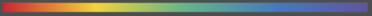
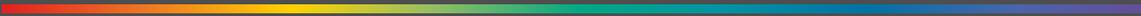


RICHARD CROOKES

CONSTRUCTIONS

**LANG WALKER MEDICAL RESEARCH BUILDING
JOB NO. 1317**

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP)

26 February 2024



DOCUMENT INFORMATION

CLIENT:	RICHARD CROOKES CONSTRUCTIONS (RCC)
Project:	Lang Walker Medical Research
Project Number:	1317
Report Title:	Construction Environmental Management Plan - CEMP
Date:	26 February 2024
Revision Number	5
Reviewed By:	Daniel Bennett / Jimmy Pham

REVISIONS / AMENDMENTS

REVISION #	DATE	AMENDED BY
1	12 October 2023	Daniel Bennett
2	12 October 2023	Daniel Bennett
3	31 October 2023	Daniel Bennett
4	31 January 2024	Jimmy Pham
5	26 February 2024	Jimmy Pham

CONTENTS

1	INTRODUCTION	5
1.1	PROJECT OVERVIEW	5
1.2	HOURS OF WORK	5
1.3	24 HOUR CONTACT DETAILS OF SITE MANAGER	5
1.4	FACILITIES	5
1.5	CEMP OBJECTIVES	5
1.6	REPORTS RELIED UPON IN PREPARING THIS CEMP	6
2	ROLES AND RESPONSIBILITIES	7
2.1	PROJECT ORGANISATIONAL STRUCTURE	7
2.2	PARTIES AND RESPONSIBILITIES	7
3	IMPLEMENTATION OF CEMP	9
3.1	SITE INDUCTIONS AND TRAINING	9
3.2	CEMP INDUCTION	9
3.3	TOOLBOX MEETINGS	9
3.4	PERSONAL PROTECTIVE EQUIPMENT	9
3.5	RESPONSIBILITY AND REPORTING	10
4	LEGISLATION	11
5	OCCUPATIONAL HEALTH AND SAFETY	14
5.1	RESPONSIBILITIES	14
5.2	HAZARDS	14
5.3	POTENTIAL CHEMICAL HAZARDS	15
5.4	PHYSICAL HAZARDS	15
5.5	UNDERGROUND SERVICES	16
5.6	ABOVE GROUND ELECTRICAL HAZARDS	16
5.7	MANUAL HANDLING	17
5.8	NOISE	17
6	ENVIRONMENTAL MANAGEMENT	18
6.1	POTENTIAL ENVIRONMENTAL ISSUES	18
6.2	GENERAL STRUCTURE OF ENVIRONMENTAL MANAGEMENT	18
7	MANAGEMENT OF DUST & ODOUR: AIR QUALITY	20
7.1	SUMMARY OF POTENTIAL IMPACTS	20
8	MANAGEMENT OF COMMUNITY CONSULTATION AND COMPLAINTS HANDLING	22
8.1	SUMMARY	22
8.2	WAYS TO CONSULT	22
8.3	LETTERBOX DROPS AND PUBLIC NOTICES	22
8.4	COMMUNICATION PROTOCOLS	23
8.5	IDENTIFICATION OF STAKEHOLDERS	23
8.6	COMPLAINTS HANDLING	24

9	STORMWATER CONTROL & DISCHARGE: SURFACE WATER	25
9.1	SUMMARY OF POTENTIAL IMPACTS	25
9.2	PROCEDURES	25
10	MEASURES OF SEDIMENT CONTROL	27
10.1	SUMMARY OF POTENTIAL IMPACTS	27
10.2	PROCEDURES	27
11	ENVIRONMENTAL MANAGEMENT MEASURE ELEMENT: WASTE MANAGEMENT	29
11.1	SUMMARY OF POTENTIAL IMPACTS	29
11.2	PROCEDURES	30
12	ENVIRONMENTAL EMERGENCY	32
13	SECURITY AND PUBLIC SAFETY	33
13.1	RESTRICTION TO ACCESS	33
13.2	PEDESTRIAN AND TRAFFIC CONTROL	33
13.3	OUTDOOR LIGHTING	33
14	REPORTING	34
14.1	NON-COMPLIANCE	34
14.2	ENVIRONMENTAL INCIDENT	34
14.3	REPORTING AND CORRECTIVE ACTIONS	34

Appendices

APPENDIX A - SITE LOCATION & PROPOSED DEVELOPMENT PLAN

APPENDIX B - CONSTRUCTION TRAFFIC & PEDESTRIAN MANAGEMENT PLAN

APPENDIX C - CONSTRUCTION WORKER TRAVEL PLAN

APPENDIX D - CONSTRUCTION WASTE MANAGEMENT PLAN

APPENDIX E - UNEXPECTED FINDS PROCEDURE

APPENDIX F - SOIL REMEDIATION MANAGEMENT PLAN

APPENDIX G - ASBESTOS MANAGEMENT PLAN

APPENDIX H - CONSTRUCTION NOISE & VIBRATION MANAGEMENT PLAN

APPENDIX I - FLOOD EMERGENCY RESPONSE PLAN

APPENDIX J - BUSHFIRE EMERGENCY MANAGEMENT & EVACUATION PLAN

APPENDIX K - EROSION AND SEDIMENT CONTROL PLAN

APPENDIX L - OUTDOOR LIGHTING PLAN

1 INTRODUCTION

1.1 PROJECT OVERVIEW

The Lang Walker AO Medical Research Building – Macarthur is a development in partnership between Western Sydney University (WSU), the South Western Sydney Local Health District (SWSLHD), Health Infrastructure (HI), the Ingham Institute of Applied Medical Research (Ingham Institute), and the University of New South Wales, Sydney (UNSW). RCC is the Principal Contractor

The project is located within the Campbelltown Hospital Precinct, with access to site off 100 Parkside Avenue, Campbelltown.

The works are the design and construction of a multi-faceted research facility that forms part of an integrated hospital and research precinct delivering world-class research and improved health outcomes for the Macarthur region and wider community. The building is primarily a concrete reinforced structure which is clad with metal wall, roof, and ceiling linings. Below the metal wall cladding is masonry construction. The Lang Walker AO Medical Research Building – Macarthur is a 4-storey building providing medical research facilities within the Campbelltown Hospital Campus.

1.2 HOURS OF WORK

Construction, including the delivery of materials to and from the site, may only be carried out between the following hours:

a. Mondays to Friday - 7am - 7pm

b. Saturday - 8am - 4pm

c. No work may be carried out on Sundays or public holidays (conditional)

***Refer to SSDA and Construction Noise and Vibration Management Sub-Plan for criteria.**

1.3 24 HOUR CONTACT DETAILS OF SITE MANAGER

Site Manager: Arthur Bakouris - 0400 240 191

1.4 FACILITIES

ON-SITE FACILITIES

- Amenities/Ablution/Change
- Site Office/Lunch Rooms
- Vending Machines

1.5 CEMP OBJECTIVES

This CEMP has been prepared in accordance with planning approval SSD-17491477.

This document is an operational CEMP which provides the framework necessary to implement the required management measures associated with the proposed excavation and construction works. Once implemented the objective of the management measures will be to ensure that the excavation of materials present at the site can be carried out without significant adverse

impact on the environment or the health of the site workers and neighbouring residence. The management and monitoring aspects and Principal Contractor responsibilities covered in this CEMP include air quality, sediments, surface water, waste, site security, emergencies and the relevant sub-plans referenced within the appendices.

RCC notes that this CEMP will focus on mitigating and managing environmental and human health issues associated with the excavation works proposed at the site. The CEMP will provide task specific (i.e. operational hours, noise mitigation, traffic control, environmental management, erosion sediment control plan) measures for the proposed construction works.

The primary objective of the CEMP is to provide a management framework to mitigate potential environmental and human health risks associated with excavation and early construction works. The objectives can be summarised as follows:

- Prevent, reduce, and effectively manage potential impacts to the environment resulting from excavation works, material handling and associated spoil disposal.
- Ensure that environmental management is undertaken in accordance with relevant legislative and policy requirements.
- To ensure the site is suitable for the proposed land use, in reference to contamination; and
- Promote environmental awareness amongst employees and contractors.

1.6 REPORTS RELIED UPON IN PREPARING THIS CEMP

The CEMP framework provided in this document has relied upon information provided in the following reports;

- Construction Traffic Management Plan
- Construction Worker Travel Sub-Plan
- Construction Waste Management Plan
- Unexpected Finds Protocol for contamination & associated communications procedure
- Unexpected Finds Protocol for Aboriginal and non-aboriginal heritage and associated communications procedure
- Soil Remediation Management Plan
- Asbestos Management Plan
- Construction Noise & Vibration Management Sub-Plan
- Flood Emergency Response Plan
- Bushfire Emergency Management & Evacuation Plan
- Erosion & Sediment Control Plan
- Outdoor Lighting Plan

2 ROLES AND RESPONSIBILITIES

The following sections set out the organisational structure for the project.

2.1 PROJECT ORGANISATIONAL STRUCTURE

All personnel including the Consultants, Contractors, Subcontractors, and all other personnel associated with undertaking excavation and construction works on the project ultimately report to the Principal Contractor.

The Principal Contractor will be responsible for implementing this CEMP. This will specifically involve monitoring the environmental performance of the works and ongoing compliance with legislative requirements, this CEMP, and all other associated environmental management documentation, development of a construction management plan (CMP), operational and post-construction monitoring and reporting.

2.2 PARTIES AND RESPONSIBILITIES

The parties involved with, and their responsibilities during, the environmental management of the works are provided in Table 1.

Table 1: Project Parties and Responsibilities

PARTY	RESPONSIBILITIES	REPORTS TO
<p>THE PRINCIPAL CONTRACTOR RICHARD CROOKES CONSTRUCTIONS</p>	<ul style="list-style-type: none"> • Ensure all works are implemented in accordance with the CEMP. • Promote awareness of appropriate environmental management and occupation health and safety (OHS) practices to the Project Manager. • Ensure the Project Manager is aware of the CEMP and site-specific issues. • Review risks and identify potential opportunities and issues with the project. • Monitor and inspect activities for compliance with relevant environmental requirements, including ensuring suitable management plans have been submitted and approved prior to undertaking works. • Ensure environmental incidents and non-compliances are reported promptly and investigated. • Undertake environmental audits on the project at a frequency deemed appropriate to the length of the project. • Periodically review the performance of the Principal Contractor Project Manager in meeting the objectives of the CEMP via regular audits. The audits will review the Principal Contractor Project Manager's activities to ensure that environmental hazards have the appropriate mitigation controls in place. Improvement requests and non-compliances will be monitored, and corrective action undertaken. • Maintain an environmental audit register to record & close out any actions raised. 	<p>The Client Project Manager,</p>

PARTY	RESPONSIBILITIES	REPORTS TO
THE CLIENT PROJECT MANAGER	<ul style="list-style-type: none"> • The Client Project Manager is appointed by the Client. • Primary contact overseeing the day-to-day operations at the Site. • Primary contact for all personnel in relation to site works and environmental management. • Review risks and identify potential opportunities and issues with the project. • Monitor and inspect activities for compliance with relevant environmental requirements, including ensuring suitable management plans have been submitted and approved prior to undertaking works. • Ensure environmental incidents and non-compliances are reported promptly and investigated. 	The Client,
ENVIRONMENTAL SPECIALIST / ENGINEER ENVIRONMENTAL STRATEGIES	<ul style="list-style-type: none"> • Comply with this CEMP. • Provide advice where required to the Principal Contractor in relation to environmental issues associated with the works, if requested. • Responsible for implementing this CEMP and all required environmental controls. • Undertake onsite and offsite air monitoring. • Conduct environmental incident investigations, if requested by the Project Manager. • Demonstrate an understanding and management of the potential environmental impacts associated with the project. • Review risks and identify potential opportunities and issues with the project. • Ensure all Subcontractors under their control are appropriately informed of the relevant components of environmental management documentation. • Report all environmental incidents, hazards, non-compliances and near misses to the Principal Contractor Project Manager immediately. • Implement corrective action responses to environmental incidents and non-compliances in consultation with the Project Manager. • Provide a validation report at the end of the project for review of the Site Auditor. 	The Principal Contractor
SUB-CONTRACTORS	<ul style="list-style-type: none"> • Implement and comply with relevant components of this CEMP. • Report all environmental incidents, hazards, non-compliances and near misses to the Principal Contractor immediately. • Implement corrective action responses to environmental incidents and non-compliances as required by the Principal Contractor. 	The Principal Contractor

3 IMPLEMENTATION OF CEMP

3.1 SITE INDUCTIONS AND TRAINING

All personnel, including the Principal Contractor's staff and subcontractors, who will be working on the project or will require regular access to the sites will be required to undertake training and site inductions including environmental requirements as required by the Principal Contractor. All personnel are recommended to demonstrate an understanding of potential environmental issues and the measures that will be implemented to protect the environment and local community, as detailed in this document.

3.2 CEMP INDUCTION

The CEMP awareness induction will cover:

1. Outlining the objective and purpose of the works; and
2. Contents of the CEMP and their (the workers) responsibility.

All site workers will sign the induction paperwork acknowledging understanding of this CEMP discussed during inductions. All induction sessions will be recorded in the induction register.

3.3 TOOLBOX MEETINGS

The Principal Contractor will also conduct toolbox meetings with all personnel to review management procedures and identify / discuss site conditions and potential hazards. Site inductions and toolbox talks will highlight specific environmental requirements and activities being undertaken at the worksite.

A record of issues covered in toolbox meetings will be maintained for future audit.

3.4 PERSONAL PROTECTIVE EQUIPMENT

All site personnel will be provided with, utilise, and be appropriately trained in the requirements of personal protective equipment (PPE). PPE requirements will depend on the activity or situation, but may include the following:

- High visibility clothing.
- Protective clothing and footwear.
- Eye protection.
- Respirable (half-face) masks as required.
- Hard hat as required (i.e. in the vicinity of the working excavator or other overhead plant) and
- Sun protection as required (long sleeves, sunscreen, hat, or hard hat fitted with wide brimmed sun protection).

Personnel will be trained in the requirements and use of PPE to an appropriate level according to responsibilities.

PPE requirements is recommended to be detailed in the Safe Work Method Statements (or similar) which will be provided to the Principal Contractor for review and endorsement. Additional PPE will be required to carry out some aspects of the construction process and the

PPE outline above is only to be considered as the basic requirements. Additional PPE will be required if works are to be conducted in asbestos contaminated work environment.

3.5 RESPONSIBILITY AND REPORTING

The Principal Contractor is responsible for ensuring that all personnel under their jurisdiction have been provided with adequate training in the areas outlined in this document.

The principal contractor will complete weekly safety and environmental walks, with the critical information included in the monthly report.

The Principal Contractor will maintain records of all personnel who have undergone training in relation to the CEMP and general environmental responsibilities. Records of trained personnel will be maintained in a log to be kept on site. A record of issues covered in toolbox meetings will be maintained.

The Principal Contractor will ensure that anyone who appears to lack an understanding in the above areas undergoes adequate re-training.

4 LEGISLATION

The following is a summary of statutory requirements to be satisfied by RCC. Table 2 includes the required permits, licenses and consents under the relevant acts, regulation, or policy.

Table 2: Summary of Acts, Regulations and Guidelines Applicable to Project

ACT/ REGULATION / PLANNING POLICY	KEY PROJECT REQUIREMENTS	JURISDICTION
PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1997 (POEO ACT) AND REGULATIONS	Undertake all activities to minimise harm to the environment (in particular pollution of air and water and noise emissions) and not cause an offence under the Act. Discharge to stormwater may require a license under the Act. Some transporters of waste are required to be licensed under the Act. Some waste disposal/processing facilities are required to be licensed under the Act.	State
PROTECTION OF THE ENVIRONMENT OPERATIONS (WASTE) REGULATION 2014	Requirements in relation to transportation, collection, storage, or disposal of waste including asbestos waste.	State
PROTECTION OF THE ENVIRONMENT OPERATIONS (CLEAN AIR) REGULATION 2010	Requirements in relation to emission from vehicles and general obligations that the occupiers of non-residential premises do not cause air pollution by failing to operate or maintain plant, carry out work or deal with materials in a proper and efficient manner.	State
PROTECTION OF THE ENVIRONMENT OPERATIONS (UNDERGROUND PETROLEUM STORAGE SYSTEMS) REGULATION 2014	Requirement for the removal / in-situ abandonment of Underground Storage Tanks.	State
ENVIRONMENTAL PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999	Requirements in relation to protection and management of nationally and internationally important flora, fauna, ecological communities, and heritage places.	Commonwealth
WORK HEALTH AND SAFETY ACT 2011	Requirements in relation to ensure work safety that are enforceable by law.	Commonwealth
ROADS AND RAIL TRANSPORT (DANGEROUS GOODS) ACT 1997	Transport of waste classified as Dangerous Goods in accordance with Regulations	State
NSW EPA ASBESTOS AND WASTE TYRES GUIDELINES (2015).	Outlines the legal requirements that consignors, transporters, and occupiers of premises is recommended to meet in addition to their obligations under the Waste Regulation.	State
THE WASTE AVOIDANCE AND RESOURCE RECOVERY ACT 2001	Minimise the amount of waste for disposal, where possible recycle	State
ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979	Compliance with Development Consent Conditions issued by Consent Authority (Cumberland Council) to manage effects on the environment.	State

ACT/ REGULATION / PLANNING POLICY	KEY PROJECT REQUIREMENTS	JURISDICTION
SYDNEY WATER ACT (NSW) 1994	Written agreement of Sydney Water is to be obtained if discharge of certain substances to sewer is required. Approval required for any works that will affect Sydney Water's sewer, water mains, stormwater and or easements.	State
NSW ASMAC ACID SULFATE SOIL MANUAL (AUGUST 1998)	Outline a stepwise process for site assessment and management of proposals in areas containing acid sulphate soils	State
NSW EPA (2014) WASTE CLASSIFICATION GUIDELINES	Requirements in relation to permits required-soil/water that may need to be transported to landfill and appropriate waste classification will be required.	State
NSW HERITAGE ACT 1977.	Requirements in relation to Protection of heritage listed items	State
ENVIRONMENTALLY HAZARDOUS CHEMICALS ACT 1985	Requirements in relation to a legal framework capable of regulating priority/high-risk chemicals throughout their entire life cycles	State

All work is recommended to be conducted, as appropriate, in accordance with (but not limited to) the following environmental codes of practice:

- Australian Standard (AS) 2436-1981: Guide to Noise Control on Construction, Maintenance and Demolition Sites.
- AS 2601 - 2001: Demolition of Structures.
- AS 2436- 1981: Guide to Noise Control on Construction, Maintenance and Demolition Sites.
- AS 2986.1-2003 Workplace air quality - Sampling and analysis of volatile organic compounds by solvent desorption.
- AS 2986.2-2003 Workplace air quality – Part 2: Diffusive sampling method.
- AS NZS ISO 19011-2003 Guidelines for quality and or environmental management systems auditing.
- AS/NZS 3012-2003: Electrical Installations- Construction and Demolition sites.
- BS6472 -1992: Evaluation and Human Exposure to Vibration in Buildings (1 to 80Hz).
- BS7385 Part 2-1993: Evaluation and measurement of Vibration in Buildings Part 2.
- DEC (now EPA), NSW (2005): Approved Methods for the Modelling and Assessment of Air Pollutants in NSW.
- DEC (now EPA), NSW (2007): Approved methods for the Sampling and Analysis of Air Pollutants in NSW.
- Department of Conservation and Land Management, CALM (1992): Urban Erosion Control and Sediment Control.
- National Environmental Protection Measure (NEPM) on Ambient Air Quality.
- National Environment Protection Council (1998): National Environment Protection NSW DEC (2007): Noise Guide for Local Government.
- NEPM (1999) Assessment of Site Contamination, as amended 2013.
- National Occupational Health and Safety Commission, 2nd Edition [NOHSC: 2002 (2005)]: Code of Practice for the Safe Removal of Asbestos.
- NSW Department of Housing (1998): Managing Urban Stormwater- Soils and Construction.
- SafeWork, NSW (1993). Code of Practice: Safe Work on Roofs, Part 1, Commercial and Industrial Buildings.

- SafeWork, NSW (1997). Code of Practice: Amenities for Construction Work.
- SafeWork, NSW (1997). Code of Practice: Cutting and Drilling of Concrete and Other Masonry Products.
- SafeWork, NSW (1992). Code of Practice: Electrical Practices for Construction Work.
- SafeWork NSW (July 2014): Code of Practice: Excavation Work.
- WorkCover NSW (March 2014): Managing asbestos in or on soil; and
- Other NSW EPA endorsed relevant guidelines.

In addition to any regulatory compliance required by the above-mentioned Acts and Guidelines, the contractor will be responsible to carry out the site works with all due care to ensure that the following conditions are complied with:

- Practical minimisation of all wind-borne dust leaving the confines of the site.
- No water containing any suspended matter or contaminants is to be allowed to leave the confines of the site in such a manner that it could pollute any nearby waterway.
- Material originating from onsite is not recommended to be tracked outside the site boundary and any material present on road surfaces recommended be removed immediately.
- Noise levels at the site boundary are to comply with the legislative requirements.
- Odour levels at the site boundary are to comply with the requirements as per this CEMP.

The CEMP will be explained to all contractors and a copy will be maintained on site during excavation and future construction works.

5 OCCUPATIONAL HEALTH AND SAFETY

The following Health and Safety plan contains procedures and requirements that are to be implemented as a minimum during the site works.

The objectives of the health and safety plan are:

- To apply standard procedures that reduces risks resulting from the above works.
- To ensure all employees are provided with appropriate training, equipment, and support to consistently perform their duties in a safe manner; and
- To have procedures to protect other site workers and the general public. These objectives will be achieved by:
 - Assignment of responsibilities.
 - An evaluation of hazards.
 - Establishment of personal protection standards and mandatory safety practices and procedures; and
 - Provision for contingencies that may arise while operations are being conducted at the site.

This health and safety plan does not provide safety information specific to construction and other demolition or excavation activities carried out by contractors, such as the safe operation, maintenance, and inspection of plant, etc. Contractors will be required to prepare their own Safe Work Method Statements for their work activities. All parties working on the site is recommended to comply with all applicable Work Health and Safety legislation, regulations, codes, and guidelines.

5.1 RESPONSIBILITIES

Principal Contractor

RCC is responsible for ensuring that the work is carried out in accordance with the health and safety plan. This will include:

- Ensuring a copy of the health and safety plan and CEMP is available at the site during the excavation/construction activities.
- Confirming individuals are competent in performing assigned tasks.
- Liaison with the contractor representatives, as appropriate, regarding safety matters; and
- Investigation and reporting of incidents and accidents.

Every individual worker is responsible for conducting their allocated tasks in a safe manner and in accordance with their training and experience. It is recommended that they give due consideration to the safety of all others in their proximity and cooperate in matters of health and safety. All workers are recommended leave their work areas in such a condition that the location will not be hazardous to others at any time.

5.2 HAZARDS

The known or potential hazards associated with the work activities described are listed below:

- Potential chemical hazards.
- Physical hazards, including.

- Work in or near excavations.
- Operating machinery.
- Heat stress and UV exposure.
- Underground or overhead services.
- Manual handling; and
- Noise.

In the event of the discovery of any condition that would suggest the existence of a situation more hazardous than anticipated, or of any new hazard that could potentially cause serious harm to personnel or the environment, work will be suspended until the Project Manager has been notified and appropriate instructions have been provided to field personnel.

5.3 POTENTIAL CHEMICAL HAZARDS

The main potential chemical hazards associated with the excavation/construction works is petroleum hydrocarbons, PAHs, heavy metals, asbestos, and soil gasses.

When working with identified contaminated materials in general, care needs to be taken to ensure that the contamination is not introduced to the worker via ingestion, inhalation, or dermal contact. The personal protective equipment (PPE) and decontamination requirements outlined in Section 3.4 is recommended to be followed to control the risks posed by chemical hazards at the site.

Potential hazards associated with working with asbestos or asbestos containing material (ACM) are addressed in detail in the Asbestos Management Plan (AMP) and is recommended be read in conjunction to this document.

5.4 PHYSICAL HAZARDS

Operating Machinery

Heavy plant and equipment operating in the vicinity of field personnel presents a risk of physical injury. Personnel is recommended be cognisant of their position in relation to operating machinery.

Never walk behind or to the side of any operating equipment without the operator's knowledge. Do not assume that the operator knows your position. Personnel are recommended to stay at least 2 m from the operational area of heavy equipment and is recommended not stand directly below any load or piece of equipment (e.g. excavators).

Working in or Near Excavations

All excavations are recommended to be shored, sloped, or otherwise constructed, so as to comply with SafeWork Authority safety regulation to minimise the potential for collapse.

Geotechnical advice, given to the slopes and treatment of batters is recommended to be always adhered to.

Cuts and Abrasions

The manual work associated with the site works gives rise to the risk of cuts and abrasions to personnel working in the area. As well as the direct consequences of any cut or abrasion, such injuries can lead to the possibility of exposure to contaminants through the wound as well as diseases such as tetanus. To minimise the risk of direct or indirect injury, personnel will wear the personal protective equipment described.

Heat Stress and UV Exposure

Site personnel may experience heat stress due to a combination of elevated ambient temperatures and the concurrent use of personal protection equipment; this depends in part on the type of work and the time of year.

There are four main types of heat stress related problems:

- Heat Rash - caused by continuous exposure to heat and humid air and aggravated by chafing clothes. Decreased ability to tolerate heat, as well as being a nuisance.
- Heat Cramps - caused by profuse perspiration with inadequate fluid intake and chemical replacement. Signs: muscle spasms and pain in the extremities and abdomen.
- Heat Exhaustion - is caused by increased stress on various organs as they meet the increasing demand to cool the body. Signs: shallow breathing; pale, cool, moist skin; profuse sweating; dizziness, and lassitude
- Heat Stroke - result of overworked cooling system. Heat Stroke is the most severe form of heat stress. Body is recommended to be cooled immediately to prevent severe injury and/or death. Signs: red, hot, dry skin; no perspiration, nausea; dizziness and confusion; strong, rapid pulse and coma. Medical help is recommended be obtained immediately.

In addition to the above, overexposure to UV radiation in sunlight can result in sunburn to exposed skin. The use of a high protection sunscreen (SPF15 or greater) on all exposed skin is recommended. Hats (including hard hats in specified areas) will also provide additional sun protection during the peak (i.e. 10:00 am to 3:00 PM) sun period. Sunglasses may be worn (where appropriate) to protect eyes from effects of UV exposure.

5.5 UNDERGROUND SERVICES

There is the potential for underground services (electricity, natural gas lines, water, telephone, sewer, and stormwater) to be present beneath the work area. The contractor is to ensure that appropriate procedures will be taken to minimise the risk associated with excavation near services. This will include but not be limited to dial before you dig plan review, service provider notification and work clearance, service location by an approved contractor, manual excavation of test pits, adherence to safe excavation distances (for overhead and below ground services), spotting during excavation, assessment of structural considerations etc.

5.6 ABOVE GROUND ELECTRICAL HAZARDS

All electrical plant and equipment to comply with the requirements of Australian Standard AS 3000. Handheld portable tools are recommended to comply with AS/NZS 3160 "hand-held portable electric tools" and is recommended to be double insulated. A Residual Current Device (RCD) is recommended to protect plug-in portable equipment, which is connected to a supply above Extra Low Voltage - 12-24 Volts (including equipment supplied from a generator or welding set). RCD protection is recommended to be provided during the maintenance of portable electrical equipment. RCD protection is recommended to be provided at all times, while the equipment is connected to a power supply above Extra Low Voltage, irrespective of whether power is switched ON or OFF. RCD's is recommended to comply with AS 3190 and is recommended to be type II units, rated to trip at or below 30 milliamps within 40 milliseconds.

No excavator may work within 2 m of overhead distribution power lines.

5.7 MANUAL HANDLING

When lifting or handling heavy objects, use correct lifting techniques, bending the knees not the back. If the item to be lifted is too heavy or awkward for one person to lift, seek assistance from other employees or use mechanical help.

5.8 NOISE

Long-term exposure to high levels of noise is unlikely. However, operating machinery may cause significant noise exposures for short periods. Earplugs, earmuffs, or a combination of both is recommended to be worn in any situation where noise levels make normal conversation difficult.

*Refer to Noise and Vibration Sub-Management for noisy work hours.

6 ENVIRONMENTAL MANAGEMENT

The remaining sections of this document set out the environmental management activities and management measures, which will be implemented during the works. The Principal Contractor will ensure that personnel responsible for undertaking the works are aware of their roles and responsibilities detailed in this CEMP.

6.1 POTENTIAL ENVIRONMENTAL ISSUES

The potential environmental issues associated with the proposed construction works include:

- Air emissions from contaminated soils and groundwater.
- Impact of noise and air emissions from plant, equipment and vehicles used in the project and associated transport of infrastructure.
- Potential impacts to terrestrial and aquatic ecology within close proximity to the work area and the surrounding areas.
- Disturbance to, and release of potentially contaminated soil and groundwater to the local environment; and
- Disruption to amenity of any residents and other land users in the vicinity of the site.

6.2 GENERAL STRUCTURE OF ENVIRONMENTAL MANAGEMENT

Individual management measures have been prepared to address the issues listed in Environmental Elements 1 to 9. The numbering order is not considered as a ranking of priority of each element as each element will have some overlaps in procedures and monitoring requirements. Each plan is comprised of a number of elements, each with an overall associated management policy, mechanisms of policy implementation, proposed monitoring programs and potential corrective actions as described in Table 3.

Table 3: Structure of CEMPs

EMP ELEMENT	DESCRIPTION OF CONTENT
ELEMENT	The environmental aspect of construction or operation requiring management consideration.
POTENTIAL IMPACTS	The potential impacts in relation to the environment.
MANAGEMENT ACTIONS	The procedures to be undertaken to avoid or minimise potential impacts
PERFORMANCE OBJECTIVES	The target or strategy to be achieved through the specific management actions.
PERFORMANCE INDICATOR	The criteria against which the implementation of the actions and the level of achievement of the performance objectives will be measured, as well as the success of the implementation of the policy.
MONITORING	The intended monitoring program and the process of measuring actual performance.
RESPONSIBILITY	The entity assigned responsibility for carrying out each action.

EMP ELEMENT	DESCRIPTION OF CONTENT
REPORTING	The process of documenting actual performance, or how well the policy has been achieved, including the format, timing and responsibility for reporting and auditing of the monitoring results.
CORRECTIVE ACTION	The action to be implemented and by whom in the case where a performance requirement is not met.

7 MANAGEMENT OF DUST & ODOUR: AIR QUALITY

7.1 SUMMARY OF POTENTIAL IMPACTS

Potential impacts to air quality resulting from the works include emissions from exposed soils, asbestos dust, groundwater, plant and equipment and dust generated during earthworks and land clearance and demolition work. Air monitoring has been implemented around site to ensure the air quality is not impacted upon.

Potential odour / vapour impacts may also occur as a result of the release of odours from impacted soils / groundwater / gases and exposure from unexpected finds, hydrocarbon hotspots and soil gas pathways within any uncontrolled fill.

Ambient Air Levels will likely vary as earth works proceed. Earth works will also be conducted up to the site boundaries in some areas and odour / soil gas will be subject to changes in wind direction and weather conditions. The application and effectiveness of odour suppressant mitigation will need to be well managed under the discretion of the Principal Contractor and the environmental consultant.

Procedures

A summary of the minimum plan requirements is provided in Table 4.

Table 4: Summary of Air Quality Management Procedures

ELEMENT	AIR QUALITY
PERFORMANCE OBJECTIVES	<p>The objective of this management measure is not to generate any odours or gasses and to adopt the necessary management strategy and PPE if presented with the occurrence to minimise the impacts of odours and/or vapours if encountered.</p> <p>Avoid or minimise the potential for odour and/or vapour emissions during the handling of exposed soils.</p> <p>Maintain plant and equipment such that exhaust emissions are minimised.</p> <p>Avoid or minimise disruption to amenity of residents and other land users in the vicinity of site works.</p>
MANAGEMENT ACTIONS	<p>Use of surfactant spray (onsite in close proximity of the earth works <u>and</u> at the site boundary/fences) is required for odour suppressant during works (this is up to the discretion of the Project Manager and the environmental consultant).</p> <p>Heavy equipment and vehicles will be appropriately maintained to minimise exhaust emissions.</p> <p>Appropriate methods of dust suppression will be implemented, such as ensuring earthworks materials remain moist to ensure dust is minimised during works.</p> <p>Evaluate weather conditions prior to works commencing and during any change in wind direction.</p> <p>Cease works if dust or odour generation is excessive.</p> <p>Covering of any stockpiles that are to remain for greater than two days (Waste reclassification or ENM stockpiles, ACM demolition stockpiles), or if weather forecasts predict strong winds; with plastic or Hessian material.</p> <p>All dust/odour control measures will be kept in good operating condition and be functional at all times, with regular maintenance.</p> <p>All loads are to be covered and appropriately fitted with tarpaulins to contain dust and/or odour during transport.</p> <p>A complaints register will be established and maintained to receive and address complaints from the community regarding the detection of nuisance odour during the works.</p>

ELEMENT	AIR QUALITY
	Residents in the vicinity of the proposed works will be informed of potential dust/odour impacts prior to the commencement of works.
PERFORMANCE INDICATOR	<p>No complaints from location residents, surrounding businesses or site personnel. Goal of nil complaints relating to dust quality issues. Vapour emissions (Chlorinated VOCs) are likely to occur however the number of complaints should be kept to a minimum.</p> <p>All complaints will be responded to within 2 business days.</p> <p>No onsite observation of dust generation during excavation works by Project team.</p> <p>No visual evidence of exhaust smoke during idle of equipment. No visual evidence of tracked material on public roads.</p> <p>A reduction in the number of complaints received in relation to air quality each month.</p>
MONITORING	Implementation of visual monitoring of dust, material tracking, truck tarping, water spray use, exhaust plumes and stockpile covering. If unexpected fines protocol detects contaminants a review of air born testing is to be undertaken.
RESPONSIBILITY	The Principal Contractor is responsible for ensuring that if a monitoring program is required to be implemented by appropriately trained/qualified staff. This program may be sub-contracted out to a specialist sub-consultant as required. The Principal Contractor is to ensure responsible personnel are suitably qualified.
REPORTING	Maintenance of records on site of visual, PID and Asbestos monitoring undertaken if required.
CORRECTIVE ACTION (AS REQUIRED)	<p>If required replace or repair emission control devices.</p> <p>Provide equipment to enable wetting of exposed soils if required.</p> <p>Should excessive dust be generated during works will also cease, until weather conditions improve and/or additional dust suppression measures have been implemented.</p> <p>The use of PPE with appropriate filters, inside the works zone will be mandatory, in the event that PID readings exceed the limits set by the environmental consultant for the Site/area. The level set by the environmental consultant is exceeded the following action is recommended to be undertaken:</p> <ul style="list-style-type: none"> • Backfill any excavation or cover with plastic sheeting. • Temporarily cease works until levels drop; and • Increase the use of suppressant near the excavation. <p>In the event that boundary monitoring exceeds, the works resulting in the excessive noise or vibration will cease and assessed, works to resume once corrective action is in order. The earthworks are recommended to be quickly backfilled and the situation reassessed if odour / gasses are identified and deemed excessive by the environmental consultant, the application of odour suppressants is recommended to be used / increased and then works can recommence once suitably qualified environmental consultant has assessed ambient air quality to be satisfactory.</p>

8 MANAGEMENT OF COMMUNITY CONSULTATION AND COMPLAINTS HANDLING

8.1 SUMMARY

Community consultation can be involving, meaningful, useful, and effective if the following principles are used as a starting point for making consultation work:

- **Making it timely:** participation is recommended not to be so late in the process of an issue that it is tokenistic or merely confirms decisions already made. Give people enough time to express their views.
- **Making it inclusive:** Participation is recommended be selected in a way that is not open to manipulation and is recommended include a cross section of the participation.
- **Making it community focused:** Ask participants not what they personally want but what is appropriate in their role as a citizen.
- **Making it interactive:** avoid reducing questions to a simplistic response. Allow consideration of the big picture so people can readily become engaged.
- **Making it effective:** Although decision making can strive for consensus, complete agreement may not be the outcome. Be clear on how the decisions will be made so participants understand the impact of their involvement. Allow enough time for participants to become familiar with the project issues.
- **Making it Matter:** it is important that a strong likelihood that any recommendations that emerge from the consultative process will be accepted. If they are not, it is important that a public explanation is provided.

8.2 WAYS TO CONSULT

Different community stakeholder groups need different consultation methods at different stages of the project. Some of the processes that may be used are listed below.

CONSULTATION METHOD	INFORM	CONSULT	INVOLVE	COLLABORATE
Tools	Fact Sheet / flyers	Public submissions	Community liaison groups	Advisory groups
	Website	Focus groups	Workshops	Decision making
	Project Open days	Public meetings	Submissions	Consensus building
	Briefings	Surveys	Community projects / sponsorship	
	24 hrs. contact points		Local suppliers preference policy	
	Media			
	Direct personal visits			
	Project inductions			

8.3 LETTERBOX DROPS AND PUBLIC NOTICES

Letter box drops or public notices will include at least the following:

- Why the works are required.
- When they are likely to occur.

- What mitigation measures are in place to minimise any community or environmental impacts.
- Who will be doing the work and a contact phone number for further information; and
- Emergency Contact number / community complaints line.

8.4 COMMUNICATION PROTOCOLS

The protocols for establishing and continuing community consultation for this project include:

- Communicating clearly.
- Ensuring information is structured around the same messages i.e. Consistency.
- Ensuring project staff are clear about main messages, so stakeholders receive consistent messages.
- Providing information promptly.
- Establishing timelines and lines of communication: for this project noting that a 2-day response time to deal with community concerns has been determined.
- Making the information accessible to all interested parties, and
- Being open to changes that may result from listening and incorporating innovations or concerns from the community into the project activities and methodologies.

8.5 IDENTIFICATION OF STAKEHOLDERS

Key stakeholders are generally identified as people who are adversely or positively impacted by our operations, those who have an interest in / influence on what we do.

Our project sites are required to identify their key stakeholders and consider their expectations and concerns during design (where achievable) and operational activities.

These projects key stakeholders are many and varied and may include:

- Client and Client PM
- Facility end users and invested stakeholders.
- Local community and organisations which represent local and indigenous communities.
- Local Aboriginal Land Council and Aboriginal and Torres Strait Islander communities near project site
- Adjacent or surrounding neighbours (property occupiers or owners) and local road users
- Local community members and organisations which have an interest in the project.
- Local council, authorities, and suppliers
- Local Government
- Industry associations and unions
- RCC project personnel as well as broader design and delivery team including consultants, subcontractors, and suppliers.
- Within these groups, there are stakeholders that may be interested in specific issues or affected by a range of issues.

A balanced community engagement involves both a commitment from RCC and an expectation from the community, as summarised below.

	INFORM	CONSULT	INVOLVE	COLLABORATE
COMMUNITY EXPECTATION	To get balanced and objective information about aspects of the project that impact on us	To be asked our opinions and allow us to provide feedback to the company on the matters that concern us	To be involved in the decision-making process and the exploration of alternatives regarding those issues that are of concern to us	To create a partnership with us whereby we have faith that our concerns and ideas are integrated into the decision-making process
RCC OBLIGATION	We will keep the community well informed	We will listen and acknowledge community concerns and provide evidence that concerns are considered in decision making	We will work with the community to make sure concerns and issues are reflected in any alternatives developed. Provide feedback to the community on how their inputs has influenced outcomes	We will look to the community for advice and innovation in solving issues and concerns and incorporate their advice into the decision-making process to the maximum extent possible.

8.6 COMPLAINTS HANDLING

Should any complaints occur immediate measures is recommended to be undertaken to investigate the complaint, the cause of the issue and identify the required changes to work practices.

The effectiveness of any changes is recommended to be verified before continuing. Documentation and training of site staff is recommended to occur to ensure the practices that produced the issues are not repeated.

If a complaint is received, the complaint is recommended to be recorded. The complaint form is recommended to list:

- The name and address of the complainant (if provided)
- The time and date the complaint was received.
- The nature of the complaint and its particulars (including time & date)
- The name of the individual who received the complaint.
- Actions taken to investigate the complaint, and a summary of the results of the investigation.

9 STORMWATER CONTROL & DISCHARGE: SURFACE WATER

Works is recommended comply with requirements for storm water management in accordance with Managing Urban Storm water – Soils and Construction (Landcom, 2004) to minimise direct or indirect un-authorized release of surface water during site works to minimise impacts to surface water quality of surrounding environs.

In the event groundwater is intercepted during excavation works, a temporary water collection pit is recommended to be excavated in the bottom of the excavation pit or graded surface. Water samples is recommended be collected and tested for chemical of concern prior to discharge/disposal. The principal contractor is recommended to assess if the volume of expected groundwater requires relevant authority approval. Excavation pump-out water (if any) is recommended to be pumped from the excavation by a licensed contractor and disposed of off-site as “liquid waste” in accordance with NSW EPA (2014). The Principal Contractor is recommended to obtain the relevant approvals (from discharge authorities like WSC etc.) prior to the commencement of dewatering.

9.1 SUMMARY OF POTENTIAL IMPACTS

The following potential impacts from surface water may occur as part of the works program:

- Complaints from local residents
- Breaches in Regulatory requirements
- Increased turbidity and sediment concentrations due to accidental release
- Increased sediment load on storm water drains and infrastructure
- Ruts and gullies in soil surfaces
- Unsuitable conditions for construction work.
- Safety and Health related issues, and
- Damage to local ecological receptors.

Any impacts would be expected to be temporary only in nature and generally localised to the area of adjoining active works but may have longer term impacts to local ecological communities.

9.2 PROCEDURES

A summary of the minimum plan requirements is provided in Table 7.

Table 7: Summary of Water Quality Management Procedures

ELEMENT	WATER QUALITY
PERFORMANCE OBJECTIVES	<p>Avoid or minimise the disturbance to, and release of potentially contaminated soil or sediment laden water to the surrounding environs.</p> <p>Prevent increased water flows causing erosion damage to drainage infrastructure and water ways.</p> <p>Prevent safety related incidents associated with wet or slippery work conditions.</p>
MANAGEMENT ACTIONS	<p>Assessment of weather during excavation operations and consideration of temporarily halting works until more favourable conditions are encountered.</p> <p>Install sediment control structures (i.e. silt fencing and/or hay bales) is recommended be implemented in accordance with Managing Urban Storm water Soils and Construction (Landcom, 2004) prior to the commencement of works. This would include strategic</p>

ELEMENT	WATER QUALITY
	<p>placement of such structures down- gradient of temporary stockpiles and slopes to minimise sediment entrainment. These measures are recommended to be placed on the up-slope side of any storm water collection channels.</p> <p>Control of drainage on the site by interception and redirection of clean storm water in a controlled manner.</p> <p>Collection of storm water on-site in trenches and sumps for appropriate management.</p> <p>Provide inlet protection to be provided for any potentially impacted locations.</p> <p>Site contractors will be required to observe any sediment control and/or storm water control measures to ensure that they are working at a satisfactory level.</p> <p>Provision of a Spill cleanup kit on all sites where bulk fuel is stored or is being transferred.</p> <p>Maintain a hardstand or lined and bunded area for the refuelling and storage of equipment.</p> <p>Cease works if excessive surface water makes conditions unsuitable for construction works.</p> <p>Cease works if excessive surface water makes creates safety concerns.</p>
<p>PERFORMANCE INDICATOR</p>	<p>The prevention of increased storm water runoff is the best approach.</p> <p>Site contractors will be required to observe any increases in sediment loads and volumes in storm water drains when working close to surface drains and report any discharges beyond the site boundaries.</p> <p>Site contractors will be required to observe any sediment control and/or storm water control measures to ensure that they are working at a satisfactory level.</p> <p>Zero records of near miss or injury in relation to wet conditions</p>
<p>MONITORING</p>	<p>Regular observations will be made by the Site Contractors and the Project Manager and mitigation measures put into place if sediment loaded runoff is likely to occur or a rainfall event is predicted.</p> <p>Monitoring requirements from a pump-out-permit or other required license is recommended to be adhered to at all times.</p>
<p>RESPONSIBILITY</p>	<p>The Project Manager is responsible for ensuring that each of the monitoring programs is implemented by appropriately trained/qualified staff. These programs may be sub-contracted out to a specialist sub- consultant as required.</p>
<p>REPORTING</p>	<p>Records of all corrective actions and known sediment releases will be kept.</p> <p>Records of Near Miss and Injuries will be kept.</p> <p>The Project Manager will immediately report to the Contract Administrator any incidents of water discharging off site.</p>

10 MEASURES OF SEDIMENT CONTROL

10.1 SUMMARY OF POTENTIAL IMPACTS

Potential impacts from sediments resulting from the works include dust emissions (Refer to Element 1: Air Quality) and storm water (Refer to Element 3: Surface Water) generated during earthworks/land clearance and construction.

The following potential impacts from sediments may occur as part of the works program:

- Complaints from residents
- Breaches in Regulatory requirements
- Increased turbidity and sediment concentrations due to accidental release
- Increased sediment load on storm water drains and infrastructure
- Damage to local ecological receptors

Any impacts would be expected to be temporary only in nature and generally localised to the area of adjoining active works and transport routes but may have longer term impacts to local ecological communities.

10.2 PROCEDURES

A summary of the minimum plan requirements is provided in Table 6.

Table 6: Summary of Sediment Management Procedures

ELEMENT	SEDIMENTS
PERFORMANCE OBJECTIVES	<p>The objective will be to avoid an impact on water quality in surface water and drains which eventually discharge offsite by implementing prevention measures to control any sediment that is generated.</p> <p>Avoid or minimise soil migration and loss to surface waters and drains. Avoid or minimise pollution of creeks and waterways.</p> <p>Avoid or minimise increased sediment load on storm water drains and infrastructure.</p>
MANAGEMENT ACTIONS	<p>Prior to the start of the works a stormwater and sediment control plan is recommended to be prepared by the Principal Contractor. This plan is recommended to be in accordance with Councils regulations.</p> <p>Site contractors will be required to observe any increases in sediment load in storm water drains when excavations are close to surface drains or waterways.</p> <p>Sediment control structures (i.e. silt fencing and/or hay bales) is recommended to be implemented in accordance with the Stormwater and Sediment Control Plan prior to the commencement of works.</p> <p>Evaluate weather conditions prior to works commencing and during any change in wind direction.</p> <p>Cease works if dust generation is excessive (by visual assessment).</p> <p>Covering of any stockpiles that are to remain for greater than two days, or if weather forecasts predict strong winds: with plastic or Hessian material.</p> <p>All sediment control measures will be kept in good operating condition and functional at all times, with regular maintenance.</p> <p>Strategic placement of such structures down-gradient of stockpiles and slopes to minimise sediment entrainment. These measures are recommended also to be placed on the up-slope side of any storm water collection channels.</p>

ELEMENT	SEDIMENTS
	<p>If a significant rain event occurs, fieldwork will cease. There will be sediment control measures available for placement down gradient of the work area; and</p> <p>Works will also be conducted in a manner to minimise the potential for sediment and soil migration, whereby excavated material will be hauled offsite as soon as practicable and/or reinstated and compacted.</p>
PERFORMANCE INDICATOR	<p>The prevention of sediment runoff is the best approach.</p> <p>Site contractors will be required to observe any increases in sediment load in storm water drains when excavating close to surface drains and site boundaries.</p> <p>No complaints from location residents, surrounding businesses or site personnel. Goal of nil complaints relating to sediment issues.</p> <p>No onsite observation of dust generation during excavation works by Project team.</p> <p>No visual evidence of tracked material on public roads.</p>
MONITORING	<p>Regular observations will be made by the Site Manager and mitigation measures put into place if sediment loaded runoff is likely to occur or a rainfall event is predicted.</p> <p>Records of all corrective actions and known sediment releases will be kept.</p> <p>Implementation of visual monitoring of dust, material tracking, truck tarping, water spray use, exhaust plumes and stockpile covering.</p>
RESPONSIBILITY	<p>The Project Manager is responsible for ensuring that the monitoring program is implemented by appropriately trained/qualified staff.</p>
REPORTING	<p>Maintenance of records on site of visual monitoring undertaken</p>
CORRECTIVE ACTION (AS REQUIRED)	<p>Clean-up of sediment.</p> <p>Installation of sediment and erosion controls. Additional storm water control measures.</p> <p>Altered excavation works.</p> <p>Cease works if a major storm event is likely to occur. Replace or repair sediment and erosion control devices.</p> <p>Should excessive dust be generated, it is recommended that excavation works cease, until weather conditions improve and/or additional dust suppression measures have been implemented.</p>

11 ENVIRONMENTAL MANAGEMENT MEASURE ELEMENT: WASTE MANAGEMENT

Excess soils requiring offsite disposal will require additional assessment and is recommended to be stockpiled onsite prior to sampling and any additional assessment by a suitably qualified environmental consultant.

All excavated material removed from site will need to have appropriate Waste Tracking Certificates and no material is permitted to leave site prior to receiving a waste classification letter. Each truckload is recommended to be filled before leaving the site. A transportation form is recommended to accompany each truckload and is recommended to be handed back to the Environmental Specialist upon return to the site. The waste docket is recommended to be attached to this transportation form.

Stormwater and/or groundwater collected on-site in trenches and sumps will be subject to waste management if offsite disposal is to take place. Disposal via the storm water system may be undertaken subject to relevant authorities discharge license conditions.

Should excavations require dewatering, water samples are recommended to be collected by the Environmental Specialist and analysed prior to pump-out and offsite disposal. Waste liquid disposal dockets is recommended to be maintained onsite for inspection.

If during any site earthworks or excavation, asbestos, evidence of gross contamination or unknown type of material not previously detected is observed (Unexpected Finds), site works are to cease until the Project Manager has been notified and appropriate instructions have been provided to field personnel. Further works in such a location is recommended to be conducted under the supervision of a suitably qualified environmental consultant after a formal notification to the Site Auditor. All additional work would be documented and detailed in a validation report prepared by the Environmental Specialist and reviewed by the Site Auditor.

Other waste, excluding soils and groundwater, generated during the redevelopment works may include:

1. Domestic waste generated by site workers.
2. Asbestos contaminated waste to follow recommendations of UFP.
3. Concrete Slab
4. Liquid waste; and
5. Inert building materials

Asbestos waste and decontamination disposal waste is recommended be conducted as per consultant's advice and site auditor's requirements.

Each outbound truck is recommended to be logged as clean prior to dispatch along with information pertaining to the amounts of loads and number of trucks leaving the site in addition to copies of all waste classifications certificates, waste tracking certificates, weigh bridge dockets, and any council approvals is recommended to be maintained onsite for inspection.

11.1 SUMMARY OF POTENTIAL IMPACTS

The following potential impacts from waste management may occur as part of the works program:

- Complaints from local residents
- Breaches in Legislative/Regulatory requirements; and

- Damage to local ecological receptors.

Any impacts would be expected to be temporary only in nature and generally localised to the area of adjoining active works but may have longer term impacts to local ecological communities.

11.2 PROCEDURES

A summary of the minimum plan requirements is provided in Table 8.

Table 8: Summary of Waste Management and Minimisation Procedures

ELEMENT	WASTE MANAGEMENT AND MINIMISATION QUALITY
PERFORMANCE OBJECTIVES	<p>The objective will be to minimise and control any wastes and waste categories that are generated and ensure that they will be appropriately disposed of.</p> <p>Avoid or minimise environmental impacts related to waste management and handling of potentially contaminated soils.</p> <p>Avoid or minimise impacts due to unexpected finds.</p> <p>Avoid or minimise health risks associated with potentially contaminated soil exposure and dust generation.</p>
MANAGEMENT ACTIONS	<p>Provision of a Spill cleanup kit on all sites where bulk fuel is stored or is being transferred.</p> <p>Maintain a hardstand or lined and bunded area for the refuelling and storage of equipment.</p> <p>Visual assessment of excavated material by the Environmental Specialist. The Environmental Specialist is recommended to direct the Excavator Operator if the soil has to re-assessed onsite or disposed off-based on the in-situ waste classification.</p> <p>Trucks to be used for transport of soil are to be fitted with cover tarpaulins to contain the load.</p> <p>Each truck prior to exiting site is recommended to be inspected prior to dispatch and either logged out as clean (wheels and chassis) or hosed down within a wheel wash down bay.</p> <p>Provide waste receptacles for all waste types and ensure that personnel use these correctly.</p> <p>All trucks leaving the site is recommended to be accompanied with a waste transportation form.</p> <p>Cease site works until the Project Manager has been notified of any unexpected finds and appropriate instructions have been provided to field personnel to address the issue.</p> <p>Project Manager to inform the Contract Administrator of any unexpected finds.</p>
MONITORING	<p>Regular observations will be made by the Project Manager and measures put into place if sediment loaded runoff is likely to occur or a rainfall event is predicted.</p> <p>Records of all corrective actions and known sediment releases will be kept.</p> <p>An up-to-date record of waste tracking is recommended to be kept by the Environmental Specialist.</p>
RESPONSIBILITY	<p>The Principal Contractor is responsible for ensuring that the monitoring program is implemented by appropriately trained/qualified staff. This program may be sub-contracted out to a specialist sub-consultant (the Environmental Specialist) as required. The Principal Contractor is to ensure responsible personnel are suitably qualified.</p>

ELEMENT	WASTE MANAGEMENT AND MINIMISATION QUALITY
REPORTING	Maintenance of records on site of equipment inspections undertaken and landfill disposal/waste tracking and weigh bridge docketts, and any council approvals is recommended be maintained onsite for inspection.
CORRECTIVE ACTION (AS REQUIRED)	Revision of the works strategy including relocation and alteration to the operating procedure if waste is shown to be entering the surrounding environment.

12 ENVIRONMENTAL EMERGENCY

Specific and immediate responses to emergencies and environmental incidents will be determined by the Principal Contractor.

Table 13: Environmental Emergency Contacts

Pollution type or source	Organisation responsible	Telephone
Transport of dangerous goods	EPA	131 555
Chemical spills	Fire Brigade (HAZMAT) & EPA	000 or 131 555
Contaminated sites	EPA	131 555
Fertilisers, pesticides, herbicides	EPA	131 555
Radiation	EPA	131 555
Oil spillage in ports		
Garie Beach to the Victoria border	Port Kembla Port Corporation	02 4274 4571
Oil spillage in estuaries and inland waters	Fire Brigade	02 9319 7000 (Sydney) or 1800 422 281 (outside Sydney)
Other pollution of beaches, estuaries, tidal lakes, rivers, creeks, streams and lakes	Local councils EPA	See local phone book 131 555
Drinking water catchments		
Sydney and Wollongong	Sydney Water	132 090 (24 hours)
Elsewhere in NSW	Local councils	See local phone book
Other water pollution		
Storm water channels	Local councils Sydney Water EPA	See local phone book 132 090 (24 hours) 131 555
Sewer overflows	Sydney Water	132 090 (24 hours)
Fish kills	EPA	131 555

13 SECURITY AND PUBLIC SAFETY

13.1 RESTRICTION TO ACCESS

Perimeter fencing and/ barricades that restrict access to the proposed work zone and stockpile area will be installed. Only authorised persons wearing the appropriated PPE will be able to enter the excavation/construction and stockpile/staging areas during works.

Whilst excavations remain open, the site is unattended, and works are not active, high visibility fencing will be placed around the boundary of the excavation to alert any people on site to the presence of the excavation.

13.2 PEDESTRIAN AND TRAFFIC CONTROL

Relevant signage will be in place during the excavation works to warn and protect pedestrians and other traffic of the potential exposures in the vicinity of the work area.

Signage is **recommended** to also be erected to inform the public who to contact in case of any complaints.

13.3 OUTDOOR LIGHTING

Sufficient outdoor lighting will be installed onto perimeter hoarding to provide un-obtrusive thoroughfare. Lighting Model: **PECAN LIGHTING NXT-48M-350mA-2LB-3000K LIGHTING DISTRIBUTION TYPE II 53W** will be installed at 20m intervals via a Unistrut bracket system. This method provides zero upward spill light to meet AS4282. Refer to Appendix J for Outdoor Lighting Plan and Lighting Calculation results to meet AS 1158.3.

14 REPORTING

Environmental Elements 1 to 8 of the Project include Performance Objectives to be applied to specific aspects of the works and Corrective Actions that may be adopted should non-conformances or environmental incidents occur.

14.1 NON-COMPLIANCE

A non-conformance is defined as a failure to fulfil a requirement of this CEMP or other associated environmental document. All non-compliances are recommended to immediately be reported to the Contract Administrator, and the appropriate details of the non-compliance is recommended to be submitted (in writing via email) within 24 hours of the occurrence of the non-compliance.

The Project Manager or Subcontractors may identify and report a non-conformance.

14.2 ENVIRONMENTAL INCIDENT

An environmental incident is defined as an unplanned event that occurs that impacts, or has the potential to impact, on the environment (including natural or built). In the event of an environmental incident, the Contract Administrator is recommended to be notified immediately. The details of the environmental incident will be supplied to the Project Manager on reporting of any incident.

14.3 REPORTING AND CORRECTIVE ACTIONS

When reporting a non-compliance or environmental incident, all immediate corrective actions which have been taken to rectify the situation will be documented. Further corrective action should be recommended if required at the time of reporting. Relevant agencies which require notification should also be identified.

The Principal Contractor will maintain a register of all non-compliances and environmental incidents, along with the corrective and preventative actions which have been implemented to mitigate and/or prevent further recurrences. The Principal Contractor is recommended to ensure and verify that corrective actions to control environmental impacts and avoid future non-compliances have been undertaken by the appropriate personnel.

Table 14 details the general procedures to be undertaken when non-compliances and environmental incidents occur.

Table 14: Corrective and Preventative Action Procedures

ELEMENT	MANAGEMENT
OBJECTIVE	To implement a system to identify, document, analyse and implement corrective and preventative actions for environmental non-conformance issues
MANAGEMENT ACTIONS	<p>When a non-conformance or environmental incident occurs, the Principal Contractor is to ensure corrective and preventative actions are implemented by:</p> <ul style="list-style-type: none"> • Assigning personnel to undertake investigation as per 'Environmental Incident Investigation Report' Form or 'Non- Compliance Report' Form and designate lead investigator. • Maintain documentation of Investigation Report Forms and their corrective/preventive actions on site • Report environmental non-conformances identified that cause or have the potential to cause a significant environmental impact immediately to the Principal Contractor's Project Manager.

ELEMENT	MANAGEMENT
	<ul style="list-style-type: none"> • Provide a summary of environmental non-conformances with the corrective and preventative actions which have been implemented to mitigate and/or prevent further recurrences. • Outstanding corrective actions to the Principal Contractor's Project Manager as requested. • Utilise corrective/preventative actions to revise and update CEMP and/or CEMP objectives, operational controls, and other aspects as required. • Review outstanding corrective action status.
RESPONSIBILITY	<p>All Staff and Subcontractors are:</p> <ul style="list-style-type: none"> • Responsible for informing their immediate manager of environmental non-conformances. • Responsible for undertaking corrective/preventative actions and • effectiveness determinations as assigned.
REPORTING	<p>Maintenance of records of '<i>Environmental Incident Investigation Report</i>' Forms and '<i>Non-Compliance Report</i>' Forms completed for the duration of the project.</p>

APPENDIX A - SITE LOCATION & PROPOSED DEVELOPMENT PLAN



Figure 1: Site plan of approved development



Figure 2: Aerial view of the approved Medical Research Building within the Campbelltown Hospital Campus

APPENDIX B - CONSTRUCTION TRAFFIC & PEDESTRIAN MANAGEMENT PLAN

Refer to the Traffic Management Sub-Plan provided by PTC.

APPENDIX C - CONSTRUCTION WORKER TRAVEL PLAN

APPENDIX D - CONSTRUCTION WASTE MANAGEMENT PLAN

APPENDIX E - UNEXPECTED FINDS PROCEDURE

APPENDIX F - SOIL REMEDIATION MANAGEMENT PLAN

APPENDIX G - ASBESTOS MANAGEMENT PLAN

APPENDIX H - CONSTRUCTION NOISE & VIBRATION MANAGEMENT PLAN

APPENDIX I - FLOOD EMERGENCY RESPONSE PLAN

APPENDIX J - BUSHFIRE EMERGENCY MANAGEMENT & EVACUATION PLAN

APPENDIX K - EROSION AND SEDIMENT CONTROL PLAN

REVISION F INCLUDED AS PART OF CONSTRUCTION CERTIFICATE 1

REVISION H (CURRENT REVISION) - FOR CONSTRUCTION

CIVIL DESIGN STATEMENT

APPENDIX L - OUTDOOR LIGHTING PLAN



SYDNEY

LEVEL 3, 4 BROADCAST WAY
ARTARMON NSW 2064

PO BOX 1024
CROWS NEST NSW 1585

PHONE: +61 2 9902 4700
FAX: +61 2 9439 1114

NEWCASTLE

LEVEL 1, 118A BELFORD ST
BROADMEADOW NSW 2292

PO BOX 835
HAMILTON NSW 2303

PHONE: +61 2 9902 4700
FAX: +61 2 6766 3022

TAMWORTH

SUITE 1, 493 PEEL ST
TAMWORTH NSW 2340

PO BOX 576
TAMWORTH NSW 2340

PHONE: +61 2 6766 5225
FAX: +61 2 6766 3022

ACT

UNIT 1, 155 NEWCASTLE ST
FYSHWICK ACT 2609

PO BOX 771
FYSHWICK ACT 2609

PHONE: +61 2 6143 2900
FAX: +61 2 6280 8774