the intervals between auditing a particular site or element will vary between one year and three years dependent on the significance of the environmental aspect associated with that site or element.

- Internal Auditors will not audit their own areas of responsibility.

6.1.5.1 Environmental Auditors will receive appropriate, documented training so they are equipped with the skills necessary to conduct an audit in a competent manner.

6.1.5.2 An internal environmental audit will be undertaken in the following manner:

- The Project Manager / Site Manager, or nominated deputy will identify the area / element that requires auditing

- At least two weeks before the planned audit a nominee from the list of trained auditors will be assigned to the audit and the relevant area / departmental manager ('responsible party') informed of the intention to undertake an audit.

- The nominated auditor will be responsible for planning, preparing and undertaking the audit in accordance with his/her training and the requirements of this procedure.

- During the planning stage the results of previous audits will be used to determine the audit scope, where applicable.

- The appointed auditor will liaise with the appropriate manager to agree a date for the audit.

- At the beginning of the audit the auditor will convene a brief meeting with the appropriate manager to outline the scope of the audit.

- The auditor will meet with the appropriate manager at the end of the audit to relay findings, to give an opportunity for factual errors to be corrected, to agree corrective actions and to sign-off the audit.

- The auditor will submit a written report to the manager of the area / department and to the Project Manager, or nominated deputy, within two weeks of the audit, as detailed below.

6.1.5.3 Internal Audit Reports

- The results of the audit will be summarised in an Internal Audit Report the Project Manager / Site Manager otherwise nominated representative will maintain a sequential record of all audits undertaken.

- A satisfactory audit indicates objective evidence has been obtained to demonstrate that the EMS has been implemented as planned and is effectively maintained, and that it conforms to the requirements of the standard. Satisfactory audit reports will be:
  a) signed off as completed by the auditor
  b) filed in the audit master file for the appropriate year in sequential number order

- An unsatisfactory audit indicates that objective evidence has been recorded by the auditor to the effect that there is a single or series of non-conformances.

6.1.5.4 The findings of the audit process will be reported to the Organisation's Environmental Management Committee.

<u>Non-conformance and corrective and preventative action</u>

6.1.6 Purpose

- This procedure sets out the requirement for defining responsibility and authority for handling and investigating non-conformance, taking action to mitigate any impacts caused and for initiating and completing corrective and preventive action for Ericon Buildings hereinafter referred to as the Organisation's environmental management system.

6.1.7 Procedure

- The methods of identification, recording and addressing any non-conformance associated with the Environmental Management System, identified outside the internal EMS Audit process.

- This procedure covers both non-conformance with Environmental Management Procedures as well as non-conformance with the ISO 14001 specification.

- Reports of non-conformances may result from external audits or may occur as part of routine operations, where an individual or department may identify a non-conformance.

6.1.8 Definitions

- Corrective Action - action taken to rectify the non-conformance or to mitigate an environmental impact (real or potential) or to comply with an Environmental Management Procedure or ISO 14001.

- Preventive Action - action taken to avoid repetition of the same non-conformance. This could involve modification or enforcement of procedures, or implementation of further controls

6.1.9 Responsibilities

- It is the responsibility of the Project Manager / Site manager, or nominated representative, to prepare and issue an EMS Internal Audit Report form on detection of a non-conformance including, where appropriate, as a consequence of an environmental complaint.
- It is the responsibility of all employees to bring suspected non-conformances with the requirements of the EMS to the attention of the relevant Manager, or nominated representative. Nonconformance can be identified through the following activities :

    - Internal audit findings
    - Third party audit findings
    - Complaints (internal or external)
    - Observation
    - Incidents
    - Housekeeping inspections
    - Checklist findings
    - Near-misses

- Site, Departmental and Line Managers will comply with all corrective and preventive actions prescribed within their sphere of responsibility, subject to the exigencies of the service. In exceptional cases, they should inform the Project Manager or nominated representative, of reasons why actions cannot or will not be taken, for further consideration and decision.

- The Project Manager or nominated representative will establish and maintain a reporting and record keeping system for non-conformances, corrective and preventive actions.
- Non-conformances and corrective actions will be reviewed through the Management Review process.

6.1.10 Procedure

- By whichever means a non-conformance is identified, the underlying cause(s) of the non- conformance must be investigated.
- Appropriate and timely corrective action must be taken according to the nature of the non- conformance.
- Preventive action, such as implementing modifying or enforcing procedures or controls, will be taken to avoid repetition of the non-conformance.
- Any corrective or preventive action taken to address the causes of non-conformance must be appropriate to the magnitude of problems and commensurate with the environmental impact encountered, and documented.
- The Organisation will implement and maintain a system of reporting and record keeping for non- conformances, corrective and preventive action.
- Any changes to the environmental management procedures as a result of corrective or preventive action will be recorded.
- The EMS Internal Audit Report form will detail the nature and scale of the nonconformance; propose corrective and preventive actions, as appropriate.
- Repeated non-conformances of the same nature or significant deviations from procedures (for example, disregard of the procedures, or total absence of required documentation) will be reported to the relevant member of the Environmental Management Team for action and resolution.
- Significant deviations from the environmental policy will be reported to the Corporate Management Team at the next available meeting.
- A report will be submitted to the Environmental Management Steering Group as part of the Management Review process.
- Where preventive actions involve long term programming, these will be considered in the setting of objectives or targets.

Environmental Management Program

ISSUE	Aspect	Potential Impacts	Environmental Action & Monitoring	Conclusion	Action by	Completed and signed Off
TOPOGRAPHY, GEOLOGY AND SOILS	Excavation, stockpiling of excavated material and movement of existing stockpile fill	Soil erosion	Erosion control measures will be installed where there is potential for off-site transport of sediments following demolition, minor excavation & backfilling. Controls will be carried out in accordance with the Soils and Construction Managing Urban Stormwater Manual (Landcom, 2004, known as the "Blue Book"). These will include but are not limited to the following: • Works will not take place during heavy rainfall that is likely to contribute to erosion; • Suitable areas for any temporary stockpiling of excavated soil will be clearly identified and delineated before the commencement of works; • All erosion, sediment control and runoff diversion measures will be established before any excavation begins. These will be left in place throughout works execution and	Earth works during the project have the potential to result in sediment erosion across the works area. Erosion control measures will be put in place to ensure sediment does not escape off site causing impacts on local waterways. Any soil erosion however, is unlikely to escape the site due to the higher elevation of the land surrounding the demolition area. Given the site topography and the implementation of mitigation measures, erosion impacts are not considered to be significant.	Site Manager	

ISSUE	Aspect	Potential Impacts	Environmental Action & Monitoring	Conclusion	Action by	Completed and signed Off
		Changes to topography	Temporary changes to the topography will occur as soil is excavated; however the final topography will be consistent with the current site levels. The existing soil stockpile will be removed to the level of the site prior to stockpiling.			
		Changes to geology	The works will not significantly affect the geology of the area.			
WATER AND DRAINAGE	Excavation of demolition area, stockpiling of excavated material and movement of existing stockpile fill	Soil erosion (including potentially contaminated soils) leading to decreased water quality	Erosion control measures will be installed where there is potential for off-site transport of sediments (see *Topography, Geology and Soils*)	As discussed in *Topography, Geology and Soils* excavation works during the project have the potential to result in sediment erosion across the works area however provided mitigation measures are put in place, water impacts are not considered to be significant. The final elevation and level of the land will be generally consistent with current site		
	Back filling to match existing	Leaching of contaminated materials	Fill material will be tested prior to use. Unsuitable fill will be separated, contained and managed as per the Stockpile Management Plan discussed in *(Contaminated Land)*. This may involve testing under the DECC 2008 Waste Classification Guidelines and removal to a licensed waste disposal facility			

ISSUE	Aspect	Potential Impacts	Environmental Action & Monitoring	Conclusion	Action by	Completed and signed Off
				contours. Impacts on site drainage are considered to be minimal. Prior to use, any fill contained in the onsite stockpile will be screened and tested for compliance with open space standards. If material does not meet criteria it will be managed as per the Stockpile Management Plan discussed in Section 5.8. This may involve testing under the DECC 2008 Waste Classification Guidelines and removal to a licensed waste disposal facility. If insufficient fill can be sourced from the stockpile, clean fill will be imported from an appropriate external source. With such mitigation measures in place it is not considered that significant impacts on water quality will occur.		

ISSUE	Aspect	Potential Impacts	Environmental Action & Monitoring	Conclusion	Action by	Completed and signed Off
FLORA AND FAUNA	Vegetation clearing and earthworks for site decommissioning	Landscaping trees has been planted along the properties; however this will not be affected by the project. Clearing and earthworks would result in the removal of grassed areas. Nevertheless will be reinstated within the works area.	The aim of flora and fauna management is to ensure that flora and fauna species are identified and protected during demolition and construction. It aims to ensure that native wildlife of Australia is conserved in their natural habitats and able to continue to function within their ecosystems. Native environments in Australia are adapted to dry conditions and low-nutrient soils and as such development needs to ensure local conditions are maintained • Erect protective fencing around protected trees , • Install sediment control and tag significant plant species • Machine work corridors in areas of native vegetation will be no greater than 5m wide. • Ensure a buffer zone is kept between construction works and protected trees • Stockpile stores or supplies away from waterways, trenches and the like to prevent encroachment or potential loss of load • Cover trenches to minimise risk of animals becoming trapped • Stockpile topsoil and weed-free native vegetation, then returning topsoil and mulched native vegetation to site	The works area is predominately cleared and consists of grassed areas with some landscaping trees. The works area is unlikely to provide important fauna habitat, particularly for threatened species given the absence of specific habitat attributes within the works area such as hollow bearing trees and aquatic areas. The presence of threatened species on the works area was considered from database records within the local area and it was concluded that the works area was unlikely to provide habitat for these species as discussed above. Mitigation and management measures have been provided to reduce potential		

ISSUE	Aspect	Potential Impacts	Environmental Action & Monitoring	Conclusion	Action by	Completed and signed Off
				impacts to native flora and fauna and it is concluded that the proposal is unlikely to have a significant impact on State and Commonwealth listed threatened species. This conclusion is made based on the assumption that no vegetation will be removed from the undeveloped northern area of the property, the regrowth areas along the property's south or east boundaries, or the landscaping trees along the properties		
AIR AND ENERGY	Demolition works, excavation works and movement of stockpile fill	Dust generation resulting in decreased air quality	Dust screens are to be put up around the edges of the works area in areas facing residences. Dust generating activities will not be undertaken during excessively dry or windy conditions. Earth roads, haulways and stockpiles of fill and excavated material will be kept damp	Demolition and excavation works have the potential to release dust (and very minor quantities of greenhouse gases) to the surrounding environment. The environmental impact is considered minor and short-term. Dust has potential to cause nuisance to neighbours, and the		

ISSUE	Aspect	Potential Impacts	Environmental Action & Monitoring	Conclusion	Action by	Completed and signed Off
			using water carts during works to prevent excessive dust generation. Neighbours will be advised of the timing and duration of works likely to generate dust. A phone line for complaints and other comments will be provided to the local neighbourhood. The Client's Project Manager must be notified immediately if any dust complaints are received.	mitigation and communication measures described are therefore required to ensure that the inconvenience is not significant		
		Emissions from vehicles	All emission controls on work vehicles and equipment will comply with EPA requirements. Work vehicles and equipment will only be left idling when required for the operation of equipment			
		Release of greenhouse gases (climate change)	Operation of the vehicles used to demolish the infrastructure will generate small quantities of greenhouse gases. These will be limited by the emission controls noted above. The change in land use will not result in any significant change in greenhouse gas generation.			

ISSUE	Aspect	Potential Impacts	Environmental Action & Monitoring	Conclusion	Action by	Completed and signed Off
		Release of ozone depleting substances (ODS)	During demolition, if fire extinguishers, refrigerators or air conditioning units are found, they will be assessed for ODS by checking the identification plate. A licensed service technician will be used to collect any identified ODS			
NOISE & VIBRATION	Demolition and back-fill on-site activities	Noise from works area impacting on surrounding residences	*Noise-mechanical plant and/or equipment* measures should be followed: • Site work will be restricted to the hours allowed under the project's DA conditions • Consultation with the residents should begin at an early stage to advise residents on works and to plan for the noisiest activities to occur during times of least disturbance for the residents, where possible. • Minimising the occurrence of ongoing works in the same locality. • Orienting noisy plant or equipment away from sensitive areas.	Site Demolition Works have already been completed by DECC		

ISSUE	Aspect	Potential Impacts	Environmental Action & Monitoring	Conclusion	Action by	Completed and signed Off
			• Carrying out noisy activities such as loading and unloading away from noise sensitive areas where possible - or providing barriers of suitable height to minimise noise impacts where location cannot be changed. • All materials processing equipment will have noise attenuation measures that make the equipment suitable for use in urban areas and which comply with regulatory requirements. The protection measures where necessary will include: o The encapsulation of engine chambers o Fitting NSW EPA approved silencers to all powered operated plant o The feed openings will be covered with rubber curtains o The use of reversing alarms will be restricted. All items of mobile plant and equipment used outside the hours specified above which			

ISSUE	Aspect	Potential Impacts	Environmental Action & Monitoring	Conclusion	Action by	Completed and signed Off
			are required to be fitted with audible reversing alarms, will be fitted with the type which automatically adjust output sound levels according to the prevailing ambient noise level • Ensuring that noise intensive activities at or near ground level which result in impulsive noise generation to nearby residential or sensitive receivers are treated with engineering noise control measures such as temporary hoarding or acoustic barriers • Undertake reasonable steps to manage and control noise from all plant and equipment including excavators, cranes, graders, excavators and trucks. • All combustion engine plants, such as generators and compressors, will be carefully checked to ensure they produce minimal noise, with particular attention to appropriate exhaust silencers. Where practical, machines should be operated at low speed or power and will be switched off when not being used rather than be left idling for prolonged periods.			

ISSUE	Aspect	Potential Impacts	Environmental Action & Monitoring	Conclusion	Action by	Completed and signed Off
			• Equipment or materials that is likely to rattle during shaping and handling, such as engine covers and reinforcing mesh, will be carefully clamped and secured. • Machines found to produce excessive noise compared to industry best practise will be removed from the works area or stood down until repairs or modifications can be made. • Once noisy construction activity commences on site, it will be completed with the minimum of undue delay. In any case, all reasonable attempts should be made to complete significant noisy activities within a short period. • EB will establish and maintain well-publicised contact details, and develop a suitable complaint handling procedure to effectively deal with any issues raised during the work			
	Demolition and back-fill related traffic noise	Increase in road traffic noise from site related	Development should not lead to an (noticeable) increase in existing noise levels of more than 2 dB, where all reasonable and			

ISSUE	Aspect	Potential Impacts	Environmental Action & Monitoring	Conclusion	Action by	Completed and signed Off
		activities impacting on surrounding area	feasible mitigation has been considered. Due to the relatively medium levels of existing road traffic noise on the local roads surrounding the site, an increase in existing noise levels is expected. Best operational practice will be used by all vehicle operators while entering and exiting the site. No additional noise resulting from an increase in traffic volumes is expected during night time periods			
	Demolition and back- fill on-site activities	On-site ground borne vibration impacting on surrounding residential buildings – Potential Structural Damage	One side of site is bounded by neighbouring properties. Best operational practices will be implemented to minimise any potential effect on the surrounding residences, as follows: o Choosing alternative, lower impact equipment or methods where possible; • Scheduling the use of vibration-causing equipment, such as jackhammers, at the least sensitive time of the day;			

ISSUE	Aspect	Potential Impacts	Environmental Action & Monitoring	Conclusion	Action by	Completed and signed Off
			• Routing, operating or locating high vibration sources as far away from sensitive areas as possible; • Sequencing operations so that vibration causing activities do not occur simultaneously; • Isolating the equipment causing the vibration on resilient mounts; and • Keeping equipment well maintained. There are several strategies for managing vibration: • Inform neighbours about the nature of the construction stages and the vibration generating activities ; • Demolition, earthmoving and ground impacting operations are organised (as noted in Demolition Program) so as not to occur in the same period; • No night-time activities will be carried out, thus not applicable			

ISSUE	Aspect	Potential Impacts	Environmental Action & Monitoring	Conclusion	Action by	Completed and signed Off
			• Place as much distance as possible between the plant or equipment and the receivers; and • Readapt 'if necessary an urgent demolition methods (on-site) approved by the Superintendent not involving impact where possible.			
	Demolition and back-fill on-site activities	On-site ground borne vibration impacting on surrounding residents – Human Annoyance	Best operational practices should still be implemented to minimise any potential effect on the surrounding residences, as listed above.			
WASTE MANAGEMENT	Demolition works	Waste generation and potential pollution of the site	All waste material will be disposed of in accordance with the provisions of the *Protection of the Environment Operations Act 1997* and the Waste Classification Guidelines (DECC 2008). All demolition waste will be recycled where possible or disposed of at an appropriately licensed waste disposal facility *as specified in the Wast Management Plan*	Demolition works have already been completed by DECC.		

ISSUE	Aspect	Potential Impacts	Environmental Action & Monitoring	Conclusion	Action by	Completed and signed Off
			For example steel and metals will be segregated and sent to a commercial recycling facility, while concrete will be crushed on site and used as fill if applicable A sufficient number of covered storage bins will be provided for waste disposal on site. Separate bins will be provided for recyclable and non-recyclable waste. All general garbage from the work site at the conclusion of works will be removed All records will be retained as proof of correct disposal for environmental audit purposes			
	Vegetation removal	Waste generation and potential spreading of weeds	Most vegetation on site is not weed, as such green waste will not be suitable for recycling. All green waste will be bagged and sent to an appropriately licensed disposal facility			
CONTAMINATED LAND	Demolition and excavation works	Disturbance of contaminated material	There is a contingency for 'Unexpected Finds', personnel should be prepared for the unearthing of buried asbestos pipe lagging or other contaminants as found.			

ISSUE	Aspect	Potential Impacts	Environmental Action & Monitoring	Conclusion	Action by	Completed and signed Off
HERITAGE – ABORIGINAL & NON-ABORIGINA	Demolition and excavation works	Potential damage to an item of significant Aboriginal heritage	As per the DA and in accordance with section 146 of the *Heritage Act 1977* & section 91 of the *National Parks and Wildlife Act, 1974* • Should any historical relict be unexpectedly discovered on the site all works will be stop immediately and Heritage Council of NSW will be informed • Should any Aboriginal relics be unexpectedly discovered all works will be stopped immediately and the National Parks and Wildlife will be informed The works area is not located in areas of high local significance to Aboriginal archaeology. No below-ground disturbance to areas with a high local significance to Aboriginal archaeology will take place. Below-ground disturbance will not be permitted. Parking of equipment and cars will not take place on the area of the property where an in-situ midden has been identified			

ISSUE	Aspect	Potential Impacts	Environmental Action & Monitoring	Conclusion	Action by	Completed and signed Off
		Potential damage to an item of significant European heritage	No disturbance to the area surrounding the remains of a railway line will take place. Otherwise, as discussed above			
TRAFFIC AND ACCESS	Disturbance of amenity to local residents		Vehicle movements will be restricted to the minimum necessary to complete the work. Vehicle movements will be restricted to the hours 7:00 am to 3.00 pm 6:00 pm weekdays; 8:00 am to 1:00 pm Saturdays (or 7:00 am to 1:00 pm if inaudible at residential premises); and no construction on Sundays or public holidays. Vehicle access to the works area as per the Traffic Management Plan Materials and equipment will be stored securely on site to minimise the vehicle movements on the en-route areas. A phone line for complaints and other	Truck movements associated with the project are not expected to create a significant impact on the wider en-route areas At all times throughout the project the impact on SOPA should be minimised where ever possible.		

ISSUE	Aspect	Potential Impacts	Environmental Action & Monitoring	Conclusion	Action by	Completed and signed Off
			comments will be provided to the local neighbourhood, as per the Noise and Dust sections. The Superintendent will be notified immediately if any traffic complaints are received.			
	Loss of on street parking		EB's vehicles will not block any residential driveways			
SOCIAL AND VISUAL	Demolition Works	Temporary loss of amenity	Work will be completed in the shortest possible time frame. On completion of the work all construction equipment and materials will be removed from the works area	Construction activities will impact on the public and visual amenity of the site during normal working hours for the period of the work. There will be short-term visual impacts associated with work vehicles, site sheds and construction equipment. Site facilities will be located within the DA property. Construction vehicle movement will temporarily restrict the available street parking for members of the public. As these impacts are intermittent and short lived		

ISSUE	Aspect	Potential Impacts	Environmental Action & Monitoring	Conclusion	Action by	Completed and signed Off
				they are not considered to significantly impact on the local residents No significant social or visual impact has been identified following the completion of the proposed works. Removal of the structures and construction of a new fence line around structures and being covered will maintain public safety, which restricts the view of the properties. The visual amenity of the area will therefore not change significantly with the removal of the structures and stockpile.		
		Public safety	Increased security on site, including, warranty singes and secure entry to the site			
	Conclusion of works	Increased view of the site & Maintain public	Site fencing maintained and made invisible by being covered by suitable invisible materials during removal of hazardous materials.			

ISSUE	Aspect	Potential Impacts	Environmental Action & Monitoring	Conclusion	Action by	Completed and signed Off
		safety				
AIR QUALITY	Excavation Works	Odour & Emissions generations and air quality	• All Contractors to use treatment methods and equipment having emissions which comply with NSW EPA requirements • All loads of contaminated materials leaving the site will be securely covered • There will be no burning of any material on-site throughout the rehabilitation program • Ensure trafficable areas are clearly defined in off road areas to prevent unnecessary vehicle movement and surface disturbance. • Use cleaner fuel technologies where possible The prevailing weather conditions will be considered in the manner in which work is undertaken	All practicable measures will be taken to ensure that fugitive emissions emanating from within the site are minimized such nuisance odours cannot be detected outside the site boundaries and the ambient air quality is not adversely impacted. The ambient air monitoring program and the on-site monitoring program will monitor odour levels at the site boundary and within the property throughout the project		
		Dust generations	• A tarpaulin will securely cover all loads of soil or contaminated material; entering or leaving the site	All practicable measures will be taken to ensure that dust emanating from within the		

ISSUE	Aspect	Potential Impacts	Environmental Action & Monitoring	Conclusion	Action by	Completed and signed Off
			• Water sprays will be used across the site over unsealed or bare surfaces • Plastic sheeting will be used by Contractors to cover excavation faces and stockpiles where necessary • Materials at the site will be processed, handled, moved and stored in a proper and effective manner in order to minimize exposure • No material processing (crushing/screening) shall be undertaken on-site	site is minimized and remains within acceptable levels		
WATER MANAGEMENT	All Works	Water pollution	• If required any stormwater pits in areas subject to remedial works shall be sealed off to prevent stormwater leaving these areas of the site. This work will occur following the construction of any temporary stormwater retention basins in any areas of concern • Temporary stormwater retention basins will be constructed to control runoff from unremediated areas of the site. The retention basins will be constructed to have a capacity to retain storm events	In order to protect the environment during extreme rainfall events, bunding and silt fences will be installed along down-gradient boundaries of the site		

ISSUE	Aspect	Potential Impacts	Environmental Action & Monitoring	Conclusion	Action by	Completed and signed Off
			having a 10 year design ARI of critical duration. Any concentrated flows into the retention basin will be either piped directly into basin or flow down the batter slops. Any basins formed will be by excavations placed in suitable areas at each stage of the project • Routine inspections and maintenance of equipment to prevent spills and release of noxious emissions • Ensure appropriate bunding of chemicals and fuels to prevent spillage • Install appropriate drainage infrastructure to prevent the transfer of pollutants into natural waterways • Install gross pollutant traps at stormwater outlets in consultation with asset owner • Install an oil-water separator and connecting with fuel and chemicals bunds to prevent water and soil pollution (if required) • Use less toxic products or biodegradable products where a suitable alternative exists, eg biodegradable rock-drill oil • Dispose of waste product that cannot be recycled to a licensed landfill that can accept the given product			

ISSUE	Aspect	Potential Impacts	Environmental Action & Monitoring	Conclusion	Action by	Completed and signed Off
		Erosion and sediment	Refer to (Erosion and Sedimentation Control Plan)			
EQUIPMENT AND OPERATION	All Works	Spreading of materials off-site	Throughout the project, controls will be placed on the operation and movements of equipment. General procedures that will be implemented include the following: • Equipment working within an excavation area will be washed inside the area so that any wash water will run into the excavation. Wash waters will be allowed to naturally evaporate or be removed from the excavation along with other ponded surface water. • Truck washing facilities will be provided for the effective cleaning of equipment after they have been loaded with contaminated fill or liquid wastes, and prior to their leaving the site. The facilities will also be used to clean other earthmoving plant and equipment used on-site • The surfaces of internal access roads carrying vehicular traffic will be kept clean • All trucks transporting material off-site shall be securely covered immediately after loading the fill to prevent windblown emissions and spillage. Such covering	Truck movements associated with the project are not expected to create a significant impact on the wider en-route areas		

ISSUE	Aspect	Potential Impacts	Environmental Action & Monitoring	Conclusion	Action by	Completed and signed Off
			shall be maintained until immediately before unloading the trucks • All truck tailgates shall be securely fixed prior to loading and immediately after unloading material • No trucks or equipment carrying contaminated materials shall be allowed to move across remediated areas except across designated transportation corridors • All vehicles transporting materials on-site shall be operated in a manner so as to prevent any loss of materials during loading, transport and unloading activities • Any storage tanks or drums used for fuels or liquids shall be bunded and the bund shall contain at least 110% of the largest tank contain or 25% of the total volume of all drums, whichever is the greater, and the bund shall not be penetrated by any services.			
Chemical			Using chemical material on the job site shall be in accordance to the manufacturers' instructions and directions as per the SDS Refer to SWMS for safe procedures			

A1 Environmental Management Program Guidance

The following sub-headings are examples of environmental issues to be managed. The table under each sub heading shows examples of the type of controls that should be specified for moderate to high risk projects (Major Works) and each issue should be dealt with as a management plan. .

A1.1 Water management

The aim of water management is to ensure that no deterioration in water quality occurs within groundwater supplies and surface water bodies during construction. It also aims to ensure water conservation measures are in place.

Examples of preventative measures are:

- *Ensure routine inspections and maintenance of equipment to prevent spills and release of noxious emissions*
- *Ensure appropriate bunding of chemicals and fuels to prevent spillage*
- *Install appropriate drainage infrastructure to prevent the transfer of pollutants into natural waterways*
- *Install gross pollutant traps at stormwater outlets in consultation with asset owner*
- *Install an oil-water separator and connecting with fuel and chemicals bunds to prevent water and soil pollution*
- *Use less toxic products or biodegradable products where a suitable alternative exists, eg biodegradable rock-drill oil*
- *Install environmental measures to prevent contaminated material or product from leaching or flowing into groundwater and waterways*
- *Dispose of waste product that cannot be recycled to a licensed landfill that can accept the given product*

A1.2 Erosion and sediment control

The aim of erosion and sediment control is to prevent the displacement of soils. This is important, as the top layer of soil containing the growing medium may be lost along with valuable native seed stock. A site may become unworkable or inaccessible and displaced sediment may choke waterways and stormwater pipes and transfer harmful substances and nutrients in bushland, creeks, lakes, estuaries, lagoons or beaches.

The effectiveness, maintenance of erosion and sediment controls may include but is not limited to: sedimentation basins; site grading; catch drains; diversion drains; pipes and banks; silt fences; geotextile materials; energy dissipaters, perforated riser type sedimentation basin discharge pipes, sedimentation basin baffles, non-erodible spillways, sedimentation basin flocculants and soil stabilisation measures. Soil stabilisation may also include the use of temporary vegetation, temporary covers, mulch mats and hydro mulching so as to ensure there is no soil loss to the surrounding area.

Examples of preventative measures are:

- *Prepare an erosion and sedimentation control diagram for site(s)*
- *Locate all stockpiles away from trafficked areas and ensure that they are not located in drainage lines, stormwater drains or watercourses.*
- *Install silt fences around the low side of stockpiles to prevent erosion and loss of material.*

A1.3 Flooding and hydrology management

The aim of flooding and hydrology management is to reduce the impacts of flooding on the project by minimising the ingress of floodwaters into the system.

An example of preventative measures is:

- *Locate and fuel storage sites a minimum of 0.3m above the 100 year flood leve*

A1.4 Flora and fauna management

The aim of flora and fauna management is to ensure that flora and fauna species are identified and protected during construction. It aims to ensure that native wildlife of Australia are conserved in their natural habitats and able to continue to function within their ecosystems. Native environments in Australia are adapted to dry conditions and low-nutrient soils and as such development needs to ensure local conditions are maintained.

Examples of preventative measures are:

- *Erect protective fencing around protected trees or bushland,*
- *Install sediment control and tag significant plant species*
- *Machine work corridors in areas of native vegetation will be no greater than 5m wide.*
- *All tree pruning is to be undertaken by qualified arborists.*
- *Cover open trenches or install fencing at night to prevent animals becoming trapped.*
- *Fill trenches immediately after the pipe has been laid to ensure fauna cannot be trapped in the trench*
- *Relocate a work site so as to: minimise disturbance of bushland; or to maintain a wildlife corridor; or prevent a hanging swamp being drained, etc.*
  Ensure a buffer zone is kept between construction works and bushland
- *Increase or position erosion and sediment controls to protect neighbouring bushland or waterways*
- *no operation of heavy equipment, ie manual operation only of equipment in bushland to minimise injury to wildlife and minimise bushland disturbance*
- *Stockpile stores or supplies away from waterways and bushland to prevent encroachment or potential loss of load*
- *Cover trenches to minimise risk of animals becoming trapped*
- *Collect native seed stock from area prior to clearing*
- *Revegetation of areas with native plants from local native seed stock*
- *Stockpile topsoil and weed-free native vegetation, then returning topsoil and mulched native vegetation to site*
- *Prevent the introduction or spread of weed species by avoiding introducing fill to a site, washing equipment and machinery before leaving a site and entering a new site, and using a native mulch for regeneration works*

A1.5 Visual, landscaping and rehabilitation management

The aim of visual, landscaping and rehabilitation is to restore all disturbed areas to as near as possible their original condition and as soon as practicable and to ensure that sufficient visual screening is implemented. Plant species of local origin will be used for landscaping disturbed sites. A weed control program should also be developed if necessary.

Examples of preventative measures are:

- *All trenches on road shall be restored progressively as construction proceeds.*
- *Landscaping and structures on private properties will be restored to a condition that is acceptable to the owner to at least the standard prior to construction.*
- *Branches removed from areas to be excavated will be used in restoration of native bush areas as brush matting.*

A1.6 Heritage Management - Aboriginal and non-aboriginal

The aim of Aboriginal and non-aboriginal management is to ensure that any Aboriginal and non-aboriginal heritage items are identified and protected during construction.

Examples of preventative measures are:

- *Field surveys are to be carried out with representatives of local Aboriginal groups prior to construction.*
- *If any Aboriginal site or relic is unearthed or uncovered works shall cease immediately and the NPWS shall be consulted prior to recommencement of works.*
- *Hand trenching techniques shall be used in the vicinity of heritage items identified in the EIS/REF.*

A1.7 Noise and vibration management

The aim of noise and vibration management is to minimise impacts on local residents. This should be done by minimising exposure of residences to noise and vibration, and carefully positioning construction equipment wherever possible to minimise noise exposure.

Examples of preventative measures are:

- *Fit all mobile plant / equipment used on site with residential type silencers.*
- *Provide noise barriers/earth mounds at sensitive locations, affected dwellings on in close proximity to plant and equipment*
- *Install silencers upgraded mufflers, acoustic louvers on radiator grills on equipment, and enclosure of engine compartments*
- *Upgrading noise controls on extraction fans, conveyors, etc.*
- *Ensure all equipment purchased or contracted on site compiles with the Australian Standard for that equipment by undertaking noise testing prior to use on site*
- *Minimise hours of operation including truck deliveries to prevent public nuisance*
- *Suspend drilling or tunnelling operations until sufficient distance from affected properties, ie over weekends and after hours*
- *Notify community when noisy construction activity is to commence and finish*
- *Install noise barriers in construction compounds or around noisy equipment*
- *Line hopper or weigh bins of concrete batchers with wear resistant rubber to minimise noise*
- *Minimise regenerative noise and vibration, ie in Tunnel Boring Machine (TBM) operation by reducing forward pressure or changing cutter types*
- *Undertake dilapidation surveys of potentially effected properties prior to commencing works and after completion of works, if required.*

A1.8 Traffic and access management

The aim of traffic and access management is to ensure that existing road conditions are maintained as practicable, to minimise traffic disruptions and that construction activities provide safe and convenient access to local roads.

Examples of preventative measures are:

- *All property owners are to be notified in writing at least two weeks prior to work commencing, of the intention to enter a property for survey or pipeline installation purposes.*
- *Trucking movements in the vicinity of schools during school terms will be limited to the hours of 10:00 am to 3:00 pm to avoid sensitive traffic. (eg. School and commuter traffic)*
- *Install safety barriers between the excavation & roadway where the excavation is within 6m of road edge*
- *Encourage prefabrication or assembly off site*
- *Have heavy vehicles follow a designated route that is agreed to with local councils*
- *Provide suppliers with a traffic specification to ensure hours of operation and designated route are conformed to*
- *Employ traffic controller(s) to control traffic flows, reduce public nuisance and prevent accident or injury*
- *Minimise vehicle movements during 'pick up' and 'drop off' times at local school, if proximate to construction traffic route*
- *Apply speed restrictions for construction vehicles on local roadways to prevent accidents or injury to wildlife in bushland areas*
- *Minimise construction associated parking in local residential streets*
- *Implement carpooling and provide a transport service for shift workers to minimise vehicle usage*

A1.9 Air quality management (dust, odour, emissions)

The aim of air quality management is to ensure that no deterioration in air quality occurs adjacent to construction sites. It aims to minimise dust creation, avoid use of ozone depleting substances, minimise impacts of exhaust emissions and have no odour impacts as a result of construction activities.

Examples of preventative measures are listed below:

- *Use a water tanker to suppress dust on site during construction*
- *Ensure trafficable areas are clearly defined in off road areas to prevent unnecessary vehicle movement and surface disturbance.*
- *If stockpiles are to be left for extended period, they should be seeded to stabilise the surface or stockpile will be covered.*
- *Use low volatile organic compound (VOC) paints*
- *Use low toxic adhesives*
- *Eliminate where possible use of hydrochlorofluocarbons, HFC and CFCs;*
- *Use cleaner fuel technologies where possible*
- *Ensure vehicles and equipment are emissions tested to ensure no visible smoke (ie for longer than 10 seconds)*
- *Emission test all equipment and vehicles prior to use on site*
- *Incorporate low energy demand into the construction design phase*
- *Implement measures to minimise dust generation, such as compacting trafficable areas, temporarily sealing haulage or frequently used unsealed roadways, using a water cart to suppress dust, installing an irrigation system for stockpile management, etc*
- *Implement measures to minimise odour emissions from sewage sources*
- *Install site screening to minimise dust transfer*

A1.10 Land acquisition management

The aim of land acquisition management is to ensure that owners of affected properties are identified and notified. Land will be acquired in accordance with the Land Acquisitions (Just Terms Compensation) Act 1991.

A1.11 Contaminated soil management

The aim of contaminated soil management is to ensure that contaminated soils encountered during construction are appropriately contained and disposed of so as to minimise environmental impact.

A1.12 Acid sulphate soil management

The aim of acid sulphate soil management is to ensure that acid sulphates soils encountered during construction are appropriately contained and managed so as to minimise environmental impact.

A1.13 Waste and resources management

The aim of waste and resources management is to avoid and reduce waste generation and re-use and/or recycle waste when possible.

Examples of preventative measures are:

WASTE MANAGEMENT

- *Provide clearly marked waste segregation bins/skips with appropriate colour coding to encourage compliance. This may include: concrete and cement, paving materials, timber, steel, electricals (lead copper, zinc), glass, plastic, paper products, etc.*
- *Ensure suppliers pick up packaging for recycling or reuse, eg pallets*
- *Encourage suppliers to use sustainable/ recyclable packaging, eg metal strapping instead of shrink Wrap, paper packaging as opposed to plastic, shredded paper as opposed to foam*
- *Develop a procedure for managing liquid and hazardous waste*
- *Testing of excavated material for contamination before disposal*
- *Ensure clear segregation of clean material or fill from contaminated fill or materials*
- *Avoiding import of fill material by backfilling site with stockpiled excavated material*

- *Ensure no green fill waste, top soil, tyres, steel, petroleum products or containers are sent to landfill, but recycled by supplier, recovery centres or councils*
- *Screening and crushing concrete waste for reuse*
- *Use waste contractors that differentiate recycled and landfilled waste in their invoicing and provide volumes and weight for accurate waste reporting*
- *Appointing person(s) to monitor waste management, segregation and supervise subcontractors*
- *Ensure waste minimisation strategies and reporting requirements are incorporated into subcontractor contracts*
- *Disposing all waste that cannot be recycled at an appropriate EPA licensed or Council approved waste facility.*
- *Disposing cleared trees by saw milling the suitable logs and wood chipping the branches and roots. Place large capacity steel bins on-site for collection of scrap metal to be emptied at regular intervals by a licensed recycling sub-contractor*

RESOURCE MANAGEMENT

- *Use recycled products or a suitable substitute where they exist (ie recycled concrete, crusher dust for pipe bedding, and fly ash as a substitute for sand in concrete)*
- *Use recycled or plantation timbers in preference to hardwoods (see list attached, Appendix 1)*
- *Purchase products or selling left over stock using a reuse resource service (ie free listing on the ARR network, ph: 02 4262-2200)*
- *Use reusable storage containers and requesting minimal packaging from suppliers*
- *Recover waste and ensuring segregation of recyclable products*
- *Reclaim water from processing using hoppers/containers and reusing (ie drilling fluid, sediment basins, stormwater for dust suppression)*
- *Purchase energy efficient equipment, (ie pumps, office equipment, etc)*
- *Purchase 'green power' from electricity provider to minimise carbon dioxide emission contributing to the greenhouse effect*
- *Use products that require minimal energy to produce (see BES of products, Appendix 2)*
- *Minimise the import of fill material*
- *Use steel where appropriate in preference to aluminium, which has a higher embodied energy*
- *Purchase low maintenance materials to minimise non-renewable energy demands*
- *Consider the life-cycle of products when purchasing, ie the pollution generated and resources depleted to extraction, manufacture and produce the product*
- *Minimise the use of PVC, ie using PVC free electrical cabling, and other PVC alternatives such as: vitreous clay pipes; fibre cement pipes; ductile iron pipes; galvanised steel; and telfon glass coating for fabric shade structures*

A1.14 Energy management

Energy management aims to encourage the conservation and efficient use of energy during construction.

- *Use modern equipment and minimise idling times*

A1.15 Utilities and services management

The aim of utilities and services management is to avoid disruption or damage to services.

Examples of preventative measures are:

- *Map gas, water, telecommunication and electricity services and other underground services*
- *Alter and pay for any existing utilities to be moved as necessary*
- *Advise local residents and businesses on any disruptions to services.*

A1.16 Hazards and risk management

The aim of hazards and risk management is to avoid potential human health and environmental effects from exposure to fuels and hazardous chemicals. It also aims to minimise potential for workplace accidents related to works.

Examples of preventative measures are:

- *Minimise chemicals and fuel stored on site.*
- *Store fuels and chemicals in bunded areas.*
- *All work sites are to have spill kits.*
- *Prepare bushfire prevention procedures for works located in urban and bushland non-residential areas*

FORTNIGHTLY ENVIRONMENTAL CHECKLIST				
Project:		**Inspection Date:**		
Weather Conditions: Dry ☐ Rain ☐ Slight Wind ☐ Calm ☐ Strong Wind ☐				
REF	**CHECK EFFECTIVENESS OF CONTROL MEASURES**	**YES No N/A**	**COMMENT/NOTES**	**ACTION COMPLETED (Name/date)**
WATER QUALITY / SOIL CONSERVATION				
1	Are erosion and sediment controls in place? (i.e below disturbed areas, around s/w inlets, excavated drainage lines, stockpiles, etc).			
2	Are there any areas where erosion and sediment controls could be improved or added? **Are they in good condition?**			
3	Are there any areas where site runoff from disturbed areas could leave site or enter nearby properties?			
4	Are sediment/stormwater detention areas and sediment traps being maintained in an operable condition? **Is capacity available for rain?**			
5	Are waste concrete disposal areas and wash out facilities for tools and brushes available? **Are they in good condition?**			
6	Are records being kept of dewatering activities including water quality results? (use Dewatering Checklist)			
7	Are trucks fully and securely covered before leaving site and entering public roads?			
8	Are roads being maintained free of all waste, loose sand, soil and clay deposits?			**(NOTE: NO HOSING PERMITTED)**
9				

REF	CHECK EFFECTIVENESS OF CONTROL MEASURES	YES No N/A	COMMENT/NOTES	ACTION COMPLETED (Name/date)
	AIR QUALITY			
10	Is airborne dust evident?			
11	Are adequate dust control measures in place for the activities being undertaken? (i.e to prevent dust leaving site)			
12	Are dust barriers (screening on fences) in a good and operable condition (where applicable)?			
13	Are exhaust emissions from plant and equipment evident for more than 10 seconds (continuous)?			
	NOISE AND VIBRATION			
14	Are high noise generating activities occurring on site? (e.g piling, ripping?) **Can the noise or impact on the receiver be better controlled or minimised**?			
15	Do any activities require an acoustic barrier/enclosure to minimise the potential for noise related complaints?			
16	Is noise monitoring required to assess noise levels?			
17	Are construction activities and deliveries limited to approved working hours **at all times** (unless approved)?			
	HAZARDOUS SUBSTANCES & LIQUIDS			
18	Are all liquid storage containers in secure, impervious bunds? **No unbunded containers permitted on site**.			
19	Are spill kits well stocked and available near 'active' work areas and storage bunds? **Check stocks**			

REF	CHECK EFFECTIVENESS OF CONTROL MEASURES	YES No N/A	COMMENT/NOTES	ACTION COMPLETED (Name/date)
	WASTE MANAGEMENT			
20	Are recycling facilities available in the office? **Are they being used correctly?**			
21	Are excess construction materials being set aside for reuse or recycled where possible? **Look for new opportunities for reuse and recycling**			
22	Has any contaminated waste, soil or water been removed from site? **If yes, have records been kept for the transport and disposal of the material at a licensed facility?**			
	COMMUNITY LIAISON & CONSULTATION			
23	Are project stakeholders being notified of upcoming construction activities that have the potential to impact their operations? (eg. noise, temporary change of hours)			
24	Is signage in place at the site gate providing site contact details (name and number) should the community wish to make an enquiry or complaint?			
	TREE AND HERITAGE PROTECTION			
25	Are 'no go zones' (e.g protected trees) clearly identified by fencing and signage to prevent unauthorised access or damage?			
26	Are works, waste and building materials being stored away from protected trees including their root zones?			
	OTHER OBSERVATIONS			
27	Is access being maintained (pedestrians and vehicles)?			

Name:	Signature:	Date: