



# CONSTRUCTION ENVIRONMENT MANAGEMENT PLAN

## JEMENA PROJECT MARLIN KGMS FACILITIES EXPANSION

2211-ENV-PLN-001

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## 1 INTRODUCTION

### 1.1 Background

Australian Industrial Energy (AIE) have received approval to construct a new Liquid Natural Gas (LNG) import terminal at the Port Kembla inner harbour. The gas is planned to be processed on a Floating Storage and Regasification Unit (FSRU) and imported into the existing gas networks through a new pipeline that will connect the AIE Port Kembla Gas Terminal (PKGT) with the Jemena owned gas transmission network via the Eastern Gas Pipeline (EGP). The EGP is a key natural gas supply artery between gas fields in the Gippsland Basin in Victoria and to New South Wales (NSW) and Australian Capital Territory (ACT).

Under the then provisions of the Pipelines Act 1967, Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act) did not apply to the Eastern Gas Pipeline. However, those provisions were repealed in September 2006 by the Pipelines Amendment Act 2006 which included transitional provisions for existing pipelines, under which Pipeline Licence 26 issued under the Pipelines Act 1967 was deemed to be a planning approval granted under Part 3A of the EP&A Act.

Part 3A of the EP&A Act was also repealed in October 2011, and under the provisions of the Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017, the project was transitioned to State Significant Infrastructure (SSI) in May 2019 and Pipeline Licence No. 26 comprises the Infrastructure Approval (SSI 9973) for the project.

Further modifications to the infrastructure approval under the Environmental Planning and Assessment Act 1979 have been submitted and approved as listed below.

- Modification 1 – Port Kembla Lateral Looping Pipeline October 2020.
- Modification 2 – Port Kembla Lateral Looping Pipeline May 2022.

Applicable conditions relevant to the modifications can be found in Schedule A of SSI 9973 Modification 2.

### 1.2 Project Description

The Eastern Gas Pipeline (EGP) transports natural gas from Longford in Victoria to Hoskinstown, just outside the ACT and Wilton and Horsley Park near Sydney. The EGP transports natural gas to demand centres in Sydney, Canberra and Wollongong as well as regional centres such as Bairnsdale, Cooma, Nowra and Bomaderry. The EGP is 797-km-long and was constructed from 457 mm diameter high tensile steel in November 2000. The pipeline is buried along its length to a minimum of 750 mm of pipe cover with a 20-m-wide easement centred on the pipeline along its length to allow access for inspection and maintenance.

Several above ground facilities are located along the pipeline to allow the EGP to be operated safely and efficiently, including compressor stations, mainline valves, meter stations, receiver stations and scraper stations. The EGP has a capacity exceeding 350 terajoules of gas per day. An additional 25.7 km of lateral pipelines provide connections from the EGP to Smithfield, the Moomba-Sydney Pipeline at Wilton, Bairnsdale and Port Kembla. The existing Port Kembla lateral pipeline is approximately 6.3-km-long and is located between the suburbs of Kembla Grange and Cringila. This lateral pipeline supplies gas from the EGP to industrial users in Port Kembla

Jemena has been approved by DPE to stage the construction scope of works into two stages to best reflect the current construction program, commencement of construction activities and construction contractor appointment. The two proposed stages are:

- Stage 1 – Pipeline Installation
- Stage 2 – Construction of Kembla Grange Metering Station.

Wasco Australia Pty Ltd (WAPL) have been engaged to undertake construction of Stage 2 (the Project herein).

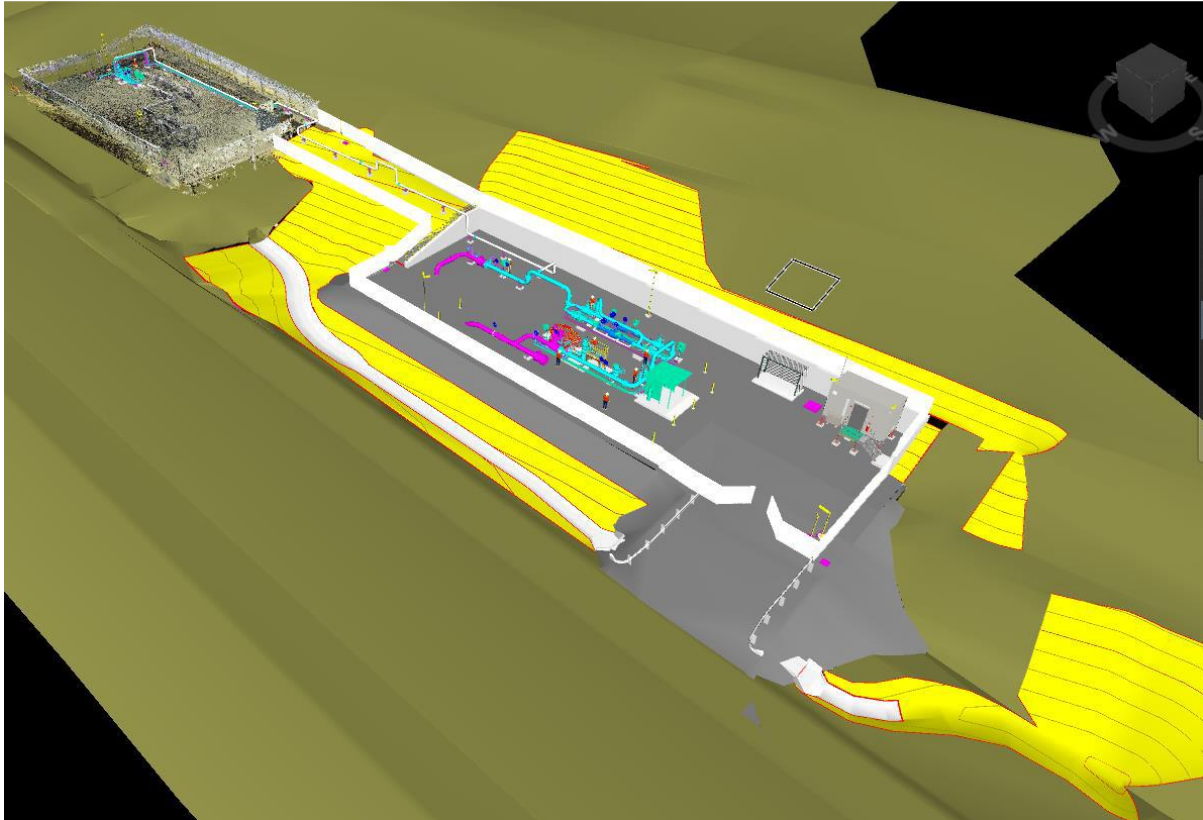


Figure 1: Kembla Grange Main Line Valve (MLV) and Meter Station, off Wyllie Road Kembla Grange (NSW)

## 2 PURPOSE

The purpose of this Construction Environment Management Plan (CEMP) is to describe the environmental inspection, monitoring, reporting and auditing requirements for construction works undertaken on Stage 2 – Construction of Kembla Grange Metering Station and to detail environmental controls and requirements to manage the environmental aspects of the Project during construction.

This CEMP applies to the Scope of Works from the *Port Kembla Pipeline Facilities and EGP Expansion – Facilities Construction Scope of Work* (GAS-599-SW-CN-001) and includes applicable requirements from SSI 9973 Modification 2, relevant to the scope of work

Should there be any significant updates, changes, or should amendments be made to the; Scope of Works; *Eastern Gas Pipeline EMP Port Kembla Gas Project* (GAS-599-PA-HSE-005) (or supporting documentation); or any significant risk is identified during the life of the project, this CEMP will be revised, and changes to the plan will be made accordingly. All changes to the plan will be communicated to the appropriate parties prior to implementation.

This Plan operates under the WAPL Integrated Management System (IMS) which is accredited to AS/NZS4801, AS/NZS ISO 14001, and AS/NZS ISO 9001. This plan should be read in conjunction with the Integrated Management System Manual (WAPL-SYS-MAN-001).

Construction will be performed in accordance with all Jemena requirements and relevant legislation, regulations, Codes of Practice, and Australian Standards. Copies of all relevant Safety Legislation, Australian Standards, and Codes of Practice will be maintained at the site office. The primary purpose of this document is to minimise as low as reasonably practicable (ALARP) the environmental impact of construction by providing environmental requirements and controls, procedures and guidance to WAPL and their representatives.

This CEMP will also describe how WAPL will comply with their obligation to minimise harm by implementing all reasonable and feasible measures to prevent, and if prevention is not reasonable or feasible, minimise any material harm to the environment that may result from construction, operation, rehabilitation or decommissioning of the Port Kembla Lateral Pipeline.

## 3 SCOPE

Jemena has engaged WAPL to perform the role of the Principal Contractor for the duration of the construction of the Port Kembla Pipeline Facility located at *Wyllie Rd, Kembla Grange, NSW 2526* (-34.46719 S, 150. 81308 E).

As such, WAPL has been authorised to have management and control of the construction project, as required to discharge the duties of a Principal Contractor. This document will be the governing CEMP for the works while WAPL remains the Principal Contractor for construction activities only and not commissioning works.

**4 ACRONYMS AND DEFINITIONS**

Acronym	Expanded Text	Definition
ALARP	As Low as Reasonably Practicable	
JEMENA	JEMENA Group	Client
AS/NZS	Australian Standard/New Zealand Standard	International standards approved for use in Australia and New Zealand
CEMP	Construction Environmental Management Plan	Describes how activities undertaken during the construction phase of the project will be managed to avoid or mitigate environmental or nuisance impacts, and how those environmental management requirements will be implemented
Contract		The agreement with Jemena to carry out the work
Council	Wollongong City Council	
Cth	Commonwealth	The Commonwealth of Australia
DPE	Department of Planning and Environment	NSW government department in charge of environment, energy and planning.
EEC	Endangered Ecological Communities	
EPA	Environmental Protection Authority	
ERP	Emergency Response Plan	Written set of instructions that outlines what workers and others at the workplace should do in an emergency
HAZOB	Hazard Observation System	
HSE	Health, Safety and Environment	
IMS	Integrated Management System	Combination of all aspects of our systems, processes, and standards
ISO	International Organisation for Standardisation	Organisation for approving international standards
KPI	Key Performance Indicator	Quantifiable, outcome-based statements to measure planned progress
NATA	National Association of Testing Authorities	National accreditation body for Australia that ensure organisations comply with relevant standards
NSW	New South Wales	
PPE	Personal Protective Equipment	Anything used or worn to minimise risk to workers' health and safety
PTW	Permit to Work	Management systems used to ensure that work is done safely and efficiently
SDS	Safety Data Sheet (also MSDS)	Documents that provide critical information about hazardous chemicals
SoW	Scope of Works	
SWMS	Safe Work Method Statement	Procedure for detailing specific requirements for high-risk construction activities or designated

Acronym	Expanded Text	Definition
WAPL	Wasco (Australia) Pty Ltd	Principal Contractor

## 5 RELEVANT LEGISLATION, STANDARDS, AND CODES OF PRACTICE

Legislation, Regulation, Standards, Codes of Practice, and other relevant obligations can influence the undertaking of this Project. WAPL commits to all work being conducted and completed within the requirements of law and regulation.

It is the responsibility of the Project Manager to provide updates to the project team and to ensure procedures and policies are appropriately updated and current. The WAPL Integrated Management System requires regular review and updating of legislation, Australian Standards and Codes of Practise.

### 5.1 Legislation

Legislation updates may occur during the life of the project, which may affect aspects of the project relating to environmental requirements or regulations. WAPL subscribes to a Legislation Update and Alert service which provides information of changes as they are implemented. Any legislative changes that affect the project will result in a revised CEMP. Legislation directly relevant to the Project is summarised below:

Legislation Compliance Table

Legislation	Reference	JEMENA Requirement
<i>Protection of the Environment Operations Act 1997</i>	Harming the environment <ul style="list-style-type: none"> <li>Section 115</li> <li>Section 116</li> <li>Section 117</li> </ul>	Do not risk harming the environmentally by willfully or negligently: <ul style="list-style-type: none"> <li>Disposing of waste unlawfully</li> <li>Causing any substance to leak, spill or otherwise escape (whether or not from a container)</li> <li>Causing any controlled substance to be emitted into the atmosphere.</li> </ul>
<i>Protection of the Environment Operations Act 1997</i>	Notifications of pollution incidents <ul style="list-style-type: none"> <li>Section 148</li> </ul>	Notify the EPA immediately of pollution incidents where material harm to the environment is caused or threatened.
<i>Protection of the Environment Operations Act 1997</i>	Water pollution <ul style="list-style-type: none"> <li>Section 120</li> </ul>	Do not cause water pollution.
<b>Water</b>		
<i>Water Management Act 2000</i>	Water use approval <ul style="list-style-type: none"> <li>Section 89</li> <li>Section 90</li> <li>Section 91</li> </ul>	A water use approval confers a right on its holder to use water for a particular purpose at a particular location. Do not construct / use a water supply work, drainage work or flood work without the appropriate approval. Controlled activity approvals and aquifer interference approvals.
<b>Biodiversity</b>		
<i>Biodiversity Conservation Act 2016</i>	Flora and fauna <ul style="list-style-type: none"> <li>Section 7.9(2)</li> </ul>	Legislation responsible for the conservation of biodiversity in NSW through the protection of threatened flora and fauna species, populations and Endangered Ecological Communities (EECs).
<i>Biosecurity Act 2015</i>	Weed Management <ul style="list-style-type: none"> <li>Section 22</li> </ul>	Land managers have a general biosecurity duty to prevent, eliminate or minimise the biosecurity risk posed or likely to be posed by priority weeds. Invasive weeds are known as “Biosecurity Matter” or “Priority Weeds”.
<b>Aboriginal and non-Aboriginal heritage</b>		
<i>Heritage Act 1977</i>	Heritage	Notify the Heritage Council of discovery of a relic.



Legislation	Reference	JEMENA Requirement
	<ul style="list-style-type: none"> <li>Section 146</li> </ul>	
<i>National Parks and Wildlife Act 1974</i>	Aboriginal places and objects <ul style="list-style-type: none"> <li>Section 89A</li> </ul>	Notify the NPWS within a reasonable time of becoming aware of the location or discovery of certain Aboriginal objects.
Contaminated material		
<i>Protection of the Environment Operations Act 1997</i>	Land pollution <ul style="list-style-type: none"> <li>Section 142A</li> <li>Section 142E</li> </ul>	Do not cause or permit land pollution other than under authority of a license or regulation (however it is not a land pollution offence to place virgin excavated natural material or lawful pesticides and fertilisers on land, or by placing matter on land that has been notified to the EPA as an unlicensed landfill and which is operated in accordance with the regulations).
<i>Contaminated Land Management Act 1997</i>	Reporting contamination <ul style="list-style-type: none"> <li>Section 60</li> </ul>	Duty to report contamination.
Noise		
<i>Protection of the Environment Operations Act 1997</i>	Plant maintenance and operation Section 139	Do not operate plant if it emits noise caused by failure to maintain or operate the plant in a proper and efficient manner.
Waste		
<i>Protection of the Environment Operations Act 1997</i>	Waste and transportation <ul style="list-style-type: none"> <li>Section 143</li> <li>Section 115</li> </ul>	Only transport waste to a facility that can lawfully accept the waste.  Do not dispose of waste in a manner that harms or is likely to harm the environment.
<i>Protection of the Environment Operations Regulation 2022</i>	Waste and transportation <ul style="list-style-type: none"> <li>Clause 49</li> <li>Part 3</li> </ul>	Comply with general requirements for the transport of waste.  Comply with record keeping requirements in relation to the transport of certain types of waste.

## 6 RESPONSIBILITIES

### 6.1 Leadership and Commitment

WAPL is committed to the safety, health, and welfare of all stakeholders on the project, and will demonstrate leadership in achieving the highest attainable standards while working in the natural environment. WAPL shall consult with Jemena, subcontractors, and all workers engaged on the Project, to ensure that all workers understand and commit to the Project’s environmental objectives and performance standards. WAPL is committed to minimising environmental harm and implementing all environmental requirements of this CEMP.

### 6.2 Principal Contractor Responsibilities

WAPL is responsible for the implementation of this CEMP in accordance with the WAPL and Jemena specified objectives on environmental management. WAPL will comply with the relevant conditions of approval stated in SSI 9973 and commitments in Modification 1 and 2 reports and assessments and any relevant legislation, applicable Codes of Practice and Australian Standards as legislated in NSW and the Commonwealth.

### 6.3 Project Manager

The Project Manager is accountable to Jemena and WAPL Senior Management for the success or failure of environmental performance.

The Project Manager has ultimate authority and responsibility for establishing compliance with this CEMP and for ensuring that adequate resources are made available to the Project Construction Supervisor(s) to enable the environmental requirements and controls to be implemented.

The Project Manager shall:



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- Provide leadership in the implementation of environmental initiatives.
- Determine the resources necessary to conduct specific activities and achieve project objectives and performance standards.
- Ensure that all activities have been assessed to evaluate the potential presence of risk and hazards and that any required control(s) have been implemented.
- Develop a construction methodology with due regard for the environment.
- Ensure mitigation actions agreed as part of the risk assessment process are included in this CEMP, supporting plans, and procedures.
- Establish sufficient resources for emergency response systems.
- Provide training to ensure that each member of the project team is competent to implement this CEMP.
- Be actively involved in Health, Safety and Environment (HSE) meetings, HSE audits, HSE inspections, and reviews, toolboxes, and Pre-starts.
- Participate in the consultation of HSE issues at regular site visits.
- Produce HSE objectives, tasks, and targets for the contract.
- Ensure that workers assigned to project activities are competent and are physically fit when engaged to carry out specific work when required and for the duration that is required
- Notify WAPL Corporate of all near misses and all environmental incident events which caused, or could have caused environmental harm or nuisance. All incidents are to be reported to Jemena immediately or as soon as the situation has been controlled as per project incident reporting procedures.
- Notify Jemena in accordance with section 13 in the event of a reportable incident.
- Be the primary avenue of communication between WAPL and Jemena on HSE matters.
- Develop, in consultation with WAPL Corporate, terms of reference and decide the composition of the investigating team as appropriate with the designated Regulatory Authority; and
- Review the quality, thoroughness, and adequacy of corrective actions for each investigation.

### 6.4 HSE Advisor

Provides environmental advice, assistance, and direction to Project Manager so activities are conducted in accordance with legislation, regulations and this CEMP.

Reports on the performance of the CEMP. Recommends changes or improvements to Project Manager

Determines through site inspections, compliance audits whether environmental controls are effectively implemented and monitored for whole of Project.

Ensure all planning and environmental approvals are in place for the works.

Prepare and distribute environmental information relating to the Project's environmental objectives and performance standards through Toolbox talks and pre-start meetings.

Coordinate/facilitate field-based inspections and audits on project activities and subcontractors against this CEMP.

Participate in the development of hazard identification and control mechanisms.

Review training records and qualifications to ensure each person is competent to perform tasks associated with their position.

Prepare and implement emergency response training drills and exercises.

Review performance monitoring reports.

Review and amend this CEMP as required.

Prepare promotional material for HSE issues.

Provide leadership which encourages a consultative interaction with all team members.

Comply with the requirements of this CEMP and any applicable legislation.

Encourage hazard identification and reporting by all site workers to ensure that information gained is used to best effect in ensuring preventative actions are implemented.

Data from Hazard Alerts/Observations will be subject to trend analysis and Jemena will be advised by the Construction Supervisor at daily progress meetings as appropriate of trending information.

Ensure that pre-start checks are documented daily and are carried out on all plant and equipment.

Ensure the availability and wearing of PPE.

Encourage incident reporting by all site workers to ensure that information gained from the incident is used to best effect in ensuring preventative actions are implemented.

Lead or participate in incident investigations.

Notify the Project Manager and commence preparation of an Incident Report.

Initiate disciplinary actions for the breach of project environmental requirements.

Ensure Jemena-imposed policy, procedure or systems are implemented as instructed.

### 6.5 Construction Supervisor

The Construction supervisor reports to the WAPL Project Manager and is accountable for compliance with both company and project health and safety and environment requirements. The Construction supervisor has the overriding authority to make decisions with respect to field safety and pollution prevention.

The Construction supervisor shall:

Be responsible for the health, safety and environmental issues relating to construction.

Be responsible for ensuring that sufficient resources are available for the implementation of this CEMP.

Establish and allocate resources to manage emergencies. This shall include training and regular drills to ensure the preparedness to act on all identified potential emergency scenarios.

Liaise with the HSE Advisor regarding upcoming works to ensure all planning and environmental permits are in place.

Identify and implement any specialised training for the construction crew required in relation to health, safety and the environment.

Be responsible for the movement of workers and all plant and equipment and liaise with the Jemena Site Representative and Local Authorities in exercising this responsibility (i.e., Police, Local Shire Authorities)

Be responsible for the implementation of health, safety, and environment related procedures during all construction activities.

Select supervisors from experienced and competent persons.

Encourage hazard identification and reporting by all site workers to ensure that information gained is used to best effect in ensuring preventative actions are implemented.

Ensure supervision backup during leave rotations and/or absences due to the work cycle rotation stand-by supervisors where required with all appropriate and compulsory training as identified in the Training Matrix including requirements by Jemena.

Implement disciplinary actions for the breach of Project environmental requirements.

Report all incidents to the Project Manager.

Encourage incident reporting by all site workers to ensure that information gained from the incident is used to best effect in ensuring preventative actions are implemented.

Notify the Project Manager and Jemena of all near misses and all incident events which involve environmental harm or nuisance.

- Participate or lead incident investigations.
- Ensure that a documented preliminary incident report is completed and provided to the Project Manager within 24 hours of a Project incident.
- Manage all emergencies at the construction site in accordance with the approved Emergency Response Plan.
- Nominate, in consultation with the Project Manager, a suitably qualified investigation team for any incident requiring submission to a statutory authority.
- Ensure investigation forms are accurately completed and closed out and involved workers have been informed; and
- Review the quality, thoroughness, and adequacy of corrective actions for each investigation.

### 6.6 Project Engineer

The Project Engineer is accountable to the Project Manager. The Project Engineer shall be responsible for all factors relating to health, safety and the environment on the project.

The Project Engineer shall ensure that:

- The project CEMP is developed and implemented.
- Health, safety, and environment requirements are in compliance with all current statutory obligations.
- Health, safety, and environment requirements are in compliance with Jemena requirements.
- Copies of relevant legislation, codes of practice, codes and standards are readily accessible.
- Hazards are identified, and risk assessment procedures are instigated.
- Subcontractors have suitable experience and knowledge to conduct any potential work scope in compliance with project health, safety and environmental requirements.
- Plant and Equipment used on the site have completed and passed an appropriate Plant Risk Assessment
- Schedule an audit on project activities and subcontractors.
- Performance is monitored, documented, and reported to the Project Manager.
- The CEMP is regularly reviewed, and system improvements initiated.
- Procedures are established for distribution, reporting, and reviewing HSE issues.

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- Participate or lead incident investigations.
- Adequate and effective training programs are developed and implemented; and
- Adequate resources are available for elected health, safety, and environment representatives.

#### 6.7 Workers and Subcontractors

All workers, including subcontractors, are responsible as individuals for their individual health, safety and environment compliance and the wellbeing of others, in so far as they have some control, either direct or indirect.

Each person shall:

- Be responsible for keeping the workplace in a clean and tidy condition.
- Immediately report all incidents/accidents, or other health, safety, and environment concerns in the workplace, and participate in incident investigations.
- Only perform work for which they have been trained.
- Comply with the requirements of statutory environmental legislation, including but not limited to the *Protection of the Environment Operations Act 1997 (NSW)*
- Participate in health, safety, and environment awareness training.
- Comply with, and adhere to the CEMP, sub plans, work instructions and procedures.
- Take steps to fix, on their own initiative, and report any hazards that are identified at work.
- Correctly use tools, material, personal protective equipment, and pollution controls.
- Immediately report to their manager or supervisor all injuries, illnesses, safety / environment incidents and near misses, no matter how minor.

#### 6.8 Subcontractors list

WAPL's success in part will depend on the success of its Subcontractors. The philosophy is to always set up Service Providers and Subcontractors to succeed with their element of the work.

The table below captures the portions of the works scope that will be carried out by sub-contractors and the current list of identified sub-contractors.

Work Scope	Identified Sub Contractors	Origin
General Cranage	Self-Perform	
Piping Fabrication	Trushape	Adelaide
E&I Supply and Installation	Watters Electrical	NSW & Victoria
Structural	Trushape	Adelaide
Concrete Works	TBC	Local NSW
Civil Works	TBC	Local NSW
Survey / Laser Survey	Land Partners	NSW / Brisbane QLD

## 7 PROJECT ACTIVITIES

The Stage 2 construction activities includes:

- Mobilisations to site and setup of site offices and facilities
- Site survey and set out - Clearing of vegetation in site permanent and temporary laydown areas
- Earthworks – cut and fill to prepare site hardstand using mechanical plant and hand tools
- Installation of underground conduits and services
- Civil works, installation of pre-cast and poured in-situ concrete footings
- Installation of structural steel for pipe, equipment and platform supports
- Landing of pre-packaged equipment and control room
- Piping and valves installation - flanged connections and onsite welding (inc. NDT, hydrotesting and coatings)
- Modification of external mains power connection to site, inc. underground conduit to new pit
- Electrical cable support infrastructure installation
- Electrical cable pulling and terminations
- Instrument tubing installation and connections
- Existing site shutdown for piping and electrical tie-ins

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- Installation of security systems
- Site fencing and finishing earthworks of surrounding drainage and access
- Remediation of temporary laydown areas and demobilisation
- Pre-commissioning of equipment and piping system

Construction is expected to commence in Mid April 2023 and go for a duration of 7 months.

### 8 OBJECTIVES

The overriding project objective is **“zero harm to workers, the community and the environment”**.

The objective of this CEMP is to establish, maintain and monitor measurable and achievable environmental project performance targets consistent with WAPL and Jemena Corporate Environmental Policies and conditions of approval as stated in SSI 9973 Modification 2 and commitments in Modification 1 and 2 reports and assessments.

This CEMP establishes procedures to ensure that the appropriate environment standards are maintained during the construction and commissioning phase of the project as determined by law, industry practice and specifically prepared guidelines and risk assessment for the project.

WAPL will provide an environment that is safe and promotes good health for all workers. The success of this CEMP depends on *all workers* engaged in company activities establishing and maintaining a positive attitude towards the environment.

WAPL strives for the highest standard and promotes best practice in occupational health, safety, environment and welfare. WAPL is aware of its responsibility to provide an occupational environment that fosters the well-being of its workers. Accident prevention is an integral part of the WAPL management philosophy.

#### 8.1 Lagging Indicators

Measure	Target
Near Misses	N/A
Environmental Incidents	0
Regulatory Notifiable Incidents	0

#### 8.2 Leading Indicators

Measure	Responsibility	Target
Take 5	Crew	1 per person/crew each day
Hazard Eliminations (HAZOB cards)	All Crew	Where required
SWMS Review	All Crew/HSE Advisor	Start of task and when any significant change
Corrective Actions closeout	Project Manager	By assigned closeout date
Pre-start Meetings	Construction Supervisor	Daily
Toolbox Meeting	Construction Supervisor/HSE Advisor	Weekly
Audit compliance	HSE Advisor	90% CARE Plan
Site Inspections	Construction Supervisor/HSE Advisor	Weekly
Environmental Inspections	HSE Advisor	Weekly and Pre and Post rainfall events causing stormwater runoff.
Daily Report	Project Engineer	Daily
Weekly Report	Project Manager	Weekly
Monthly Report	Project Manager	Monthly
HSE Report	HSE Advisor	Monthly

## 9 POLICY STATEMENTS

The WAPL President has prepared and signed WAPL Policy Statements which is the recognition that each member of the project team is committed to the content and statements within these policies. Copies of the WAPL policy statements will be displayed at prominent locations at work sites.

- WAPL-HSS-POL-001 Health and Safety
- WAPL-HRE-POL-002 Occupational Rehabilitation Policy
- WAPL-HSS-POL-004 Chain of Responsibility Policy
- WAPL-ENV-POL-001 Environmental Policy
- WAPL-ENV-PLN-004 Stakeholder Management Plan
- WAPL-HSS-PRC-029 HSEQ Communication & Consultation Procedure

## 10 RISK ASSESSMENT AND HAZARD MANAGEMENT

The Project shall establish a multi-layer systems approach that enables the identification of hazards and assessment of risks and hazards associated with construction operations on the Project up to the time the facility is assigned for hand over to Jemena and implement control measures based on a hierarchy of risk control that ensures risk is reduced to as low as reasonably practicable (ALARP).

## 11 SELECTION OF WORKERS, COMPETENCY AND TRAINING

The WAPL Project Team has the responsibility to ensure its management, supervision, workers, subcontractors and visitors have the necessary skills and knowledge, and are competent to advise and enforce compliance of this Project CEMP.

### 11.1 Induction

All construction personnel, including sub-contractors will attend a Project induction prior to commencing works. The Project Induction will include environmental and heritage components designed to meet the projected Project risks to ensure that all personnel are aware of their environmental, land access and heritage responsibilities.

In accordance with project requirements for Induction and Training, the Construction Supervisor is to ensure that all project workers are inducted before commencement of project works. Key topics of the Project environmental induction include:

- Site hazards in an operational facility on a high-pressure gas site.
- Relevant legislation and legislative requirements.
- Roles and responsibilities.
- General awareness of environmental, land access and heritage management protocols and procedures
- Incident reporting, spill management and response.
- Air quality and dust management.
- Management of sensitive areas and Aboriginal / Historic heritage.
- Vegetation and habitat management including fauna.
- Biosecurity and declared weeds.
- Waste management.
- Access Conditions including stakeholder and public communication.
- Emergency response; and
- Traffic management.

Visitors must undertake a visitors' induction and be always accompanied by a fully inducted person.

### 11.2 Training

#### 11.2.1 Toolbox Meetings

Toolbox meetings will be used as a communication and training tool to increase general environmental awareness as well as site specific environmental information required to undertake a particular construction activity.

Toolbox meetings may also be used as a tool to convey information for continual improvement, detail any change in work crew assignment, change in work scope, following an incident and to report on the findings and ensure any risks associated are understood, SWMSs updates and the necessary precautionary measures identified and implemented for each task to be conducted. The Construction supervisor will ensure that an environmental themed toolbox is conducted during the project as required.

Attendance Record sheets will be used to record attendance at Toolbox meetings.

Minutes of the meetings will be maintained and any actions raised are recorded and tracked to their completion. Feedback on progress will be provided to managers, contractors, employees / subcontractors at subsequent Toolbox meetings or as required dependent on the urgency of the issue.

### 11.3 Training Records

The HSE Advisor will maintain on site access to the current training and competency matrix register information of project specific worker training (e.g., Supervisor Training, Induction Training, HIRAC, Incident Investigation, etc), planned or completed and competency records for plant operation and other construction activities requiring licensing, permit and/or certification requirements of the relevant statutory authorities, with copies of worker competency certification available on file, retained on site.

Records of assessment and attendance are maintained by the Project Team.

The Construction Supervisor, in consultation with the Project Manager, will periodically review training and competency records and monitor copies of training attendance.

## 12 COMMUNICATION AND ENGAGEMENT

### 12.1 Prestart Briefings

The Construction Supervisor is to facilitate and organise shift/task Pre-start Meetings. Points of discussion/consultation will include but are not limited to:

- Weather observations / forecast
- Proposed activities and task assignments
- Permit To Work (PTW) requirements
- Activities to be conducted and Safe Work Method Statement (SWMS) requirements
- Incidents and hazards that have recently occurred
- Any changes that could affect current Standard Operating Procedure and require a SWMS
- Changes to adjacent works and required a SWMS
- Environmental focus for the day (e.g. Housekeeping / litter clean-up, water management, dust control, etc.)
- Notices about up and coming events such as environment and community meetings, audits, environmental inspections
- Feedback on previous day's work practices
- Feedback from environment, community and stakeholder meetings
- Individual concerns,
- Provide as appropriate a daily safety alert and/or other promotional information for inclusion to be addressed by Field Supervisors
- Record these meeting and briefings; and
- Collect completed copies of meeting records to confirm attendance and facilitate any follow-up requirements

### 12.2 Community and Stakeholder Consultation

Jemena will be responsible for continuing general Project communications with the surrounding community and stakeholders, including but not limited to:

- Regulatory Authorities / Government Departments
- Other Asset Owners / Operators
- Community Groups / Landowners / General Public
- Local Council
- Local Emergency Services

Jemena will use a range of tools to communicate with the community and its stakeholders. The full list is available within the Stakeholder Management Plan and includes:

- Eastern Gas Pipeline web page (Fact Sheets, Project Updates, FAQs, Feedback and Project Documentation) (<https://jemena.com.au/pipelines/eastern-gas-pipeline>)
- Media releases (<https://jemena.com.au/about/newsroom>)

In addition to the above public communication activities, Jemena will conduct consultation briefings with key stakeholders. This will include:

- Face to face discussions and meetings.
- Letters, emails, phone calls.
- On site meetings; and

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- 1300 community feedback on 1300 081 989

WAPL have engaged Evolution to undertake traffic management issues and may be required to liaise with Transport for NSW (TfNSW).

#### 12.3 Community Enquiries and Complaints

WAPL will ensure any community enquiries or complaints are:

Recorded, acknowledged, and responded to in a timely, accurate and respectful way.

Regularly reviewed to improve future performance and minimise the cause of common complaints.

WAPL will provide assistance to Jemena when assistance is requested relating to a community enquiry and or complaint. Details of actions taken will be provided to Jemena as part of the Weekly Report.

#### 12.4 Complaints Procedure

Project related complaints will be reported to Jemena immediately, recorded in ASPIRE and investigated as appropriate. The complaint investigation process will be completed in accordance with Jemena's issues management procedure provided in Appendix B of Jemena's EMP see below Table 1 . Further information during construction will be provided by WAPL within 24 hours with responses / resolutions to the complaint to be communicated by the Jemena Project Team.

Jemena will be notified immediately of any issues, disputes or complaints raised by any relevant stakeholders in relation to the Infrastructure Approval - Eastern Gas Pipeline SSI 9973.

A stakeholder communication schedule will be maintained for the project and all complaints provided to Jemena at the completion of every month.



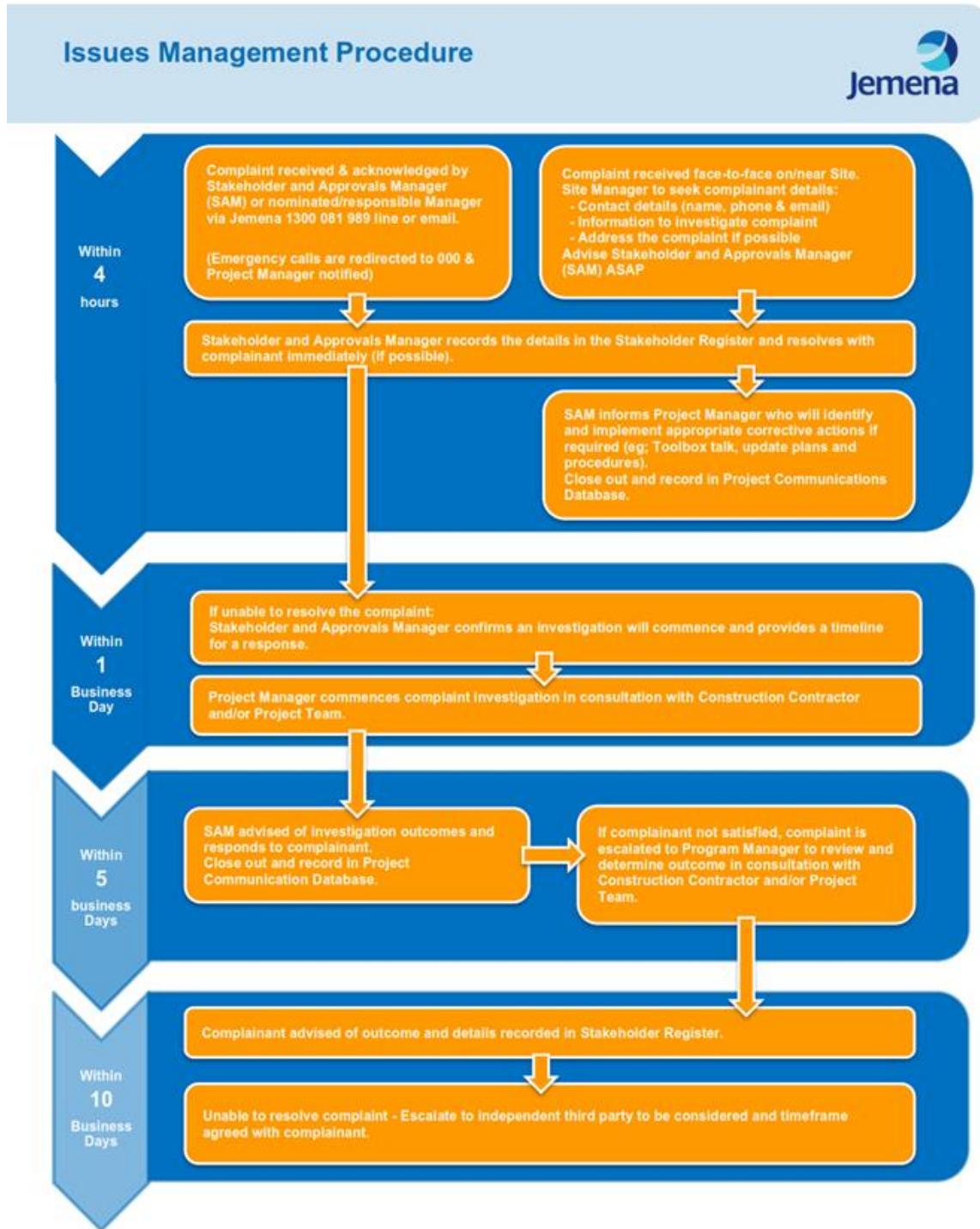


Figure 2 - Issues Management Procedure

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#### 12.5 Internal Communication and Reporting

During construction of the Project, meetings will be held between Jemena and WAPL to discuss environmental and community management matters. Other methods of internal communication include:

- Inductions
- Toolbox talks
- Pre-start meetings
- Environmental Alerts

##### 12.5.1 Contacts

A current listing of key project contacts, regulatory agencies and emergency services details will be kept in a prominent location in site offices for reporting of incidents and emergency situations.

Similarly, the Contractor will have key contacts and notification processes in their site offices. Contractor incidents will be reported to Jemena in accordance with Jemena prescribed methods and timelines for reporting of incidents.

#### 12.6 Environmental Promotion and Communication

WAPL recognises the importance of promoting environmental awareness and understanding to Workers, sub contactors and where appropriate to the wider community as part of working towards achieving environmental objectives.

Environmental management is promoted through:

- Displaying the Environmental Policy Statement
- Communicating environmental objectives to Workers and contractors, through inductions, toolbox meetings, pre-start meetings and other means
- Sharing environmental performance data with Workers and contractors
- Periodic use of site notice boards for display of environmental material
- Incorporating environmental considerations into pre-start meetings
- Displaying and presenting environmental incident response procedures
- Documenting of community interactions; and
- Communicating environmental inspection and audit results

Environmental matters are communicated through the following internal communication channels:

- Project Management Progress Meetings
- Project Daily Field Progress Management Meetings
- Pre-start meetings/Team Briefings
- Toolbox Meetings/Briefings; and
- Noticeboards

#### 12.7 Mobilisation Notification

WAPL (via Jemena) will notify the Department of the relevant date via the Major Projects Portal at least two weeks prior to the commencement of the construction and commissioning of the Stage 2 Port Kembla Lateral Looping Pipeline.

## 13 INCIDENTS, REPORTING AND NON-COMPLIANCES

### 13.1 Incidents

Incidents, near miss incidents and non-compliance associated with the environment or community relations will be reported to Jemena immediately by the WAPL Project Management Team.

WAPL (via Jemena) shall immediately notify the DPE and any other relevant agencies immediately after it becomes aware of an incident. The notification must be in writing via the Major Projects Website and identify the development (including the development application number and name) and set out the location and nature of the incident.

Incident Reports are completed initially by the worker and the HSE Advisor or Construction Supervisor or Project Manager.

All incidents are reported via WAPL Rapid Incident, and other documentation such as witness statements, investigation forms or forms as required by Jemena or government authorities are to be submitted.

As soon as practicable verbally, but within 24 hours, the Project Manager (or delegate) will provide a report to the Jemena Project Manager setting out fully all material facts and circumstances concerning the incident that the WAPL Project Management Team is aware of or is able, by reasonable search and inquiry, to find out.

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Environmental incidents will be responded to and reported to Jemena for lodgement under their Incident Management Procedure.

Project environmental incidents are considered to include the following:

- A pollution incident (i.e. dust, noise, hydrocarbon spill, water pollution)
- Where there is the potential for a legal breach
- Significant impact on people or the environment (flora and fauna) has been/ may be caused by the incident
- Native vegetation is accidentally or unintentionally damaged or removed
- Impacts on indigenous or non-indigenous heritage aspects
- Injury or fatality to a native fauna species (including listed species)
- A non-compliance includes contravention of any of the conditions in the Instrument of Consent

### 13.2 Incident Investigation and Notification

All incident investigations are to focus on identifying the causes of the incident so that appropriate control measures may be implemented to prevent recurrence of the incident. All incident reports and incident investigation reports shall be completed in alignment to WAPL-SYS-PRC-003 Incident Investigation Procedure (refer to Appendix B) along with WAPL's HSE Incident reporting guidelines - see below:

Incident Type	Verbal Notification	Preliminary Incident Report	Final Incident Investigation Report
<b>High Potential Hazard / Near Miss</b>	within 1 hour	1 working day	5 working days
<b>First Aid Injury</b>	Within 1 hour	1 working day	5 working days
<b>Minor Medical</b>	Within 1 hour	1 working day	5 working days
<b>Moderate Medical</b>	Within 1 hour	1 working days	5 working days
<b>Lost Time Injury</b>	Within 1 hour	1 working days	5 working days
<b>Fatality</b>	30 minutes	2 working days	20 working days
<b>Notifiable Incident</b>	Within 2 hours	1 working days	5 working days
<b>Environmental Breaches</b>	Within 2 hours	1 working days	5 working days
<b>Regulatory Notices</b>	Within 2 hours	1 working days	5 working days

Incident Reporting and Investigation Reports must be completed, and corrective action items implemented, verified, and signed off prior to the incident being closed out by the WAPL Project Manager and the Jemena Project Manager.

Closed out Incident Reporting and Investigation Forms and Reports shall be made available on Rapid Incident, WAPLs Online Incident Reporting System.

WAPL shall develop and maintain a Corrective Actions Register for the duration of the Project, and report on the status of close-out of actions in the Monthly Report.

### 13.3 Corrective Actions

Corrective actions raised during any inspection or audit will be recorded and monitored until the action is closed out. Timeframes to close out corrective actions will be used if necessary to prevent or minimise as far as reasonably practicable environmental harm or nuisance occurring due to construction related activities.

Environmental corrective actions will be closed out in a timely manner and controlled through a corrective action register.

### 13.4 POPE Act Incident Notification

In accordance with the *Protection of the Environment Operations Act 1997* (POEO Act) the Environment Protection Authority (EPA) must be notified of pollution incidents that cause or threaten material harm to the environment.

'Material harm to the environment' includes on-site harm, as well as harm to the environment beyond the premises where the pollution incident occurred.

A 'pollution incident' includes a leak, spill or escape of a substance, or circumstances in which this is likely to occur. 'Pollution incident' is defined in the Dictionary to the Act as follows:

*“Pollution incident means an incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill or other escape or deposit of a substance, as a result of which pollution has occurred, is occurring or is likely to occur. It includes an incident or set of circumstances in which a substance has been placed or disposed of on premises, but it does not include an incident or set of circumstances involving only the emission of any noise.”*

As the EPA is the appropriate regulatory authority (ARA), Wasco will provide support to Jemena as they will notify EPA via the EPA Environment Line (telephone 131 555) in accordance with Part 5.7 of the POEO Act.

POPE Act Incidents will be managed through Jemena’s incident management procedure provided in Appendix H of Jemena’s EMP.

### 13.5 DPE Incident and Non-compliance Notifications

The Instrument of Consent defines an incident as “An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance”.

Within seven days of becoming aware of a non-compliance, WAPL or Jemena must notify the Department of the non-compliance. The notification must set out the condition of this consent that the development is non-compliant with, why it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

#### 13.5.1 Third Party Incident Reporting

Jemena will report all incidents, to DPE, Council and any other relevant government agencies within seven days of becoming aware of an incident. The notification will identify the Project, including the development application number and set out the location and nature of the incident.

The notification will identify the Project, including the development application number, set out the condition of consent that the Project is non-compliant with, why it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

### 13.6 Internal Reporting

WAPL will provide the following information to Jemena in Weekly and Monthly Reports:

- Communication, consultation, and training outcomes
- Weekly inspection checklists
- Monthly and annual report on monitoring, environmental compliance, incidents and corrective actions
- Records and logs of construction and operational activities
- Internal incident reports
- Monitoring data

### 13.7 Monthly Reporting

WAPL will provide Jemena with a Monthly Environmental Performance Report that includes the results of monitoring, verification inspections, non-conformances with this CEMP, non-compliances with relevant statutory requirements, environmental incidents and corrective actions.

### 13.8 Damage to and rectification of Public Infrastructure

WAPL will repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the construction of the Stage 2 Port Kembla Lateral Looping Pipeline Facilities

## 14 INSPECTIONS, MONITORING AND AUDITING

Inspections, monitoring and audits will be used as tools during construction to monitor and evaluate the effectiveness of the implementation of environmental controls required by the CEMP.

### 14.1 Inspections

WAPL HSE Advisor or delegate will undertake visual and documented environmental inspections of active work fronts and other disturbed areas for the duration of the Project.

The purpose of the inspections are to:

- Provide a surveillance tool to confirm that controls are being implemented
- Identify where issues or impacts might be occurring (or have the potential to occur)
- Identify where ineffective environmental practices are being implemented

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- Facilitate the identification and early resolution of issues/concerns
- That management measures have achieved their intended outcomes, or on track to achieve intended outcomes
- That identified environmental risks have been eliminated or minimised so far as reasonably practicable
- Compliance with applicable statutory requirements

### 14.1.1 Daily

Visual inspections of the active work fronts will be undertaken by the WAPL HSE Advisor or delegate on a daily basis. Any environmental hazards or non-conformances with this CEMP will be recorded and corrective actions will be assigned to the person responsible for rectifying the issue. In addition to daily visual inspections be undertaken, the table below outlines examples of activities that require specific attention.

Activity	Management Plan	Frequency
Adequacy of all erosion controls	Soil and Water Management Sub-plan (inc Erosion and Sediment Control Plan)	Daily (during rainfall) Weekly (even if work not occurring) Within 24 hours prior to rainfall Within 18 hours following rainfall
Fauna check of any open trenches / bell holes / excavations	Biodiversity Management Sub-plan	Daily (immediately after work commences)
Visual monitoring of dust generation	Air Quality Management Plan	Daily
Monitoring of noise generation	Noise Emission Management Plan	Daily when undertaking noisy works in high risk areas

### 14.1.2 Weekly

Weekly inspections are to be recorded on the Environmental Inspection Form (WAPL-ENV-FRM-001) (refer to Appendix C) and will include assessment of the following:

- Site access compliance (e.g. works contained within Site boundaries and compliance with any landowner agreements)
- Adherence to applicable conditions of approval within Project permits/licenses
- Adherence to this CEMP and associated sub plans, inclusive of:
  - Soil management and stockpiling
  - Sediment control
  - Dust and noise control
  - Waste management
  - Fauna and flora management (including weeds and pest management)
  - Heritage
  - Air, noise and vibration monitoring
  - Surface water
- Maintenance of controls (e.g. fencing, sediment and erosion controls etc.)

Any environmental hazards or non-conformances with this CEMP will be recorded and corrective actions will be assigned to the person responsible for rectifying the issue. Any contractual non-conformances or incidents raised during the Weekly Environment Inspection will be recorded, reported and managed.

If the management measures set out by this CEMP are not being met during construction corrective actions will be implemented. Corrective actions will be assigned as appropriate for the nature and scale of the non-conformance. Generally, minor non-conformances will require the management actions to be implemented, additional toolbox talks or training for staff, review of SWMS, or additional remedial works to occur. Where the non-conformance is major, an incident investigation will be undertaken to determine the causes and impacts of the non-conformance and outline specific remedial and corrective actions to avoid a recurrence.

All incidents and accidents must be reported as per WAPL-SYS-PRC-002\_Wasco Incident Reporting Procedure.

The Construction Supervisor will closely monitor reportable incidents and keep Jemena fully informed at all times.



**14.2 Monitoring**

WAPL will maintain a Corrective Actions Register with all items arising from weekly inspections and close out actions arising and when completed, with supporting evidence. Corrective Actions Register to be used to identify ongoing work aspects / activities regularly resulting in corrective actions and implement systemic or procedural changes to reduce corrective actions.

**14.3 Documentation and Record Keeping**

In accordance with Jemena’s Document Management procedure, project records will be maintained to provide evidence of conformity to contractual requirements, regulatory requirements and to demonstrate the effective implementation of the EMP.

Records can be in the form of hard copy media or they can be in electronic or other media. Records to be retained include Training Certificates and Records, Project Inductions, Toolbox Meeting, HSEQ meeting Minutes, Incident Investigations and Reports, Site Inspections, Project Plans, Safety Data Sheets, Registers and Certificates supplied by the Construction Contractor and subcontractors.

**14.3.1 Registers**

During construction, WAPL will maintain the registers to monitor and record compliance. Typical Registers will include, but may not be limited to:

- Weed Hygiene Register
- Complaints Register
- Fauna Relocation / fatality Register
- Incident Register
- Environmental Inspections Register
- Corrective Actions Register
- Waster Tracking Register
- Fuel and diesel Consumption (GHG) Register

**14.4 Auditing**

Regular audits will be undertaken by Jemena throughout all phases of the Project. A specific schedule for auditing will be developed prior to commencement of construction and will reflect any commitments or requirements identified through the EIS, Modification and conditions of approvals, permits and licences issued to the Project.

The audits will specifically compare on-ground works with management commitments and performance objectives. Any non-conformance with these criteria will trigger the implementation of corrective actions, and associated reporting where required. Where management measures are not achieving objectives and performance criteria, Environment Management Plans and procedures will be updated as required.

**14.4.1 Internal Audits**

WAPL will self-perform environmental audits that will be undertaken by suitably qualified Contractor environmental personnel not engaged on site in the delivery of the project. Such self-audits are to be completed **within 7 days of commencement of environmentally high-risk activities – such as Clear and Grade, HDD, trenching, reinstatement.** The CEMP is to include a proposed audit program and schedule. The Contractor personnel proposed to perform audits is to be approved by Jemena prior to commencing such audits.

Audit Schedule

Activity	Audit Schedule	Proposed Personnel to Undertake Audit
Clear and Grade	7 days after activity commences	Matt McDermott / Mitch Pearce from CNC Project Management
Trenching	7 days after activity commences	Matt McDermott / Mitch Pearce from CNC Project Management
Reinstatement	7 days after activity commences and post completion	Matt McDermott / Mitch Pearce from CNC Project Management

**15 REVIEW AND IMPROVEMENT**

Review and continuous improvement of the EMP will be achieved through ongoing monitoring and evaluation, implementation of preventative and corrective actions, communication with internal and external stakeholders and measuring progress against objectives and targets and program milestones. Opportunities for improvement

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will be implemented through changes to this EMP, the CEMP and sub-plans, procedures and programs as appropriate.

Environmental documentation will be revised if:

- There are relevant changes to environmental conditions or generally accepted environmental management practices.
- Previous unforeseen environmental risks are identified.
- Previously unidentified areas of contamination are discovered.
- There is a change in relevant legislation that impacts on either the design outputs or construction activities.
- There is a formal request made by DPE or other key stakeholders to make modifications; and/or
- There is a non-conformance relevant to the CEMP (not of minor nature)

#### 15.1 Consultation with Council, TfNSW and Sydney Trains

Consultation on the plan was undertaken with the following stakeholders:

Transport for NSW (TfNSW); and  
Wollongong City Council (WCC)

Comments and feedback received during consultation were incorporated into the plan where relevant for submission to the DPE for approval.

Details of the consultation associated with this plan is presented in Appendix E

It should be noted that WAPL's scope of works do not interface with Sydney Trains assets, therefore, consultation with Sydney Trains would not be required.

## 16 EMERGENCY MANAGEMENT

Any situation that requires emergency assistance to prevent or reduce harm to people, property or the environment, the Construction supervisor, in consultation with the Project Management Team, will ensure that actions will be taken, and control measures implemented on the WAPL site per 2166-HSS-PLN-002 Emergency Response Procedure. Such situations include, but not limited to:

- Fire or explosion.
- Medical emergencies (i.e., life-threatening injury requiring urgent medical attention)
- Uncontrolled release of a flammable gas or liquid.
- Major spill or other environmental emergencies (i.e., release of a substance other than flammable gas which presents a significant risk to safety or the environment)
- Significant weather events, including bushfires.
- Excavation or trench collapse / slump

An assessment of the project first aid and emergency equipment (WAPL-HSS-FRM-043) will be conducted prior to the commencement of works. This assessment is to be carried out by a trained and competent worker, that has successfully completed the relevant training courses (HLTAID003 & HLTAID001 or HLTAID009) and WAPL internal Risk Management and HIRAC training, as documented by the WAPL Training Matrix.

The procedure will be used in conjunction with the Jemena's Project Emergency Response Plan.

## 17 ENVIRONMENTAL MANAGEMENT

Construction activity based environmental management measures are presented below and include requirements in Infrastructure Approval SS9973 Modification 2 (Schedule A) and commitments in the Mod 1 and 2 reports. The environmental elements to be addressed include:

- Noise and Vibration
- Out of Hours Protocol
- Air Quality
- Biodiversity and Biosecurity
- Heritage (including unexpected finds)
- Waste Management
- Contamination and Hazardous Chemicals
- Soil and Water (including Erosion and Sediment Control)
- Traffic Management
- Visual Impact



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Environmental objectives and standards will be followed and met during construction of the Project and provide a clear guide for management of environmental issues.

It is emphasised that all activities related to all phases of the Project should:

Ensure adequate planning and resources

Minimise harm to the environment

Minimise waste

Avoid disturbance to sites of cultural heritage significance

Minimise social impacts to inhabitants of the area and its surrounds; and

Maintain best practice erosion and sediment control standards during construction

Given the nature of activities proposed, the level of investigation and refinement undertaken to date and ongoing, and the standard of mitigation measures proposed by WAPL to minimise impacts, it is not likely that the construction works will result in any significant, long-term, or irreversible environmental impacts.

Construction will result in short-term disturbance, which is minimised to the greatest extent practicable through implementation of a range of management measures.

### 17.2 Noise and Vibration

Construction noise and vibration generated by the Project would be short term, localised and would predominately occur during standard construction hours, therefore, no specialist noise or vibration impact assessment has been completed for construction and WAPL would manage construction noise and vibration in accordance with the management measures applicable from the NSW *Department of Environment & Climate Change's Interim Construction Noise Guideline*.

Due to the Project being located away from sensitive vibration receptors. No vibration impacts are likely to occur due to construction of the Project.

#### 17.2.1 Construction Operation Hours

Works will occur between the below standard construction hours unless exempt (17.2.2) or approved under the Out of Hours Work Protocol (17.2.4) (Condition B6):

- 7am to 6pm Monday to Friday
- 8am to 1pm Saturday; and
- At no time on Sundays and NSW public holidays

However, it is noted, as per the New Ministerial Orders (dated 31 March 2020):

Minister for Planning and Public Spaces made the Environmental Planning and Assessment (COVID-19 Development – Construction Workdays) Order 2020 allowing development to be carried out on weekends and public holidays as long as work was limited to weekday hours and doesn't involve high noise generating works. It is noted that there are conditions which must be abided and adhered to including the limits of operation of certain equipment and complying with the conditions of consent which restrict the hours of work or operation.

#### 17.2.2 Exemptions to Standard Construction Hours

In accordance with the *Department of Environment & Climate Change's Interim Construction Noise Guideline*, works may occur outside the standard construction hours are:

- The delivery of oversized plant or structures that police or other authorities determine require special arrangements to transport along public roads
- Emergency work to avoid the loss of life or damage to property or to prevent environmental harm
- Where a negotiated agreement has been reached with affected receivers
- Works as approved through the out-of-hours work protocol outlined in the CEMP and approved by DPE

If WAPL are undertaking works in accordance with allowable exemptions listed above, WAPL will provide Jemena with verbal notification as soon as practicable and follow up with written notification of the works, which will include information required to be submitted to DPE for approval.

If works are required to be conducted outside the standard construction hours and are not allowed under the *Interim Construction Noise Guideline (DECC, 2009)* WAPL will obtain approval through the out-of-hours work protocol outlined in section 17.2.4.

If WAPL is required to operate under the out-of-hours work protocol an Environment or Noise Consultant will be engaged to manage the noise assessments required, which will be submitted to DPE for review and approval.

17.2.3 Community Notifications

WAPL will undertake its best endeavours to undertake community notifications with affected community members and landholders when undertaking any out of hours works. Notifications could occur via door knocks or letter box drops. Notifications will occur as a minimum:

- Scope of works
- Location of the works
- Hours the works are likely to occur
- Proposed duration of the works
- Types of equipment to be used
- The likely noise or vibration impacts

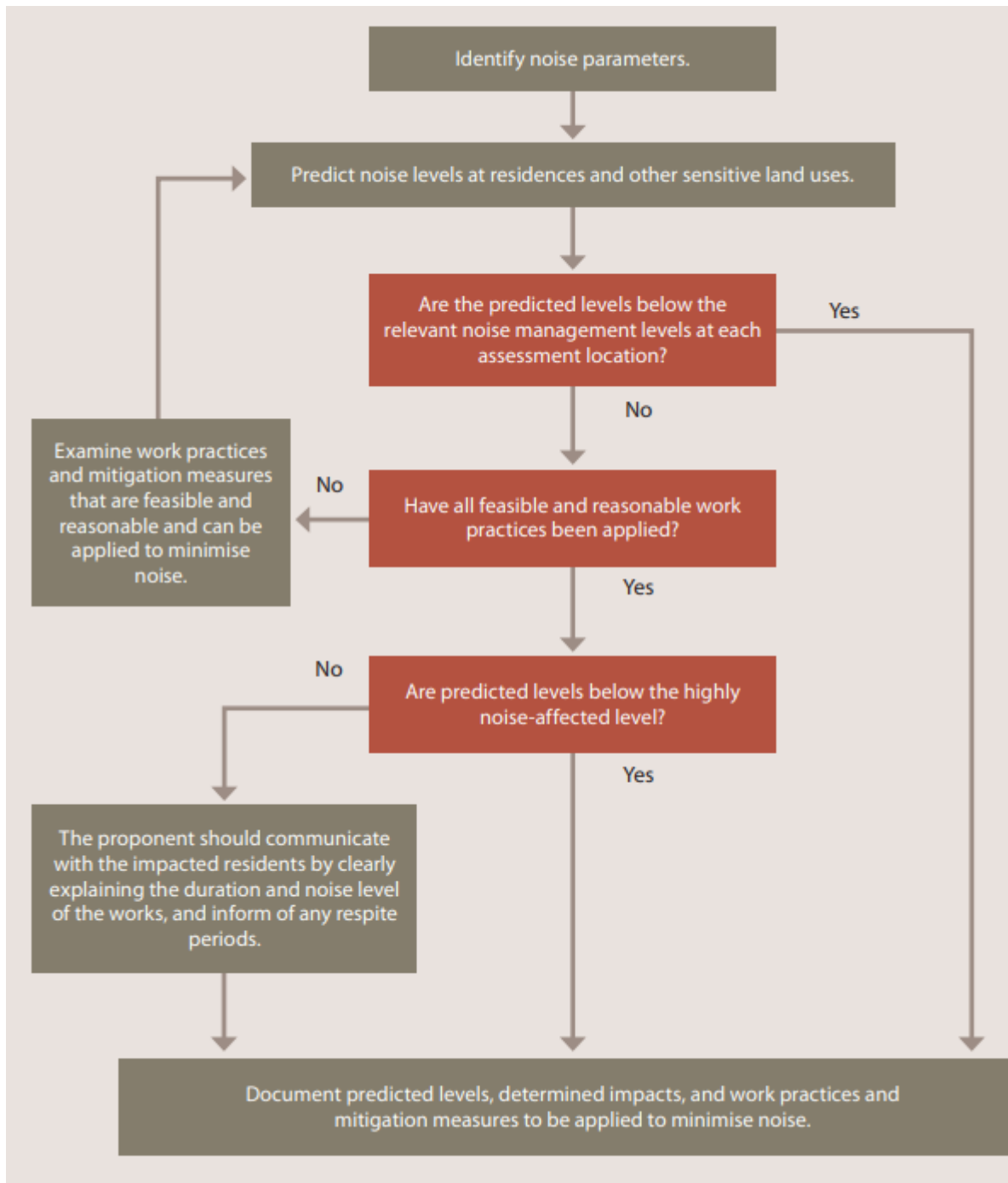
Noise and Vibration Management Plan			
<b>Management Objectives</b>	<ul style="list-style-type: none"> <li>• Minimise noise and vibration impacts to surrounding sensitive receptors during construction (Condition B7)</li> <li>• Conduct works within the standard construction hours unless approved by the Secretary or <i>Interim Construction Noise Guideline</i> (DECC, 2009) or its latest version (Condition B7).</li> </ul>		
<b>Key Performance Indicators</b>	<ul style="list-style-type: none"> <li>• Implement the OOHW Protocol if construction activities are required to be undertaken outside of standard work hours (Condition B6 (d)).</li> </ul>		
Measure/Requirement	Timing	Responsibility	Evidence
Provide training through inductions and toolboxes meetings for workers and contractors to use equipment in ways to minimise construction noise.	Inductions to occur prior to commencing works on the Project. Toolbox meetings on noise to occur prior to noisy construction works (e.g. clear and grade, piling etc.)	Project Manager, Construction Supervisor, HSE Advisor	Induction Records, Toolbox Meetings sign on sheets
Minimise pipeline construction activities near sensitive receivers during more sensitive time periods (evening, night)	During construction	Construction Supervisor, HSE Advisor	Environment Site Inspections
Plan traffic flow, parking and loading/unloading areas to minimise reversing movements within the site.	During construction	Construction Supervisor, HSE Advisor	Environment Site Inspections
Loading and unloading of materials/deliveries is to occur as far as possible from sensitive receivers. Select site access points and roads as far as possible away from sensitive receivers.	During construction	Construction Supervisor, HSE Advisor	Environment Site Inspections
Avoid the use of radios or stereos outside where sensitive receptors can be affected.	During construction	Construction Supervisor, HSE Advisor	Environment Site Inspections
Avoid shouting on the construction site, don't slam plant or vehicle doors.	During construction	Construction Supervisor, HSE Advisor	Environment Site Inspections
Minimise vehicle and plant idling and plan vehicle routes to avoid sensitive receptors as far as reasonably practicable.	During construction	Construction Supervisor, HSE Advisor	Environment Site Inspections
If works at night are required: <ul style="list-style-type: none"> <li>• Avoid using equipment which</li> </ul>	During construction night works	Project Manager, Construction Supervisor, HSE	Toolbox Meetings sign on sheets,

Noise and Vibration Management Plan			
<p>generate impulsive noise</p> <ul style="list-style-type: none"> <li>Minimise the need for reversing or movement alarms where possible.</li> <li>Avoid metal to metal contact on equipment.</li> <li>Schedule truck movements to avoid residential streets if possible.</li> <li>Avoid mobile plant clustering near residences and other sensitive receptors likely to be impacted by noise at night.</li> </ul> <p>Ensure periods of respite are provided in the case of unavoidable maximum noise level extents.</p>		Advisor	Environment Site Inspections, Pre starts
Manage complaints received due to construction noise and vibration meaningfully and in a timely manner.	During construction	Project Manager, Construction Supervisor, HSE Advisor	Complaints Register, Corrective Actions Register, Toolbox Meetings, Pre starts
Where possible, use quieter construction equipment and work methodologies to limit noise generated by construction.	During construction	Project Manager, Construction Supervisor, HSE Advisor	Toolbox Meetings, Pre starts
Operate noise in a quiet and efficient manner and ensure all plant and vehicles are serviced regular and maintained in accordance with their operating manual.	During construction	Project Manager, Construction Supervisor, HSE Advisor	Induction records, Pre starts, Plant maintenance records
Maximise the distance between sensitive receptors and noise generating construction equipment by planning the works area	During construction	Construction Supervisor, HSE Advisor	Pre starts
Where possible, minimise the use of reversing alarms by planning the construction site to allow 'drive through' deliveries.	During construction	Construction Supervisor, HSE Advisor	Pre starts, Toolbox meetings, Induction records
Maximise the use of existing structures and facilities to provide noise shielding.	During construction	Construction Supervisor, HSE Advisor	Pre starts

17.2.4 Out of Hours Protocol

Out-Of-Hours Work Protocol	
<b>Management Objectives</b>	<ul style="list-style-type: none"> <li>• Ensure that best practice environmental management of noise is undertaken throughout construction of the Project.</li> <li>• Jemena to approve all Out-Of-Hours works under this Protocol.</li> <li>• DPE to approve prior to works commencing</li> </ul>
<b>Key Performance Indicators</b>	<ul style="list-style-type: none"> <li>• The out-of-hours work protocol is only to be used when appropriate justification (e.g. safety) for working out of hours exists.</li> </ul>
<b>Introduction</b>	
<p>The following Out-of-Hours Protocol describes the assessment, management review and approval process if out of hours works are required for the construction of the pipeline facility (the Project).</p> <p>The Project is surrounded by industrial premises, public recreation areas and railway infrastructure. The closest residential sensitive receptor is approximately 700m north-north east of the Project and is separated by an elevated woodland area which would largely attenuate construction noise. Therefore, the risk of construction noise impacting residential sensitive receptors or causing human health impacts is low.</p> <p><b>Noise Management Levels</b></p> <p>Management levels for noise at industrial premises allows external noise levels of <math>L_{Aeq (15 \text{ min})}</math> <b>75 dB(A)</b>.</p> <p>Recreational areas allows noise management levels of <math>L_{Aeq (15 \text{ min})}</math> <b>65 dB(A)</b> when active.</p>	
<b>Noise Assessment</b>	
<p>A Noise Assessment is required to be conducted prior to using this out-of-hours work protocol to evaluate the potential construction noise generated above the estimated background noise level. The noise assessment would be undertaken by an Environmental Consultant or Construction Noise specialist on behalf of WAPL.</p> <p>The Noise Assessment prepared for any out of hours works should include:</p> <ul style="list-style-type: none"> <li>• Identification of nearby sensitive receptors and their noise management levels</li> <li>• A description of the proposed out of hours works, the plant, vehicles and equipment required for the works and an assessment of the sound power level likely to be generated by the proposed works</li> <li>• A qualitative noise assessment of the proposed works and its predicted noise level at sensitive receptors</li> <li>• A description of the management measures to be used to minimise noise during the works</li> <li>• A recommendation of community notifications</li> <li>• Complaint management process during the works</li> </ul> <p>The level which the construction activities are likely to exceed the background noise levels (if exceedance occurs) would determine the appropriate management response and approval process. Noise mitigation measures to be implemented for out of hours works would be detailed in the Noise Assessment and approved by Jemena prior to works occurring.</p> <p><i>Noise Assessment Flow Chart</i></p>	

**Out-Of-Hours Work Protocol**



**Review and Approval**

Noise assessments undertaken on behalf of WAPL for out of hour works would be able to proceed after review and approval from Jemena, DPE and community consultation undertaken as required.

#### 17.3 Air Quality

Earthworks and land disturbance required for the construction of the Project has the potential to create nuisance dust effects on surrounding areas/neighbours. There is also potential for further air emissions from diesel exhaust emissions from vehicles and machinery, however due to the short term construction timeframe, impacts from emissions would be of low consequence.

Air quality impacts generated from nuisance dust during constructions will be controlled through environment controls listed in the below Air Quality Management Plan, Erosion and Sediment Control Plan and Traffic Management Plan.

Air Quality Management Plan			
<b>Management Objectives</b>	<ul style="list-style-type: none"> <li>Minimise dust generated during construction of the Project including wind-blown and traffic generated dust (Condition B8)</li> <li>Implement environmental controls for nuisance dust and air quality impacts during construction. Environmental controls will be listed in the below air quality management plan and erosion and sediment control plan.</li> </ul>		
<b>Key Performance Indicators</b>	<ul style="list-style-type: none"> <li>Respond promptly to any construction air quality complaints.</li> </ul>		
Measure/Requirement	Timing	Responsibility	Evidence
Provide training through inductions and toolboxes meetings for workers and contractors to use equipment in ways to minimise dust nuisance.	Prior to and during construction	Project Manager, Construction Supervisor, HSE Advisor	Induction Records, Toolbox Meetings sign on sheets
Disturbance is to occur only within the approved work areas.	During construction	Construction Supervisor, HSE Advisor	Environment Inspections
The approved works area will be delineated and established in accordance with the Project survey. Use fencing and flagging where appropriate to establish No-Go zones and work limits.	During construction	Construction Supervisor, HSE Advisor	Environment Inspections
Visual dust monitoring will occur daily during construction.  Specific focus on visual dust monitoring will occur at stockpile locations and disturbed areas with no ground cover.  Dust monitoring will be increased during windy / dry conditions.	Daily during construction	Project Manager, Construction Supervisor, HSE Advisor	Pre starts, Environment Inspections,
Weather conditions will be monitored / reviewed at the start of each day to enable construction activities or methods to be modified in response to wind / storm conditions predicted to generate visible emissions of dust from the site as a result of construction activities.	Daily during construction	Construction Supervisor, HSE Advisor	Pre starts, Environment Inspections, Corrective actions register
Dust observed being generated by construction activities will be suppressed with water spray.	Daily during construction	Construction Supervisor, HSE Advisor	Pre starts, Environment Inspections, Corrective actions register



# CONSTRUCTION ENVIRONMENT MANAGEMENT PLAN

## 2211 PROJECT MARLIN KGMS FACILITIES PROJECT



Stockpiling must be kept to a minimum. Planning must be undertaken to ensure that minimum amount of spoil and materials are on site. Stockpiles must be given adequate protection (e.g. covered) if dust generation is continually occurring.	Daily during construction	Construction Supervisor	Pre starts
The period of time between excavating and backfilling must be minimised wherever practicable.	Daily during construction	Construction Supervisor	Pre starts
Complaints received relating to dust must be addressed and resolved as soon as possible.	Daily during construction	Construction Supervisor, HSE Advisor	Corrective action register, Pre starts, Toolbox meetings
All spills/droppings of soil and/or clay clods must be cleaned from the road surfaces at the completion of each day's activities or if dry and windy conditions develop.	Daily during construction	Construction Supervisor, HSE Advisor	Corrective action register, Pre starts, Toolbox meetings
All plant will be fitted with manufacturer's standard emissions control equipment and maintained in accordance with the manufacturers' specifications	During construction	Construction Supervisor	Environment Inspections
All plant and equipment will be operated in a proper and efficient manner in accordance with the equipment specifications Switch off plant and equipment when not in constant use	During construction	Construction Supervisor	Environment Inspections
All plant and equipment will be serviced and maintained regularly	During construction	Construction Supervisor	Environment Inspections
Any plant and equipment that is emitting excessive smoke will be assessed and serviced or replaced.	During construction	Construction Supervisor	Environment Inspections

**17.4 Biodiversity**

Direct and indirect impacts to biodiversity values retained within the subject land and adjoining the subject land may occur if adequate mitigation and management measures are not in place during construction of the proposed development.

Mitigation measures to avoid and minimise further indirect impacts to vegetation and habitats during the construction and operation of the proposed development are outlined in the projects Biodiversity Development Assessment Report.

Biodiversity mitigation and management measures will be captured in the Biodiversity Management Sub-plan within the CEMP.

Biodiversity Management Plan			
<b>Management Objectives</b>	<ul style="list-style-type: none"> <li>Construction impacts must be restricted to areas for which biodiversity impacts were assessed in the biodiversity development assessment report (BDAR) and must not encroach into other areas of retained native vegetation and habitat (Condition B15).</li> <li>Identify areas of land that are to be retained as outlined in the BDAR</li> <li>Identify all measures in the BDAR to mitigate and manage impacts on biodiversity, including performance measures for each measure.</li> </ul>		
<b>Key Performance Indicators</b>	<ul style="list-style-type: none"> <li>No clearing or works to be conducted outside the approved works area.</li> </ul>		
Measure/Requirement	Timing	Responsibility	Evidence
Provide training through inductions and toolboxes meetings for workers and contractors with regards to vegetation clearing limits, no-go zones and fauna protection.	Prior to and during construction	Project Manager, Construction Supervisor, HSE Advisor	Induction Records, Toolbox Meetings sign on sheets
All material stockpiles, vehicle parking and machinery storage will be located within cleared areas proposed for clearing, and not in areas of native vegetation that are to be retained.	Daily during construction	Construction Supervisor, HSE Advisor	Environment Inspections
Plant / Equipment must be received at each work location free of soil / organic matter to prevent the introduction of weeds. Plant / Equipment must be inspected and documented in a site diary (or similar) as being clean when arriving to site.	Daily during construction	Construction Supervisor, HSE Advisor	Weed and Seed Certificate / site diary
All construction activities must be contained to the within the approved work area.	Daily during construction	Construction Supervisor, HSE Advisor	Pre starts, Environment Inspections
Any habitat trees inclusive of large nesting material to be removed is inspected prior to clearing by an appropriately qualified ecologist to avoid and minimise the potential for injuries to fauna that may be occupying hollows. – Habitat trees with nests require a pre-clearance assessment 24 hours prior to felling	Daily during construction	Construction Supervisor, HSE Advisor	Environment Inspections

**17.5 Heritage**

An archaeological investigation of the study area has been undertaken for the Project Kembla Looping. The survey revealed that most of the study area had been subject to extensive ground disturbances due to the initial vegetation clearing, construction of industrial buildings and infrastructure, and the modification of the landscape by the deposition of coal slag and fill and construction of a road and rail corridor with associated services. No Aboriginal objects or areas of Potential Archaeological Deposit were identified during the survey.

Mitigation measures to avoid and minimise further indirect impacts to heritage during the construction and operation of the proposed development are outlined in the Aboriginal Cultural Heritage Due Diligence Assessment and Historic Heritage and Archaeological Due Diligence Report.

**17.5.1 Unexpected Heritage Finds and Human Remains Procedure**

An ‘unexpected heritage find’ can be defined as any unanticipated archaeological discovery that has not been identified during a previous assessment or is not covered by an existing permit.

Examples of unexpected heritage finds include:

- Aboriginal stone artefacts, shell middens, burial sites, engraved rock art, scarred trees
- Remains infrastructure including sandstone or brick buildings, wells, cisterns, drainage services, conduits, old kerbing and pavement, former road surfaces, timber and stone culverts, bridge footings and retaining walls
- Artefact scatters including clustering of broken and complete bottles, glass, ceramics, animal bones and clay pipes
- Archaeological human skeletal remains

WAPL will follow the below ‘unexpected heritage finds’ on the Project if heritage objects or human remains are found:

1. Stop all works in the immediate area and establish a hard barricade at least 10m around the find
2. WAPL and Jemena Project Management team will be notified
3. WAPL or Jemena Project Management team will notify Heritage NSW (per section 146 of HA) and the DPE and NSW Police if the find is human remains
4. An archologist / heritage advisor will be brought onto site to assess the find and determine the significance and record the find
5. Archeologist / heritage advisor will determine the appropriate course of action for the find
6. A specific management procedure for the find will be produced. No works will occur in the immediate area likely to damage the find until implementation of the specific management procedure

Heritage Management Plan			
<b>Management Objectives</b>	<ul style="list-style-type: none"> <li>• Protection of heritage items during construction of the Project</li> <li>• No direct or indirect impacts on heritage items during construction of KGMLV (Condition B13).</li> <li>• Unexpected Heritage Finds and Human Remains Procedure implemented if any unexpected heritage finds or human remains are identified during construction activities (Condition B14).</li> </ul>		
<b>Key Performance Indicators</b>	<ul style="list-style-type: none"> <li>• No impacts to heritage items</li> </ul>		
<b>Measure/Requirement</b>	<b>Timing</b>	<b>Responsibility</b>	<b>Evidence</b>
Provide training through inductions and toolboxes meetings for workers which will outline heritage management strategies	Prior to and during construction	Project Manager, Construction Supervisor, HSE Advisor	Induction Records, Toolbox Meetings sign on sheets
If any previously unidentified heritage items or human remains are found during construction the Unexpected Heritage Finds Procedure or the Human Remains Procedure must be followed.	During construction	Project Manager, Construction Supervisor, HSE Advisor, Heritage Advisor	Unexpected finds report

Heritage Management Plan			
Heritage items or human remains must be protected if identified during construction.	During construction	Project Manager, Construction Supervisor, HSE Advisor, Heritage Advisor	Unexpected finds report

## 17.6 Waste Management

The Project will generate waste during construction. Potential impacts from construction waste generation include:

- Minor spills from hazardous fuel and chemical use can be an environmental issue. However, in the context of the materials and equipment utilised on this project, are typically small in scale and localised only. On-site spill kits will be utilised to contain and remove any contaminated materials. Used spill kits shall be disposed of at a licensed waste facility
- Minor pollution of the environment from other general wastes (e.g. packaging). Waste of this type will be collected and disposed of or recycled in appropriate on-site bins
- Incorrect disposal of contaminated waste resulting in pollution

### 17.6.1 Project Waste

The types of waste that may be generated during construction could include contaminated and uncontaminated soils, general solid wastes (packaging, food waste, dried resins, glues etc.) and recyclable and non-recyclable material.

WAPL will aim to comply with objectives of the *Waste Avoidance and Resource Recovery Act 2001* (NSW) by applying the principles of the waste hierarchy to all site waste. The waste hierarchy promotes:

1. **Avoidance of waste:** including actions to reduce the amount of waste generated by households, industry and all levels of government
2. **Resource recovery:** including re-use, recycling, reprocessing and energy recovery, consistent with the most efficient use of the recovered resources
3. **Disposal:** including management of all disposal options in the most environmental responsible manner

Geotechnically suitable material from earthwork operations will be reused as fill / hardstand areas where possible.

Consumables and material that is not contaminated will be removed from site / placed in appropriate waste bins at the end of each day and material that cannot be recycled shall be placed in appropriate waste disposal containers. Material that can be recycled will be placed in appropriate recycling containers.

Contaminated material will be transported and disposed of to a licensed facility and in accordance with relevant regulatory requirements. There is uncertainty surrounding the quantity of waste material that will be generated during construction as this will depend on the quantity of material able to be used as fill and the amount of contaminated material which will need disposed of.

### 17.6.2 Unexpected Finds Procedure

- If any material is uncovered during construction that has visual or olfactory causes of concern (i.e. hydrocarbon shimmer or sulphate smell), WAPL will follow the following unexpected finds procedure for contaminated material. Contain the material in situ and rebury or keep moist if suspected ASS material. Containment must only be conducted if safe to do so.
- Establish exclusion fencing and signage around unexpected find. Fencing must be minimum of 10m away from the find
- Notify Jemena and have suitably qualified person take samples to identify contamination
- If contamination is identified, prepare a site-specific procedure to manage contamination in accordance with the relevant EPA guidelines

### 17.6.3 Disposal and Transport of Waste

WAPL have the responsibility under section 143 of the POEO Act to take reasonable precautions for the transport and disposal of waste generated by the Project. To ensure waste is being transported and disposed of at a licensed facility, WAPL will:

- Conduct training with Construction Supervisors to raise awareness of waste classification, transport and disposal requirements
- Determine the waste types being generated during excavation, demolition and construction
- Engage a licensed waste transporter to transport Project waste and keep records of who transported Project waste and waste dockets/receipts
- Verify the waste disposal's environmental approval to accept the waste type
- Provide waste classifications, origin and quantity when required. A waste register will be maintained to capture this information.

Waste Management Plan			
<b>Management Objectives</b>	<ul style="list-style-type: none"> <li>Minimise waste generated by construction of Project Marlin (Condition B12(a)).</li> <li>Classify all waste generated in accordance with the EPA's Waste Classification Guideline 2014 (or its latest version) (Condition B12(b)).</li> <li>Store and handle all waste in accordance with its classification (Condition B12(c)).</li> <li>Not receive or dispose of any waste within the site corridor (Condition B12(d))</li> <li>Remove all waste from the site corridor as soon as practicable, and ensure it is sent to an appropriately licensed waste facility for disposal (Condition B12(e))</li> </ul>		
<b>Key Performance Indicators</b>	<ul style="list-style-type: none"> <li>All waste is classified, transported and disposed of in accordance with the POEO Act and NSW EPA regulations</li> </ul>		
Measure/Requirement	Timing	Responsibility	Evidence
Provide training through inductions and toolboxes meetings for workers which will outline waste management strategies	Prior to and during construction	Project Manager, Construction Supervisor, HSE Advisor	Induction Records, Toolbox Meetings sign on sheets
Store, manage and handle all waste in accordance with the legislation, Australian standards, local government requirements	During construction	Project Manager, Construction Supervisor, HSE Advisor	Environment and safety inspections / audits
The site must be kept free of litter and waste and waste containers or skip bins must be located at designated storage areas	During construction	Project Manager, Construction Supervisor, HSE Advisor	Environment and safety inspections / audits
Spill kits are to be available at hazardous waste storage areas (i.e. chemical storage containers and refueling areas)	During construction	Project Manager, Construction Supervisor, HSE Advisor	Environment and safety inspections / audits
Toilets at the construction depot must be a self-bunded portable blocks. Cleaning of portable toilet facilities, including waste collection and disposal, must be undertaken by a licensed waste contractor	During construction	Project Manager, Construction Supervisor, HSE Advisor	Environment and safety inspections / audits, Waste register
Maintain a Safety Data Sheet (SDS) register onsite for all chemicals. Ensure the SDS register can be easily accessed by all staff using and working in proximity to chemicals	During construction	Project Manager, Construction Supervisor, HSE Advisor	Environment and safety inspections / audits, Toolbox meetings, Pre starts
Controlled / Regulated Wastes must be disposed of at licensed EPA facilities and removed from site by EPA licensed sub-contractors	During construction	Project Manager, Construction Supervisor, HSE Advisor	Waste register, waste dockets / receipts

Waste Management Plan			
All servicing of equipment carried out off site in an approved area or within an approved area onsite	During construction	Construction Supervisor	Pre starts
Establish concrete wash down areas and appropriate treatment systems to ensure no contamination of soil or waterways	Prior to concrete pours occurring onsite	Construction Supervisor, HSE Advisor	Environment inspection, Pre starts
<p>All reasonable steps shall be taken to:</p> <ul style="list-style-type: none"> <li>• Avoid waste generation</li> <li>• Reduce waste and to keep waste to a minimum</li> <li>• Recover, re-use and recycle waste</li> <li>• Use recycled products where appropriate and where technical specifications allow</li> </ul> <p>Dispose of waste(s) that cannot be reduced / re-used / recycled, to an EPA licensed waste facility</p>	Planning and during construction	Project Manager, Construction Supervisor, HSE Advisor	Waste Management Plan, Waste register, waste dockets / receipts



## 17.7 Contamination and Hazardous Chemicals

### 17.7.1 Storage and Handling of Dangerous Goods

Minor amounts of dangerous goods and hazardous materials will be required for the construction phase. These items will be stored and handled in accordance with:

- The requirements of all relevant Australian Standards; and
- The NSW EPA's Storing and Handling of Liquids: Environmental Protection – Participants Handbook if the chemicals are liquids, or its latest version

For each chemical substance brought to site, a Safety Data Sheet (SDS) that conforms to the Work Safe Australia Code of Practice will be made available for all workers required to use or work near a chemical substance. All required PPE to safely use hazardous chemicals will be stored onsite.

A hazardous materials register will be maintained and updated by the Construction supervisor at the Site Office. The Construction supervisor shall ensure subcontractors provide an updated inventory of chemicals on site, and a copy of the relevant SDS information is provided to the Construction supervisor prior to subcontractor works beginning.

All flammable and/or hazardous substances will be stored in accordance with the Explosives and Dangerous Goods Legislation and relevant Australian Standards.

Where radioactive source instrumentation is to be used as part of construction testing, these will be stored, handled, and installed in accordance with the Radiation Safety Legislation and the relevant codes of practice for radioactive substances.

The NDT Contractor will be required to demonstrate the adequacy of safe work practice to the Construction supervisor / Construction supervisor prior to their engagement. All Xray testing to be scheduled and notified Jemena Representative.

### 17.7.2 Spill Management

A spill is a release of any fuel, oil, grease or other chemical substance (liquid or powder) to the environment. Avoidance of spills will be prioritised during construction of the Project by promoting correct storage of hazardous chemicals and bunding substances when being used out on site. In the event of a spill WAPL will respond by:

1. **Stopping the source of the spill:** If safe to do so, the source of the spill should be stopped immediately
2. **Contain and control the flow:** Containing the spill is important to reduce the spread and minimise the risk of harm. To stop the spill absorbent materials from spill kits or the like and liquid barriers should be placed around the spill. Work from outside to soak up the spill. It is vital that spilt liquid is not allowed to reach stormwater drains, sewers or natural waterways or soil
3. **Report the spill:** Depending on the size of the spill and the location, the spill will be reported to Jemena and the EPA (EPA only for large spills which leave the work site and require large scale rectification or cause environmental harm)
4. **Clean up and dispose:** Use the SDS to best identify the process to clean and dispose of the spill. Ensure the disposal is conducted in accordance with the EPA waste transport and disposal regulations
5. **Record the spill:** Record the spill in the corrective action register and ensure that spill kits are restocked ASAP

### 17.7.3 Acid Sulfate Soils

There is a low likelihood of encountering ASS on the Project site with the highest chances being within and adjacent to the watercourse / drainage line. A visual inspection will be undertaken when excavation occurs adjacent to the watercourse / drainage line to inspect the spoil for signs of PASS/ASS.

All works with ASS must be undertaken in accordance with the Acid Sulfate Soil Manual (Acid Sulfate Soil Management Advisory Committee, 1998).

In general, if ASS are encountered:

Works will cease, and the potential ASS will either be required in situ to prevent oxidation or kept wet if possible if stockpiled.

- A suitably qualified person will investigate the spoil for presence of ASS
- If ASS is present a specific management plan will be developed for the area
- ASS will be handled, managed, transported and disposed in accordance with the site specific management plan developed by a suitably qualified person
- ASS will either be treated onsite if small quantities are present or taken offsite for treatment and disposal at a facility licensed to treat and or dispose of ASS

Contamination and Hazardous Chemicals Management Plan			
<b>Management Objectives</b>	<ul style="list-style-type: none"> <li>Construction of Project Marlin must be constructed to minimise the potential for contaminant mobilization (Condition B10).</li> <li>Comply with Contamination Reporting responsibilities under section 60 of the <i>Contaminated Land Management Act 1997</i>.</li> <li>Implement Unexpected Contaminated Land Finds Procedure if any contamination is found / caused by construction of the Project (Condition B11).</li> </ul>		
<b>Key Performance Indicators</b>	<ul style="list-style-type: none"> <li>No contamination to be caused by construction of the Project.</li> </ul>		
Measure/Requirement	Timing	Responsibility	Evidence
Provide training through inductions and toolboxes meetings for workers which will outline contamination management strategies	Prior to and during construction	Project Manager, Construction Supervisor, HSE Advisor	Induction Records, Toolbox Meetings sign on sheets
Implement Unexpected Contaminated Lands procedure	Immediately if contamination is identified on the Project	Project Manager, Construction Supervisor, HSE Advisor	Training records (Induction, Toolbox meetings), Pre starts
Train and implement 'spill management' onsite during any hazardous chemical spills	Project induction and during construction	Project Manager, Construction Supervisor, HSE Advisor	Training records (Induction, Toolbox meetings), Pre starts
Report land contamination caused or found during Project construction activities to the EPA	Immediately if contamination is identified on the Project.	Project Manager, Construction Supervisor, HSE Advisor	Training records (Induction, Toolbox meetings), Pre starts
All fuels and chemicals must be stored and handled to comply with the following: Australian Standard AS1940:2004: The storage and handling of flammable and combustible materials	During construction	Construction Supervisor, HSE Advisor	Safety / Environment Inspection, Toolbox meetings, Pre-start
Spill kits will be provided and maintained in immediate proximity of hard stand work areas and stores. Vehicle spill kits will be carried on fuel trucks and vehicles (and / or plant) working near major plant and equipment. Relevant personnel will be trained in the use of spill kits	During construction	Construction Supervisor, HSE Advisor	Safety / Environment Inspection, Toolbox meetings, Pre start
No chemical, fuels, wastes to be stored near drains, watercourses, drainage lines and unsealed surfaces	During construction	Construction Supervisor, HSE Advisor	Environment Inspection, Toolbox meetings, Pre start
All chemicals defined as Hazardous Substances/Dangerous Goods must be stored on bunding trays with minimum capacity of 110% of the total volume of the stored chemicals	During construction	Construction Supervisor, HSE Advisor	Environment Inspection, Toolbox meetings, Pre start

Contamination and Hazardous Chemicals Management Plan			
<p>If contamination is discovered (e.g. asbestos, discoloured soil, strong chemical or petrol odours, leachate), works are to cease at that site. The Project Manager and must be notified immediately</p>	<p>During construction</p>	<p>Project manager, Construction Supervisor, HSE Advisor</p>	<p>Environment Inspection, Toolbox meetings, Pre-start</p>

17.8 Soil and Water

Soil erosion associated with the construction of the development will be managed through the implementation of an Erosion and Sediment Control Plan (ESCP) (refer to Appendix A) which will be prepared in accordance with the relevant requirements in the Managing Urban Stormwater: Soils and Construction (Landcom, 2004) manual. The ESCP will describe the control mechanisms to be implemented during the construction phase of the project to minimise potential soil loss and will describe best practise management measures to be implemented.

All soil and water management and mitigation measures are to be captured in the ESCP and CEMP will be monitored during site inspections which will occur before and after rain events which cause runoff from site.

Soil and Water Management Plan			
<b>Management Objectives</b>	<ul style="list-style-type: none"> <li>Minimise any soil erosion associated with the construction of Project Marlin in accordance with the relevant requirements in the Managing Urban Stormwater: Soil and Construction (Landcom, 2004) manual, or its latest version (Condition B9(b)).</li> <li>Ensure that pipeline construction and installation is undertaken to minimise impacts on watercourses by applying management measures generally in accordance with the guidance series for <i>Controlled Activities on Waterfront Land</i> (Condition B9(c)).</li> <li>Ensure that any construction activities in identified areas of acid sulfate soil risk are carried out in accordance with Acid Sulfate Soil Manual (Acid Sulfate Soil Management Advisory Committee, 1998) or its latest version (Condition B9(d)).</li> </ul>		
<b>Key Performance Indicators</b>	<ul style="list-style-type: none"> <li>The construction of Project Marlin does not cause any water pollution, as defined under section 120 of the POEO Act, including the management of surface water runoff, groundwater inflow into construction areas, and use of water for testing and commissioning of the pipeline (Condition B9(a)).</li> </ul>		
Measure/Requirement	Timing	Responsibility	Evidence
Provide training through inductions and toolboxes meetings for workers which will outline soil and water management strategies	Prior to and during construction	Project Manager, Construction Supervisor, HSE Advisor	Induction Records, Toolbox Meetings sign on sheets
The controls described in the erosion and sediment control plan must be implemented at all times	Prior to and during construction	Construction Supervisor, HSE Advisor	Environment Inspection
Weather forecasts will be checked prior to commencing works and assess the need to reschedule or adjust works if there is the likelihood of significant rainfall or water flows	Daily during construction	Construction Supervisor, HSE Advisor	Environment Inspection
Construction access sediment controls will be installed around hard stand areas/roads to prevent sediment transport onto public roads	During site establishment	Construction Supervisor, HSE Advisor	Environment Inspection
Surface water will be diverted around excavations and stockpiles and sites of chemical and hazardous material storage. Drainage lines are not to be blocked / impeded by stockpiles or excavation	During construction	Construction Supervisor, HSE Advisor	Environment Inspection

Soil and Water Management Plan			
works			
All surface flow diversion, stockpile containment structures and other drainage protection measure will be regularly inspected, at least weekly and following rain events where runoff occurs (where accessible and safe to do so) and maintained in an effective condition	During construction	Construction Supervisor, HSE Advisor	Environment Inspection
Drainage lines are not to be blocked / impeded by stockpiles or excavation works	During construction	Construction Supervisor, HSE Advisor	Environment Inspection
Where the work site is in close proximity to National Parks/Reserves, sediment controls will be implemented to prevent run-off entering wetland and bushland areas	During site establishment	Construction Supervisor, HSE Advisor	Environment Inspection
Topsoil and spoil must be removed and stockpiled separately to aid in rehabilitation and stockpiled on uphill side of site where practicable. Any loose soil or sediment must be cleaned from surfaces immediately	During construction	Construction Supervisor, HSE Advisor	Environment Inspection
Where E&S controls fail, they are to be repaired and or replaced as soon as practicable and the E&SC plan updated if necessary	During construction	Construction Supervisor, HSE Advisor	Environment Inspection
Water containing elevated suspended solids must not be discharged from the works locations	During construction	Construction Supervisor, HSE Advisor	Environment Inspection, Toolbox meetings, Pre-start
Works must be undertaken with minimum disturbance of ground surface	During construction	Construction Supervisor, HSE Advisor	Environment Inspection, Toolbox meetings, Pre-start
Keep topsoil stockpiles < 2m high to minimise wind erosion. Compact as required to stabilise	During construction	Construction Supervisor, HSE Advisor	Environment Inspection
All spoil stockpiles will be located away from drainage lines, natural waterways, road surfaces and trees. Stockpiles will be protected against erosion and sedimentation	During construction	Construction Supervisor, HSE Advisor	Environment Inspection
Approved protocols must be developed for the disposal of any contaminated water	During construction	Project manager, Construction Supervisor, HSE Advisor	Environment Inspection, Toolbox meetings, Pre-start

Soil and Water Management Plan			
Where construction activities surround identified waterways or have the potential to impact on the water quality, water quality samples should be taken before, during and after construction. The analysis of this sampling will determine the impact on water quality of the nearby watercourses	Prior, during and post construction	HSE Advisor	Water quality monitoring records
Spill kits will be provided and maintained in immediate proximity of hard stand work areas and stores. Vehicle spill kits will be carried on fuel trucks and vehicles (and / or plant) working near major plant and equipment. Relevant personnel will be trained in the use of spill kits	During construction	HSE Advisor	Environment Inspection
Visual inspection of surrounding waterways to be undertaken throughout the duration of the works to detect any changes to the water quality (e.g. presence of oil, grease, turbidity, floating scum and litter) in the waterway	Prior, during and post construction	HSE Advisor	Environment Inspection, Toolbox meetings, Pre-start

**17.9 Traffic Management**

Prior to construction, a Traffic Management Plan will be prepared which describes:

- Include details of the transport route to be used for all construction and operational traffic
- Include details of the likely peak hour vehicle movements including detail of vehicle types and the distribution of the movements on the road network
- Include a swept path analysis of entry and exit at all construction access points
- Include sight distance plans for all construction access points
- Include details of any oversize and over-mass vehicles anticipated for the construction, operation and decommissioning of the Port Kembla Lateral Looping Pipeline; and
- Include a Driver Code of Conduct

**17.10 Visual Impact**

Through regular inspection as outlined in the CEMP, Jemena and contractors will:

- Minimise the off-site visual impacts of the development, including the potential for any glare or reflection
- Ensure the visual appearance of infrastructure (including paint colours) blends in as far as possible with the surrounding landscape; and
- Not mount any commercial advertising signs or logos on site, except where this is required for identification or safety purposes

**18 CONDITIONS OF APPROVAL**

The following table outlines the applicable conditions (SS9973 Mod 2) relevant to the Stage 2 works.

Condition	Requirement	Reference to Requirement in CEMP
<b>Part A – Administrative Conditions</b>		
A1	The Proponent must implement all reasonable and feasible measures to prevent, and if prevention is not reasonable or feasible, minimise any material harm to the environment that may result from the construction, operation, rehabilitation or decommissioning of the Port Kembla Lateral Looping Pipeline.	This CEMP
<b>TERMS OF CONSENT</b>		
A2	The Proponent must construct and operate the Port Kembla Lateral Looping Pipeline: (a) in accordance with the conditions contained in this Schedule; (b) in accordance with all written directions of the Secretary; and (c) generally in accordance with the Modification 1 and Modification 2.	This CEMP
A3	If there is any inconsistency between the above documents, the most recent document must prevail to the extent of the inconsistency. However, the conditions of this Schedule prevail to the extent of any inconsistency	Noted
A4	The Proponent must comply with any requirement/s of the Secretary arising from the Department’s assessment of: (a) any strategies, plans or correspondence that are submitted in accordance with this consent; (b) any reports, reviews or audits commissioned by the Department regarding compliance with this consent; and (c) the implementation of any actions or measures contained in these documents.	This CEMP  Section 13, 14



Condition	Requirement	Reference to Requirement in CEMP
<b>REHABILITATION</b>		
A6	<p>The Proponent must:</p> <p>rehabilitate the site corridor progressively, as soon as reasonably practicable following disturbance;</p> <p>(a) rehabilitate the site corridor progressively, as soon as reasonably practicable following disturbance;</p> <p>(b) minimise the disturbance area at any time; and</p> <p>(c) employ interim rehabilitation strategies to minimise dust generation, soil erosion and weed incursion on parts of the site corridor that cannot yet be permanently rehabilitated.</p>	<p>Appendix A</p> <p>Section 17.8</p>
A7	<p>Requirement:</p> <p>Unless the Proponent and the applicable authority agree otherwise, the Proponent must:</p> <p>(a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the construction or operation of the Port Kembla Lateral Looping Pipeline; and</p> <p>(b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the construction of the Port Kembla Lateral Looping Pipeline.</p>	<p>Section 13.8</p>
A8	<p>Requirement:</p> <p>At least two weeks prior to the commencement of the construction and commissioning of the Port Kembla Lateral Looping Pipeline, the Proponent must notify the Department of the relevant date via the Major Projects Portal</p>	<p>Section 12.7</p>
Part B Environmental Conditions		
<b>CONSTRUCTION HOURS</b>		
B6	<p>Unless otherwise agreed by the Secretary, the Proponent may only undertake construction activities between:</p> <p>(a) 7 am to 6 pm Monday to Friday;</p> <p>(b) 8 am to 1 pm Saturdays; and</p> <p>(c) at no time on Sundays and NSW public holidays</p> <p>The following activities may be undertaken outside these hours without the approval of the Secretary:</p> <p>(a) the delivery of materials as requested by the NSW Police Force or other authorities for safety reasons;</p> <p>(b) emergency work to avoid the loss of life, property and/or material harm to the environment;</p> <p>(c) where a negotiated agreement has been reached with affected receivers; or</p> <p>(d) works as approved through the out-of-hours work protocol outlined in the CEMP required by condition C1.</p>	<p>Section 17.2</p>
<b>NOISE</b>		
B7	<p>The Proponent must minimise the noise generated by any construction, upgrading or decommissioning activities in</p>	<p>Section 17.2</p>

Condition	Requirement	Reference to Requirement in CEMP
	accordance with the best practice requirements outlined in the Interim Construction Noise Guideline (DECC, 2009), or its latest version.	
<b>DUST</b>		
B8	The Applicant must minimise the: (a) The Proponent must minimise the dust generated during construction of the Port Kembla Lateral Looping Pipeline, including wind-blown and traffic generated dust.	Appendix A  Section 17.3
<b>SOIL AND WATER</b>		
B9	The Proponent must: (a) ensure that construction, commissioning and operation of the Port Kembla Lateral Looping Pipeline does not cause any water pollution, as defined under section 120 of the POEO Act, including the management of surface water runoff, groundwater inflow into construction areas, and use of water for testing and commissioning of the pipeline; (b) minimise any soil erosion associated with the construction of the Port Kembla Lateral Looping Pipeline in accordance with the relevant requirements in the Managing Urban Stormwater: Soils and Construction (Landcom, 2004) manual, or its latest version; and (c) ensure that pipeline construction and installation is undertaken to minimise impacts on watercourses by applying management measures generally in accordance with the guidance series for Controlled Activities on Waterfront Land (DPIE Water 2012 or latest versions) (d) ensure that any construction activities in identified areas of acid sulfate soil risk are carried out in accordance with Acid Sulfate Soil Manual (Acid Sulfate Soil Management Advisory Committee, 1998) or its latest version.  Note: Under the Water Management Act 2000, the Applicant is required to obtain all necessary water licences if required for the Port Kembla Lateral Looping Pipeline.	Appendix A  Section 17.8, 17.7.3
<b>CONTAMINATION</b>		
B10	The Proponent must ensure the Port Kembla Lateral Looping Pipeline is constructed to minimise the potential for contaminant mobilisation.	Section 17.8, 17.7
B11	An Unexpected Contaminated Land Finds Procedure must be prepared before the commencement of construction and must be followed should unexpected contaminated land (or suspected contaminated land) be excavated or otherwise discovered during construction. This Procedure must be included in the CEMP required by Condition C1.	Section 17.6.2
<b>WASTE</b>		
B12	The Proponent must: (a) minimise the waste generated by the construction of the Port Kembla Lateral Looping Pipeline; (b) classify all waste generated in accordance with the EPA's	Section 17.6

Condition	Requirement	Reference to Requirement in CEMP
	Waste Classification Guidelines 2014 (or its latest version); (c) store and handle all waste in accordance with its classification; (d) not receive or dispose of any waste within the site corridor; and (e) remove all waste from the site corridor as soon as practicable, and ensure it is sent to an appropriately licensed waste facility for disposal.	
<b>HERITAGE</b>		
B13	The Proponent must ensure the construction of the Port Kembla Lateral Looping Pipeline does not cause any direct or indirect impacts on heritage items located outside the approved Port Kembla Lateral Looping Pipeline footprint.	Section 17.5
B14	An Unexpected Heritage Finds and Human Remains Procedure must be prepared to manage unexpected heritage finds and human remains in accordance with guidelines and standards published by the Council of NSW or DPE EES Group. This Procedure must be included in the CEMP required by Condition C1.	Section 17.5.1
<b>BIODIVERSITY</b>		
B15	Construction impacts must be restricted to areas for which biodiversity impacts were assessed in the biodiversity development assessment report (BDAR) and must not encroach into other areas of retained native vegetation and habitat.	Section 17.4
<b>Part C Environmental Management and Reporting</b>		
<b>CONSTRUCTION MANAGEMENT PLAN</b>		
C1	Prior to commencing construction, the Applicant must prepare a Construction Environment Management Plan (CEMP) for the Port Kembla Lateral Looping Pipeline to the satisfaction of the Secretary. This plan must:	Section 15.1
	(a) be prepared in consultation with Council, TfNSW and Sydney Trains;	
	(b) identify the statutory approvals that apply to the construction and commissioning of the Port Kembla Lateral Looping Pipeline;	Section 18
	(c) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the Port Kembla Lateral Looping Pipeline;	Section 6
	(d) describe the procedures that would be implemented to: <ul style="list-style-type: none"> <li>• keep the local community and relevant agencies informed about the construction and commissioning of the Port Kembla Lateral Looping Pipeline;</li> <li>• receive, handle, respond to, and record complaints;</li> <li>• resolve any disputes that may arise;</li> <li>• respond to any non-compliance; and</li> <li>• respond to emergencies;</li> </ul>	Section 12, 13, 16
(e) include: the following sub-plans:		

Condition	Requirement	Reference to Requirement in CEMP
	<ul style="list-style-type: none"> <li>noise, including an out-of-hours work protocol;</li> </ul>	Section 17.2
	<ul style="list-style-type: none"> <li>air quality;</li> </ul>	Section 17.3
	<ul style="list-style-type: none"> <li>biodiversity;</li> </ul>	Section 17.4
	<ul style="list-style-type: none"> <li>soil and water management;</li> </ul>	Appendix A
		Section 17.8
	<ul style="list-style-type: none"> <li>water management;</li> </ul>	Appendix A
	<ul style="list-style-type: none"> <li>traffic management</li> </ul>	Standalone Plan
	<ul style="list-style-type: none"> <li>waste.</li> </ul>	Section 17.6
C2	The CEMP sub-plans must state how: (a) the mitigation measures identified in the Modification 1 and Modification 2 will be implemented; and (b) the relevant terms of this Schedule will be complied with.	Section 17
C3	The Biodiversity CEMP sub-plan must: (c) identify areas of land that are to be retained as outlined in the BDAR; and (d) identify all measures in the BDAR to mitigate and manage impacts on biodiversity, including performance measures for each measure.	Section 17.4
C4	The Traffic Management CEMP sub-plan must: (a) describe the measures that would be implemented to comply with the transport management requirements in condition B5; (b) include details of the transport route to be used for all construction and operational traffic; (c) include details of the likely peak hour vehicle movements including detail of vehicle types and the distribution of the movements on the road network; (d) include a swept path analysis of entry and exit at all construction access points; (e) include sight distance plans for all construction access points; (f) include details of any oversize and over-mass vehicles anticipated for the construction, operation and decommissioning of the Port Kembla Lateral Looping Pipeline; and (g) include a Driver Code of Conduct.	Section 17.9  Note, Traffic Management Plan is a standalone plan.
C4A	The Soil and Water Management CEMP sub plan must: (a) include an acid sulfate soils management plan prepared in accordance with the Acid Sulfate Soils Manual 1998 and EPA Waste Classification Guidelines 2014; (b) identify if the construction activities will intercept	Section 17.8, 17.7.3  Appendix A

Condition	Requirement	Reference to Requirement in CEMP
	groundwater and, if required, include procedures for the management of groundwater including potentially contaminated groundwater and water licensing requirements for take of water; and  (c) include a sediment and erosion control plan for management of sediment from the construction footprint.	
C5	The Proponent must implement the approved CEMP.	This CEMP
<b>NOTIFICATION AND REPORTING</b>		
C6	The Proponent must immediately notify the Department and any other relevant agencies immediately after it becomes aware of an incident. The notification must identify the development (including the development application number and name) and set out the location and nature of the incident.	Section 13
C7	Within seven days of becoming aware of a non-compliance, the Proponent must notify the Department of the non-compliance. The notification must set out the condition of this consent that the development is non-compliant with, why it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance. Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.	Section 13

**APPENDIX A**

Erosion and Sediment Control Plan



# Jemena Project Marlin KGMS Facilities Erosion and Sediment Control Plan

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For WASCO Australia Pty Ltd

## Document Information

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## CONTACT US

**E:** [info@cncprojects.com.au](mailto:info@cncprojects.com.au)

**P:** 1300 123 262

Melbourne | Brisbane | Sydney | Darwin | Sunshine Coast

## Disclaimer

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### **DISCLAIMER**

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While due care was taken during the ESCP preparation, CNC Project Management Pty Ltd accepts no responsibility for any omissions that may have occurred during the assessment process.

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## Document Control

### Document Control Record

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### Revision Modification Log

Vers	Section	Description of Modification	Reason

### Custodianship

The ongoing management of this document will reside with the nominated Custodian from CNC Project Management and will be supported by the CNC Project team.

Following initial release of the approved version, all subsequent amendments must be submitted to the nominated Custodian.

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## Abbreviations

Abbreviation	Description
AEC	Areas of Environmental Concern
BGL	Below Ground Level
CEMP	Construction Environmental Management Plan
SSI	State Significant Infrastructure
EP&A Act	Environmental Planning and Assessment Act 1979
HSE	Health Safety Environment
ESCP	Erosion and Sediment Control Plan
IECA	International Erosion Control Association
OEH	Office of Environment and Heritage's
PESCP	Progressive Erosion and Sediment Control Plan
PKGT	Port Kembla Gas Terminal
WAPL	WASCO Australia Pty Ltd

Abbreviation	Description
SEPP	State Environmental Planning Policy
SRD	State and Regional Development
TSS	Total Suspended Solids

# 1. Introduction

## 1.1 Context

This Erosion and Sediment Control Plan (ESCP) has been developed for Project Marlin KGMS Facilities (the Project) scope of works which will be constructed in accordance with Jemena's Eastern Gas Pipeline's Environment Management Plan (GAS-599-PA-HSE-004) and WASCO Australia Pty Ltd's (WAPL) Construction Environmental Management Plan (CEMP) (2211-ENV-PLN-001).

This Plan has been prepared to address environmental conditions from the Minister's Infrastructure Consolidated Approval SSI 9973 MOD 2. Refer to Table 1 for list of environmental conditions addressed by this Plan.

## 1.2 Project Background

WAPL have been engaged by Jemena to construct the Project at Wyllie Rd, Kembla Grange, NSW 2526 (-34.46719 S, 150. 81308 E). Refer to Figure 1 for proposed site layout.

Project works being controlled by this ESCP include:

- Site establishment, construction access and establishment of erosion and sediment controls;
- Installation of permeant site drainage and rip rap rock protection;
- Clear and grade (inc. cut to fill earthworks);
- Construction of permeant access, facility hardstand and laydown areas; and
- Rehabilitation.

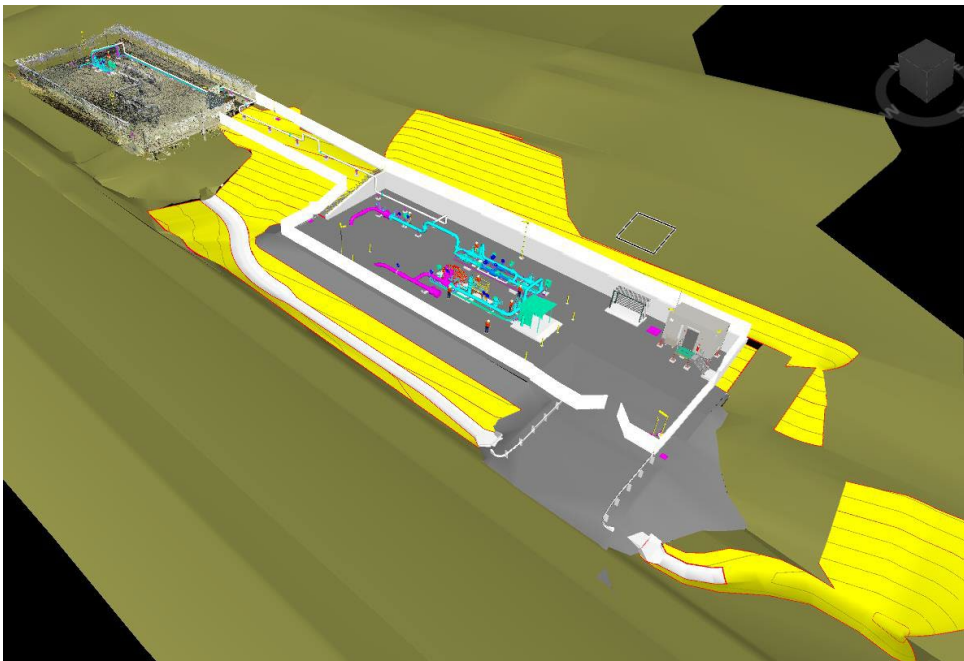


Figure 1: Project Layout Scope

This ESCP has been developed to cover all construction activities with high erosion and sediment environmental risk listed within the project scope of works:

- Port Kembla Pipeline Facilities and EGP Expansion – Facilities Construction Scope of Work (GAS-599-SW-CN-001)

This ESCP will be supported by Progressive Erosion and Sediment Control Plans (PESCP). PESCP will be the onsite tool used by the Construction Supervisor(s) to understand the Project's erosion and sediment controls placement and staging.

### 1.3 Project Marlin KGMS Facilities Construction Site

The Project Marlin KGMS Facilities construction site is situated on the western side of Lot 2/DP792692 to the south of the existing Jemena Facility shown in Figure 2 below at KP 11.8. A hot tap will be installed by others to the north of the existing Jemena facility at KP 11.8, however WAPL may be required to provide construction access, clear and grade and establish the erosion and sediment controls at the hot tap construction site.

Lot 2/DP792692 has historic land use as a landfill which has been capped with fill material. A *Geotechnical and Contamination Site Investigation Report* (Golder 2021) has been prepared which covers Project Marlin KGMS Facilities and has been used to inform this ESCP.

The total Project area is estimated to cover 7,150 m<sup>2</sup> with approximately 5,000 m<sup>2</sup> estimated to require clear and grade to facilitate construction.



Figure 2: Project Layout

## 1.4 Objectives

The key objectives of this ESCP are to;

- Minimise the impacts of erosion and sedimentation during construction to surrounding environments.
- Ensure that construction of the Project does not cause any water pollution, as defined under s120 of the *Protection of the Environment Operations Act*.
- Ensure appropriate erosion and sediment control measures are implemented across the Project to meet regulatory, statutory and community expectations and requirements.
- Ensure that best practice erosion and sediment controls are appropriately adopted and designed, following the *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004) also known as the “Blue Book”.
- Ensure that any construction activities encountering acid sulfate soils is carried out in accordance with the *Acid Sulfate Soil Manual* (Acid Sulfate Soil Management Advisory Committee 1998).
- Manage construction dust generation including wind blown and traffic generated dust.
- Provide a measurable set of commitments for site inspections and audits with regards to management of soils and water.
- Promote a focus on erosion control and the prevention of sediment generation.
- Promote prompt stabilisation and progressive rehabilitation of the Project site.

## 1.5 Targets

The following targets have been established for erosion and sediment control management during construction;

- Ensure full compliance with the relevant legislative and contractual requirements;
- Meet water quality discharge parameters for all planned dewatering events and discharges;
- Ensure appropriate training and support is provided to Project personnel as required;
- Minimise ground cover cleared during construction;
- Divert clean water around the construction site;
- Progressively rehabilitate the construction site.



## 1.6 Legal and other requirements

Erosion and sediment control legislation and requirements are listed below:

- *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004)
- *Managing Urban Stormwater: Soils and Construction Volume 2A* (DECC, 2008)
- *SSI 9973 MOD 2 – Consolidated Approval*
- *SSI 9973 MOD 2 – Modification Assessment Report*
- *SSI 9973 MOD 1- Main Report (754-MELEN269488)*

Specific Conditions of Approval related to erosion and sediment control management are detailed in Table 1.

Table 1: SSI 9973 MOD 2 – Consolidated Approval Environmental Conditions

Ref Number	Condition	Reference
A6 – Rehabilitation	The Proponent must: <ul style="list-style-type: none"> <li>(a) rehabilitate the site corridor progressively, as soon as reasonably practicable following disturbance;</li> <li>(b) minimise the disturbance area at any time; and</li> <li>(c) employ interim rehabilitation strategies to minimise dust generation, soil erosion and weed incursion on parts of the site corridor that cannot yet be permanently rehabilitated.</li> </ul>	<ul style="list-style-type: none"> <li>• Section 3</li> <li>• Section 3.8</li> <li>• WAPL CEMP</li> </ul>
B8 – Dust	The Proponent must minimise the dust generated during construction of the Port Kembla Lateral Looping Pipeline, including wind-blown and traffic generated dust.	<ul style="list-style-type: none"> <li>• Section 3</li> <li>• Section 4</li> <li>• Section 5</li> <li>• WAPL CEMP</li> </ul>
B9 – Soil and Water	The Proponent must: <ul style="list-style-type: none"> <li>(a) ensure that construction, commissioning and operation of the Port Kembla Lateral Looping Pipeline does not cause any water pollution, as defined under section 120 of the POEO Act, including the management of surface water runoff, groundwater inflow into construction areas, and use of</li> </ul>	<ul style="list-style-type: none"> <li>• Section 2.3</li> <li>• Section 3</li> <li>• Section 3.7</li> <li>• Section 4</li> <li>• Section 5</li> <li>• WAPL CEMP</li> </ul>

Ref Number	Condition	Reference
	<p>water for testing and commissioning of the pipeline;</p> <p>(b) minimise any soil erosion associated with the construction of the Port Kembla Lateral Looping Pipeline in accordance with the relevant requirements in the Managing Urban Stormwater: Soils and Construction (Landcom, 2004) manual, or its latest version; and</p> <p>(c) ensure that any construction activities in identified areas of acid sulfate soil risk are carried out in accordance with Acid Sulfate Soil Manual (Acid Sulfate Soil Management Advisory Committee, 1998) or its latest version.</p>	

## 2. Existing Environment

### 2.1 Topography

The Project Marlin KGMS Facilities is located on an east to west sloping site located between 16 – 26 AHD. The sloping site is a result of the landfill capping operation and is benched as shown by the topographic map (Golder 2021) in Figure 3 below. The entire site slopes towards an open drain running parallel to Wyllie Road. The Project involves cut to fill earthworks with a slope of approx. 25 degrees over 30m. The excavated slope is being replaced with a retaining wall.

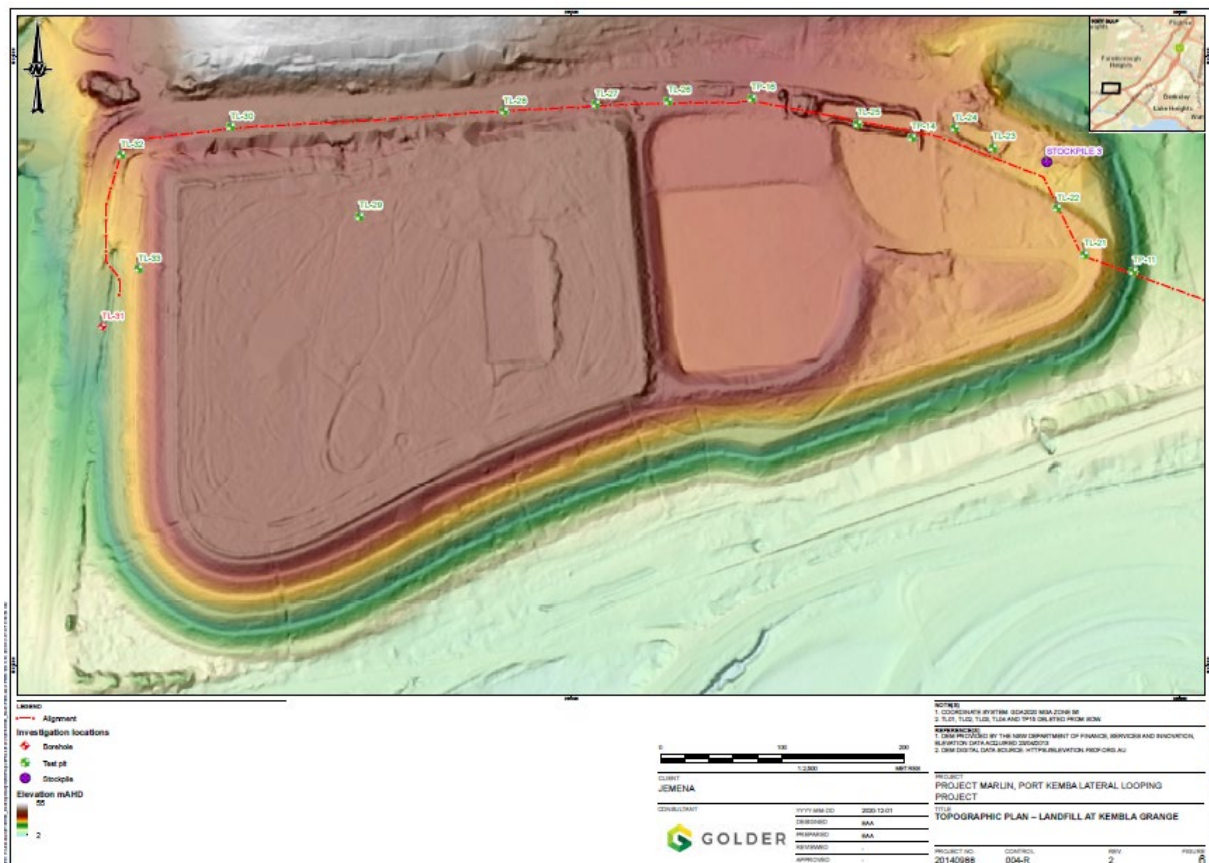


Figure 3: Topographic Map of Project Marlin KGMS Facilities (extracted from Golder 2021).

### 2.2 Soils

The following soil information has been extracted from the *Geotechnical and Contamination Site Investigation Report* (Golder, 2021) prepared for the Port Kembla Lateral Looping Project, including Project Marlin KGMS Facilities.

Soil and Contamination Report borehole TL-31 and test pit TL-33 have been used to provide indicative soil qualities likely to be representative across the Project's construction site. Soil test locations are shown below.

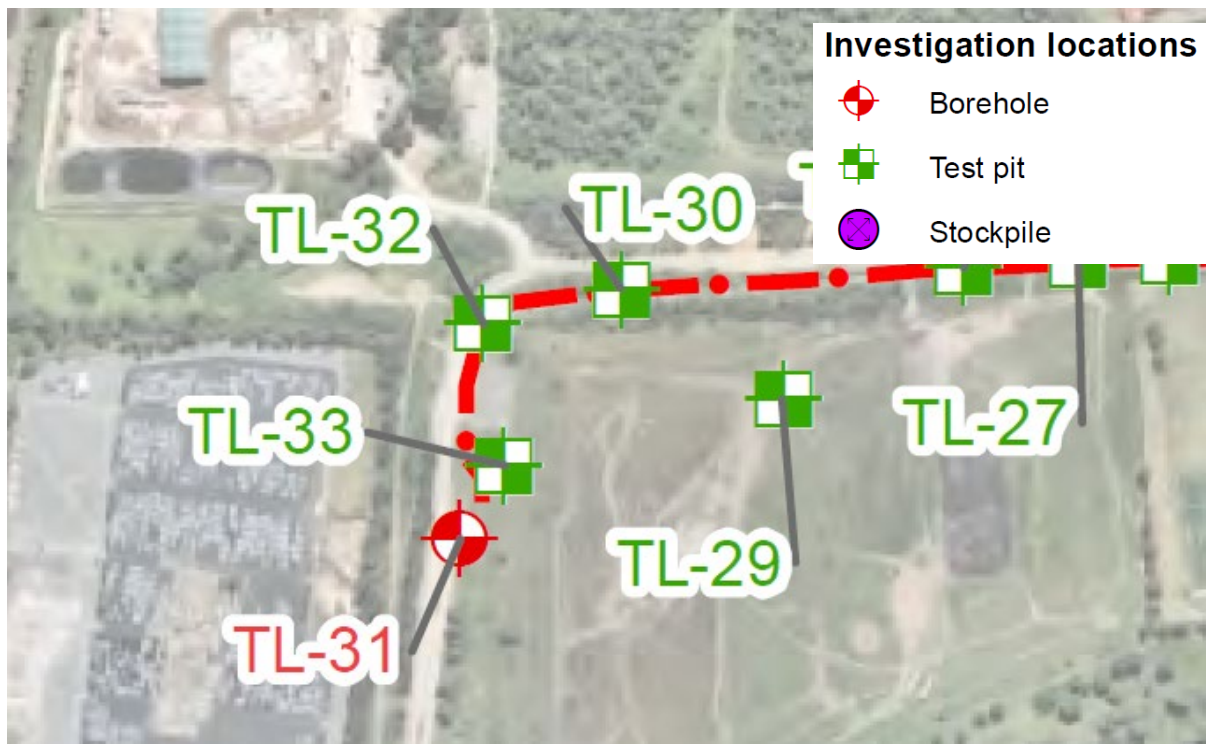


Figure 4: Soil Test Locations (extracted from Golder 2021).

TL-31: results identify the structure of the soil from 0m to 4m BGL as consisting of fill (slag) consisting of silty to gravely sand. Residual soil is present from 4m to 6.10m BGL consisting of silty sand. Weathered rock was encountered at 6.10m to 13.20 BGL where the bore was terminated.

TL-33: Surface level to 100mm consisted of silty sand gravel. Fill (slag) consisting of sandy gravel (0.10m to 2.50 BGL). The borehole was ceased at 2.50m BGL.

Erosion testing (Emerson Crumb) was assessed at TL-31 as class 5. Class 5 soils are considered non-dispersive in their natural state, however, earthworks can cause dispersive behaviour in class 5 soils.

### 2.3 Acid Sulphate Soils

Acid Sulfate Soils mapping in Figure 5 indicate that the likelihood of acid sulfate soils being present at the Project Marlin KGMS Facilities is low.

WAPL would follow the 'unexpected contaminated land finds' procedure detailed in Section 20.1 of WAPL's Project CEMP.

If Acid Sulfate Soils are discovered during construction of the Project, management of these soils would be conducted in accordance with the *Acid Sulfate Soil Manual* (Acid Sulfate Soil Management Advisory Committee 1998).



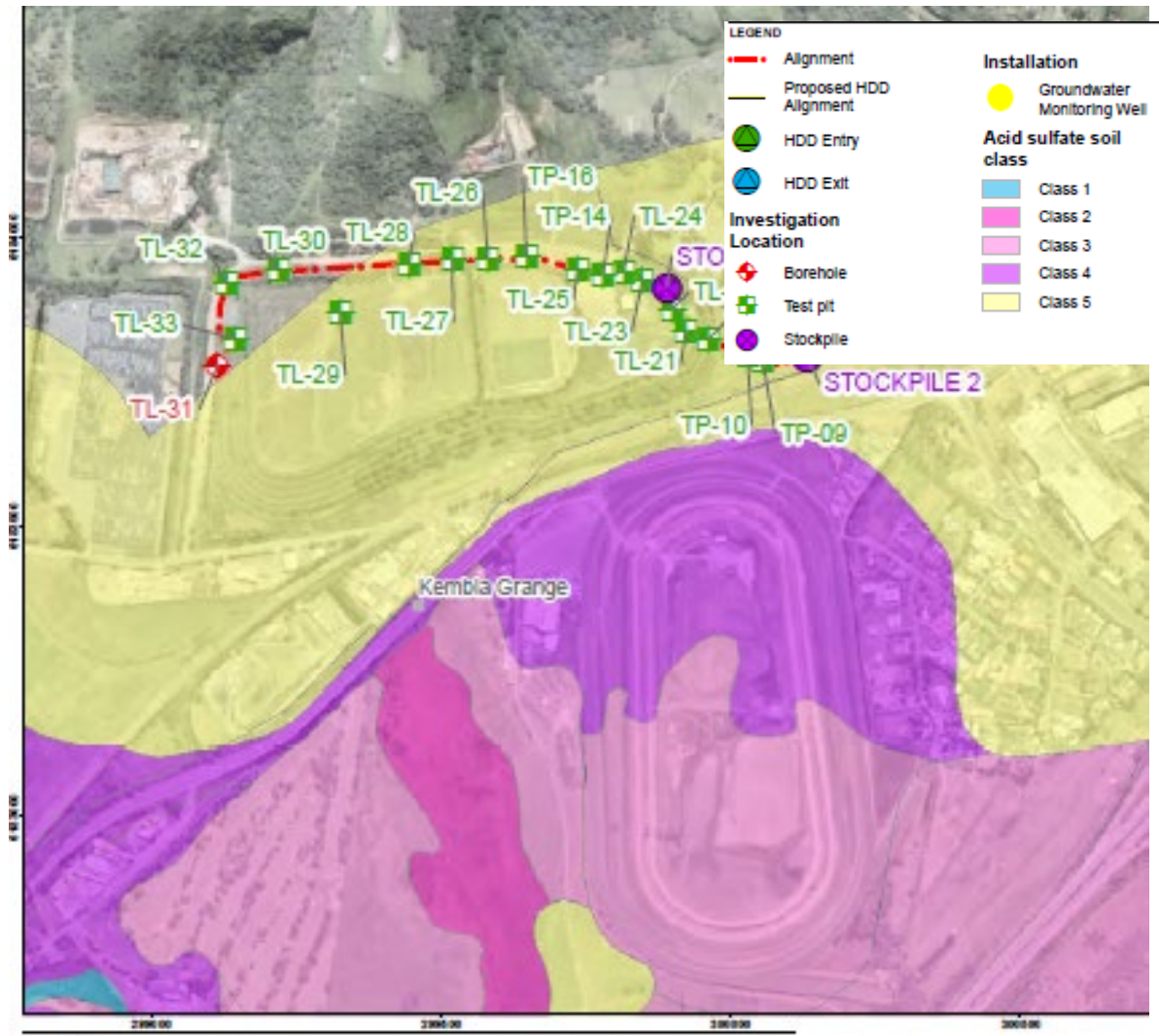


Figure 5: Acid Sulfate Soils Mapping (extracted from Soil and Contamination Report (Golder 2021))

## 2.4 Contaminated Soils

Golder (2021) undertook soil contamination assessments at the Project site in accordance with Schedule B1 of the NEPM (NEPC 2013) for commercial / industrial and a recreational / open space land use exposure scenarios and EPA waste classification guidelines.

Overall the Projects spoil was determined suitable for reuse and Golder (2021) proposed an indicative waste categorisation of *General Solid Waste* (non-putrescible) for TL-31 (note, no indicative waste classification was provided for TL-33).

Slightly elevated levels of chromium were identified in TL-31 compared to recreational health based investigation levels (Schedule B1 NEPC 2013), therefore if any spoil is removed from the Project site, waste classification testing should be undertaken to meet EPA waste disposal and classification guidelines.

No friable asbestos was identified by Golder (2021) during site contamination investigation.

## 2.5 Climate

Climate statistics were obtained from the Bureau of Meteorology (BOM) for Port Kembla Signal Station (068053) Table 2: Average rainfall (mm) data for Port Kembla Signal Station (068053) (BOM, 2021) is shown in Table 2 and Figure 6. The figures show an increased average rainfall during the spring months, however significant rainfall can occur at any time during the year including the month of June.

Table 2: Average rainfall (mm) data for Port Kembla Signal Station (068053) (BOM, 2021)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Mean Rainfall (mm)	116.1	157.5	183.7	92.9	89	140.3	62.6	87.7	55	108	94.3	90.4	1260.6

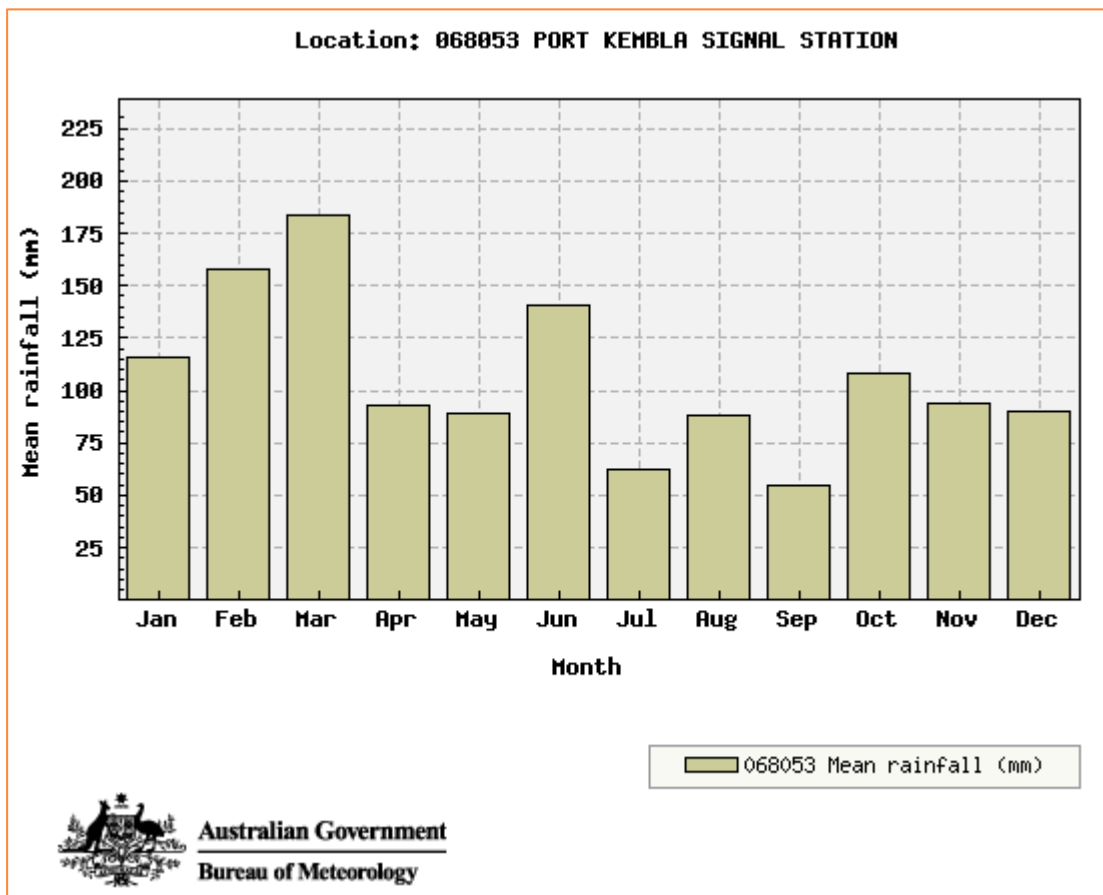


Figure 6: Average rainfall (mm) graph for Port Kembla Signal Station (068053) (BOM, 2021)

## 2.6 Water Sources

The Project's soil and water will be managed in accordance with this ESCP and in accordance with WAPL's Soil and Water Management Plan (section 18.7 WAPL CEMP).

### 2.6.1 Surface Water

No mapped watercourses are present within the Project area, however, there is a table drain running north to south through the Project site which requires realigning to allow room for the new facility hardstand area.

Construction water would be released through sediment controls to the heavily grassed area to the south of the construction site. The release location is heavily vegetated and does not have ecological significance.

Discharge criteria has been outlined in section 3.7.

### 2.6.2 Groundwater

Limited groundwater information is available at the Project location at the Kembla Grange landfill, however, groundwater should be expected at the fill / residual soil interface.

No groundwater should be discharged from site unless chemical analysis has been undertaken and the groundwater meets the discharge criteria and is not contaminated.

Due to the Project location being within an existing landfill, WAPL would seek assistance from an Environmental Scientist / Contamination Specialist prior to discharging any groundwater from site to meet NSW EPA waste classification requirements and ensure contamination is not discharged from site.



### 3. Progressive Erosion and Sediment Control Plans

A Progressive Erosion and Sediment Control Plan (PESCP) will be developed for the Facility construction footprint. The PESCP will be staged for the high risk erosion construction activities and will sit under this Plan. PESCP will include as a minimum;

- A drawing or marked up map showing the layout and details of erosion and sediment control measures including runoff, stockpiles, site access and storage areas;
- Supporting site specific commentary or construction notes containing explanatory text, calculations and diagrams as necessary;
- Indicative water flow direction;
- Suggested construction staging;
- Calculations and sizing of controls as required.

PESCP can be viewed in Appendix F and will be prepared for:

1. Project Marlin Catchment Plan
2. Project Marlin Drainage Plan
3. Site Establishment
4. Clear and Grade (including Cut to Fill)
5. Rehabilitation

Site sediment and erosion controls are identified on the PESCPs. Type 1 sediment controls are not recommended to be installed due to the available space of the Project not allowing the correct sizing of Type 1 controls. To meet the objectives and targets and meet water quality criteria, WAPL will:

- stage construction activities to reduce the area cleared at one time
- progressively stabilise slopes and prioritise the progressive stabilisation of the cut to fill area with HDPE sheets keyed in and anchored to the top face of the batter per IFC drawing GAS-557-DW-CV-007
- divert clean water up slope of the construction site around the disturbed area
- Monitor the effectiveness of erosion and sediment controls and increase controls where erosion or sedimentation issues are identified.

#### 3.1 Erosion hazard (RUSLE)

An indicative erosion hazard assessment using the RUSLE equation has been undertaken to estimate the overall erosion hazard potential. The Project's erosion hazard potential is calculated assuming no best practise erosion controls are in place and the site is stripped of all ground cover with no staging of construction activities.

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

Table 3 details the factors and adopted values for the Project's erosion hazard assessment.

Table 3: RUSLE factors

RUSLE Parameter	Description	Adopted Value
R-Factor	Rainfall erosivity	3,721 based on Sydney erosivity factor (Table E1, BPESC 2009)
K-Factor	Soil erodibility factor	0.053 based on default vale for silty gravels, poorly graded gravel-sand-silt (Table E5, BPESC 2009)
LS-Factor	Topographic factor	4.43 (LS vale based off 30m slope 8m rise)
P-Factor	Soil conservation practice factor	Default of 1.3 to be used (smooth and compacted)
C-factor	Ground cover factor	Default of 1.0 to be used (no ground cover)

Project Erosion Hazard RUSLE:

$$A = 3,721 \times 0.053 \times 4.43 \times 1.3 \times 1.0$$

$$A = 1,135 \text{ t/ha/yr} / 0.50 \text{ (estimated area cleared of ground cover)}$$

$$A = \mathbf{567.50 \text{ t/ha/yr}}$$

The Project's erosion hazard assessment returned a RUSLE value of = **567.50 t/ha/yr** equates to an erosion hazard rating of **low-moderate** (Table 4.2 Blue Book).

WAPL would stage construction to reduce the potential for soil loss and release of sediment laden water down slope of the Project area. Estimated RULSE vales per catchments and the potential erosion hazard are listed below.

Table 4: Catchment RUSLE Calculations

Catchment	RULSE (T/HA/YR)	Erosion Risk
C1: Stormwater Drainage	$A = 3,721 \times 0.053 \times 0.89 \times 1.3 \times 1.0$ $A = 228 / 0.150 \text{ ha}$ $A = \mathbf{34 \text{ t/ha/yr}}$	Very low
C2: Clear and Grade (inc Cut to Fill)	$A = 3,721 \times 0.053 \times 4.43 \times 1.3 \times 1.0$ $A = 1,135 / 0.300 \text{ ha}$ $A = \mathbf{340.50 \text{ t/ha/yr}}$	Low to moderate
C3: Hot Tap Works	$A = 3,721 \times 0.053 \times 0.24 \times 1.3 \times 1.0$ $A = 62 / 0.150 \text{ ha}$ $A = \mathbf{9.23 \text{ t/ha/yr}}$	Very low

## 3.2 Construction Staging

Construction should be staged to minimise the quantity of soil with no ground cover exposed to erosion.

To facilitate the Facility, a new laydown area is required. The new laydown area requires approximately 2,369 m<sup>3</sup> of fill being cut from the eastern embankment within the construction site. The fill operation will infill the existing open drain, therefore, the new open drain would be required to be constructed before the cut to fill operation occurs.

Construction staging should occur in the following order:

1. **Site Establishment PESCP:** Construct stable construction access point, construct temporary laydown area, install Sediment Fence 1 & 2.
2. Complete works in Catchment **C1: Stormwater Drainage** including the open drain, and rip rap banks.
3. Complete the cut to fill operation within Catchment **C2: Clear and Grade** including the stabilising the *pipe work area pavement* with 100mm of crushed blue metal and stabilising the eastern embankment and installing the clean water drain upslope of the retaining wall.
4. Complete rehabilitation works.

## 3.3 Erosion Control Installation Sequence

Table 5: Sediment Control Installation Sequence

Control Name	PESCP	Installation	Removal	Best Practise Guide
Stabilised Site Access (CA-1)	<ul style="list-style-type: none"> <li>▪ Site Establishment</li> <li>▪ Clear and Grade</li> <li>▪ Rehabilitation</li> </ul>	Day one	When permanent access road has been installed	SD 6-14
Earth Bank (EB-1)	<ul style="list-style-type: none"> <li>▪ Site Establishment</li> <li>▪ Clear and Grade</li> <li>▪ Rehabilitation</li> </ul>	Day one	Post rehabilitation stabilisation	SD 5-5
Earth Bank (EB-2)	<ul style="list-style-type: none"> <li>▪ Site Establishment</li> <li>▪ Clear and Grade</li> <li>▪ Rehabilitation</li> </ul>	Prior to clearing for construction laydown	Rehabilitation	SD 5-5

Control Name	PESCP	Installation	Removal	Best Practise Guide
Earth Bank (EB-3)	<ul style="list-style-type: none"> <li>Site Establishment</li> </ul>	Install prior to hot tap works	Remove after hot tap works are area is stabilised	SD 5-5
Sediment Fence (SF-1)	<ul style="list-style-type: none"> <li>Site Establishment</li> <li>Clear and Grade</li> <li>Rehabilitation</li> </ul>	Day one	After Facility area has been stabilised with aggregate	SD 6-8
Sediment Fence 2 (SF-2)	<ul style="list-style-type: none"> <li>Site Establishment</li> <li>Clear and Grade</li> <li>Rehabilitation</li> </ul>	Day one	Post rehabilitation of construction laydown	SD 5-5
Rock Check Dams (RC)	<ul style="list-style-type: none"> <li>Site Establishment</li> </ul>	Install progressively after stripping of new stormwater drainage channel	Remove progressively as new stormwater drainage channel is completed and stabilised	SD 5-4

Table 6: Rehabilitation Sequence

Control Name	PESCP	Installation	Removal	Best Practise Guide
RIP RAP Batter Chutes (BS)	<ul style="list-style-type: none"> <li>Rehabilitation</li> </ul>	After removal of construction laydown	Permanent control	IFC Drawing GAS-557-DW-CV-001
Plant cover crop in disturbed areas	<ul style="list-style-type: none"> <li>Rehabilitation</li> </ul>	Progressivity in areas post construction. Disturbed soil surfaces to be stabilised within minimum 70% cover within 20 days of completion of works within any disturbed work area	Permanent control	Seedbed Preparation Standard Drawing SD 7-1
Sediment Fence 1 & 2	<ul style="list-style-type: none"> <li>Rehabilitation</li> </ul>	Site establishment	After 70% stabilisation achieved	SD 5-5
Earth Bank 1 & 2	<ul style="list-style-type: none"> <li>Rehabilitation</li> </ul>	Site establishment	After 70% stabilisation achieved	SD 5-5

### 3.4 Standard Drawings

- Construction Access (SD 6-14) – Appendix A

- Earth Bank (SD 5-5) – Appendix B
- Rock Check Dam (SD 5-4) – Appendix C
- Sediment Fence (SD 6-8) – Appendix D
- Seedbank Preparation (SD 7-1) – Appendix E

### 3.5 Minimum design standards

The minimum design storm standard for temporary sediment and erosion controls with a design life up to 6 months are summarised in Table 7.

Table 7: Minimum design standards

Minimum Design Storm Event – average recurrence interval (ARI)		
Control Measure	Standard Design	Design Standard
<b>Temporary Drainage (Erosion) Controls</b>		
(e.g. earth banks, catch drains, level spreaders, check dams) should be designed to have a non-erosive hydraulic capacity (excluding freeboard) sufficient to convey the nominated design storm event	2-year ARI	Install per Standard Drawing SD 5-5. Earth Bank to be min 300mm high by 1m wide (catch drain not required).

### 3.6 Cut to Fill

Construction of the Project will produce approximately 786 m<sup>3</sup> of excess fill material. Due to the limited amount of room for stockpiling, it is suggested that WAPL load out excess spoil as it is being excavated. This would reduce stockpile management requirements and dust emissions due to stockpiling.

Table 8: Cut to Fill Quantities

CUT/FILL SUMMARY (APPROX. VALUES)					
NAME	CUT FACTOR	FILL FACTOR	CUT	FILL	NET
SURFACE	1.15	1.15	2369 Cu.m.	3155 Cu. m.	786 Cu. m. (FILL)
SITE SILTY CLAY				138 Cu. m.	138 Cu. m. (FILL)
BLUE METAL	1.0	1.0		184 Cu. m.	184 Cu. m. (FILL)
DGS40	1.0	1.15		161 Cu. m.	161 Cu. m. (FILL)
DGS20	1.0	1.15		83 Cu. m.	83 Cu. m. (FILL)
SELECT FILL	1.0	1.15		1507 Cu. m.	1507 Cu. m. (FILL)
RIP RAP	1.0	1.0		164 Cu. m.	164 Cu. m. (FILL)
GENERAL FILL	1.0	1.15		845 Cu. m.	845 Cu. m. (FILL)

### 3.7 Discharge Criteria and Dewatering

Project works must comply with Section 120 of the POEO Act. The following discharge criteria limits will be adopted for the Project. Prior to any dewatering activities where there is a reasonable expectation for runoff to exit the works area, a Permit to Discharge will be issued by the HSE Advisor or delegate, ensuring the water quality criteria detailed in Table 9 is met. If

water required to be discharged does not meet the discharge criteria, treatment options may be used to meet the parameters discharge criteria.

The Permit to Discharge will detail the location, volume, date and time of the dewatering; the results of the water quality testing against the discharge criteria; and sediment controls used during dewatering. The Permit to Discharge will be used as a record of the dewatering activity and as evidence of compliance with the discharge criteria.

Table 9: Discharge criteria

Parameter	Criteria	Treatment
Total Suspended Solids (TSS)	Less than 50mg/L	Gypsum applied at 30 kg / 100 m3 of water
pH	6.5 – 8.5	Lower pH: acid used per manufactures requirements Raise pH: agriculture lime used per manufactures requirements
Hydrocarbons	No visible sheen	N/A: If hydrocarbons are present classify water as wastewater

The Project may undertake a site specific correlation between NTU (Nephelometric Turbidity Unit) and TSS in order to facilitate field turbidity sampling. Until this process is completed, all discharges and background monitoring are to measure TSS values through a NATA accredited laboratory.

Water that doesn't meet the discharge criteria listed in Table 9 would need to be either treated onsite or transported and disposed of as wastewater by a licensed transporter at a licensed facility for disposal.

### 3.8 Rehabilitation

Progressive rehabilitation will be prioritised during construction of the Project with special focus on rehabilitation of the new stormwater drainage channel.

Stabilising the clear and grade within the new stormwater drainage line will occur progressively by laying geofabric within the drainage line and banks to create a 'clean water drain' capable of carrying water through the construction site without picking up sediment.

Areas stripped of ground cover to facilitate construction will be progressively stabilised with suitable plant species to replace the ground cover. Due to the site being an existing landfill with low ecological sensitivities, plant species suggestion for ground cover is provided below:

Table 10: Seeding Mix

Species	Application Rate
Japanese Millet	20kg/ha
Perennial Ryegrass	10kg/ha

Species	Application Rate
White clover ( <i>Trifolium repens</i> )	3kg/ha

Apply suitable nitrogen phosphorous potassium (N-P-K) fertiliser at recommended rate per seed mix recommendation with seed mix.

Preparation of seed bank during rehabilitation should be completed in accordance with *Seedbed Preparation Standard Drawing SD 7-1* (Appendix E).

## 4. Management and Mitigation Measures

Table 11: Management and Mitigation Measure

Measure/ Requirement	Timing	Responsibility	Evidence
<b>General</b>			
PESCPs will be developed for high risk areas prior to commencing works	Pre construction	HSE Advisor	PESCPs
A register of PESCPs will be maintained in the Project office along with copies of PESCPs	During construction	HSE Advisor	Register
Proposed water sources for construction activities will be determined by the HSE Advisor / Project Manager and all approvals and licenses obtained prior to extraction	Pre and during construction	HSE Advisor	Approvals/ Licenses
The HSE Advisor and Construction Supervisor will monitor weather conditions and forecasts daily and plan works activities in accordance with risk including stabilisation of site as required	During construction	HSE Advisor	Daily Prestart
Relevant documentation and systems for recording environmental activities will be implemented including: <ul style="list-style-type: none"> <li>Weekly checklist</li> <li>Contaminated Land/ ASS registers (if required)</li> </ul>	During construction	HSE Advisor	Checklist/ Monitoring records/ Register
Key erosion and sediment control measures such as sediment traps and clean water diversions will be installed as early works where practicable	During construction	HSE Advisor	Weekly Checklist
Adequate supplies of erosion and sediment control materials will be available on site at all times	During construction	HSE Advisor	Weekly Checklist
High risk works such as earthworks, will not be undertaken immediately before or during high rainfall or wind events	During construction	HSE Advisor	Weekly Checklist
Environmental incidents will be reported in accordance with Section 1.3.6 of the CEMP	During construction	HSE Advisor	Incident Report
Environmental performance will be monitored as per Section 15 of WAPL's CEMP	During construction	HSE Advisor	Weekly Checklist/ Rainfall Checklist
<b>Training</b>			
Erosion and sediment control aspects will be included in the site induction for the Project	Pre construction	HSE Advisor	Induction Records
Erosion and sediment control training will be regularly provided to project staff as required including de-watering and correct installation of controls	During construction	HSE Advisor	Toolbox Records
<b>Erosion Control</b>			



Measure/ Requirement	Timing	Responsibility	Evidence
Disturbance will be staged and limited to the least amount practicable to undertake the upcoming works safely	During construction	HSE Advisor / Project Manager	Weekly Checklist
Temporary ground covers (i.e. geofabric, soil binder) will be utilised to provide temporary cover prior to rainfall as appropriate or in areas where sediment controls are unable to be installed	During construction	HSE Advisor	PESCPs
Construction works will be planned and staged to allow for timely and progressive stabilisation and rehabilitation of completed areas	During construction	HSE Advisor	PESCPs
<b>Sediment Control</b>			
Sediment controls are to be installed to capture or treat dirty water prior to discharge off site to meet discharge criteria	During construction	HSE Advisor	PESCPs / Weekly Checklist
Sediment controls are to remain in place until appropriate stabilisation of the catchment is undertaken, or are no longer required	During construction	HSE Advisor	Weekly Checklist
<b>Access and Maintenance</b>			
All vehicles leaving site are to ensure vehicle is free of excess sediment	During construction	HSE Advisor	Weekly Checklist
Stabilised access points will be installed where required, typically from unsealed work areas to public roads	During construction	HSE Advisor	Weekly Checklist
Street sweepers and other methods are to be deployed to clean up excess sediment tracked onto roads	During construction	HSE Advisor	Weekly Checklist
Material deliveries are to have covered loads	During construction	HSE Advisor	Weekly Checklist
Access to site is to be restricted during and post rainfall if required to prevent excess sediment tracking	During construction	HSE Advisor	Weekly Checklist / Rainfall Checklist
<b>Drainage Control</b>			
'Clean' run on water is to be diverted around or through site and 'dirty' water is to be directed through site sediment traps prior to discharging from site	During construction	HSE Advisor	PESCPs
Areas subject to concentrated flow (i.e. diversion drains, batter chutes) are to be lined with geofabric, seed, erosion control matting or similar to minimise erosion	During construction	HSE Advisor	PESCPs
Outlets of pipes or culverts are to have energy dissipaters installed (i.e. scour rock)	During construction	HSE Advisor	PESCPs / Design drawings

Measure/ Requirement	Timing	Responsibility	Evidence
Rock check dams may be installed in drainage as velocity checks. Placement of rock on dispersive soils should be avoided	During construction	HSE Advisor	PESCPs
Slope lengths in areas of exposed soils will be limited to a maximum of 80m whenever inclement weather is forecast	During construction	HSE Advisor	Rainfall Checklist
<b>Stockpile Management</b>			
Stockpiles of materials will be positioned in appropriate locations away from watercourse, drainage lines and flood plains	During construction	HSE Advisor	Weekly Checklist
Materials are to be stockpiled separately (i.e. vegetation, subsoil, topsoil) wherever practicable	During construction	HSE Advisor	Weekly Checklist
Inactive stockpiles will be stabilised to a C-factor of 0.10 (equivalent ground cover of 60%) within 10 days	During construction	HSE Advisor	Weekly Checklist
Topsoil and mulch stockpiles should be maintained at heights less than 2m where practicable	During construction	HSE Advisor	Weekly Checklist
Stockpiles are to be battered to no steeper than 2:1 (H:V) where space permits	During construction	HSE Advisor	Weekly Checklist
Dust suppression will be undertaken as required on stockpiles	During construction	HSE Advisor	Weekly Checklist
<b>Dust Suppression</b>			
Dust suppression will be undertaken when necessary to minimise airborne dust particularly around sensitive receptors	During construction	HSE Advisor	Weekly Checklist
Where possible, utilise retained water on site as priority	During construction	HSE Advisor	Weekly Checklist
Cover dust-creating loads while in transit on public roads	During construction	HSE Advisor	Weekly Checklist
Monitor weather forecasts for conditions that will cause excessive dust generation and plan works accordingly	During construction	HSE Advisor	Daily Prestart
Apply soil binder to haul roads and exposed areas such as laydowns if required	During construction	HSE Advisor	Weekly Checklist
<b>Clear and Grade</b>			
Disturbance areas will be clearly delineated and established prior to commencing clear and grade activities	Pre-construction	HSE Advisor	Daily Prestart
Erosion and sediment control measures are to be installed prior to stripping or immediately following for each discrete works area	During construction	HSE Advisor	Weekly Checklist
All vegetation that is to be maintained is to be clearly marked	Pre-construction	HSE Advisor	Pre-clearance Survey

Measure/ Requirement	Timing	Responsibility	Evidence
Land clearing is to be undertaken progressively and limited to only that which is necessary for upcoming works	During construction	HSE Advisor	Weekly Checklist
Wherever possible, options for beneficial reuse of vegetation should be investigated	During construction	HSE Advisor	Weekly Checklist
<b>Trenching</b>			
Avoid trenching in areas where water flow is likely to concentrate, or schedule works for dry periods where feasible	During construction	HSE Advisor	Daily Prestart
Ensure trench widths and depths are the minimum necessary	During construction	HSE Advisor	Design
Ensure trench spoil and topsoils are stockpiled separately and avoid mixing	During construction	HSE Advisor	Weekly Checklist
Divert surface water away from trench openings where feasible	During construction	HSE Advisor	Weekly Checklist
Installation of earth banks is to consider the erodibility of the soils, slope gradients and lengths and are to be installed on a 1% grade to minimise erosion	During construction	HSE Advisor	Weekly Checklist
Following backfilling, remove excess or unsuitable spoil from site then replace topsoil and vegetation to match surrounding ground levels as soon as practicable	During construction	HSE Advisor	Weekly Checklist
<b>De-watering</b>			
Wherever possible, water detained on site will be utilised for dust control and other non-potable uses.	During construction	HSE Advisor	Weekly Checklist / Permit to Discharge
Dewatering is to be conducted in accordance with the issued Permit to Discharge and meet the discharge criteria detailed in Table 9.	During construction	HSE Advisor	Permit to Discharge
Any site water which does not meet the discharge criteria would be classified as wastewater, transported offsite by a licensed transporter, and disposed of at a licensed waste facility	During construction	Project Manager Supervisor HSE Advisor	Weekly Checklist Waste Register
Any discharge will include appropriate scour protection or dissipation	During construction	HSE Advisor	Permit to Discharge
<b>Wet Weather Management</b>			
Prior to forecast rainfall events of 80% chance, 10mm in 24 hours or more, end of day controls will be considered to help reduce erosion and control sediment. These may include the following; <ul style="list-style-type: none"> <li>Earth banks</li> </ul>	During construction	HSE Advisor	Rainfall Checklist

Measure/ Requirement	Timing	Responsibility	Evidence
<ul style="list-style-type: none"> <li>Temporary ground cover (i.e. matting, soil binder)</li> </ul>			
Prior to forecast heavy rainfall (80% chance, 15mm in 24 hours) the HSE Advisor and Construction Supervisor will inspect the site and note any areas requiring additional measures	During construction	HSE Advisor	Rainfall Checklist
<b>Inspections and Audits</b>			
<p>The HSE Advisor will inspect all environmental controls measures across active works sites at least;</p> <ul style="list-style-type: none"> <li>Weekly</li> <li>Prior to forecast rainfall of 80% chance, 15mm in 24 hours</li> <li>Within 18 hours after rainfall which causes runoff from the construction site.</li> </ul> <p>Inspections will include checks of drainage, erosion and sediment controls to determine effectiveness and maintenance requirements. Inspections will consider issues such as;</p> <ul style="list-style-type: none"> <li>Sediment transport and or deposition either on or off site</li> <li>Evidence of excessive erosion</li> <li>Maintenance, treatment and or de-watering requirements</li> <li>Stability of reinstatement, rehabilitation and revegetation works</li> </ul>	During construction	HSE Advisor	Weekly Checklist / Rainfall Checklist
Corrective maintenance to address any damage to erosion and sediment controls is to be scheduled and completed as soon as practicable	During construction	HSE Advisor	Weekly Checklist
Sediment controls will be cleaned out as required, no more than 5 days after rainfall. Sediment will be stockpiled or added to backfill	During construction	HSE Advisor	Weekly Checklist / Rainfall Checklist
<b>Stabilisation and Rehabilitation</b>			
Undertake progressive stabilisation and rehabilitation of ground surfaces as they are completed which may be achieved through suitable grass species or repaving roads and sealed surfaces	During construction	HSE Advisor	Weekly Checklist
In areas to be revegetated, progressively revegetate disturbed areas using appropriate species	During construction	HSE Advisor	Weekly Checklist
During revegetation works, ensure topsoil is appropriately keyed in with subsoil through scarification	During construction	HSE Advisor	Weekly Checklist
Sediment controls are to remain in place until their upslope catchment is stabilised	During construction	HSE Advisor	Weekly Checklist

## 5. Monitoring and Inspections

Monitoring and inspection activities will be undertaken with Section 16.2.1 of WAPL's CEMP.

Weekly inspections will be undertaken of all active work fronts during construction activities and noted on the weekly checklist. Erosion and sediment control items will be part of the inspections.

Pre and post rainfall inspections will be undertaken prior to forecast 80% chance of 15mm of rain within a 24 hour period or at times when it is reasonably expected that runoff producing rainfall is to occur.

## 6. References

*Acid Sulfate Soil Manual* Acid Sulfate Soil Management Advisory Committee 1998

*A Geotechnical and Contamination Site Investigation Report – Port Kembla Lateral Looping Project* (Golder, 2021)

*Schedule B1 Guideline Investigation Levels for Soil and Groundwater* National Environment Protection (Assessment of Site Contamination) Measure 2011

**Appendix A: Construction Access (SD 6-14)**

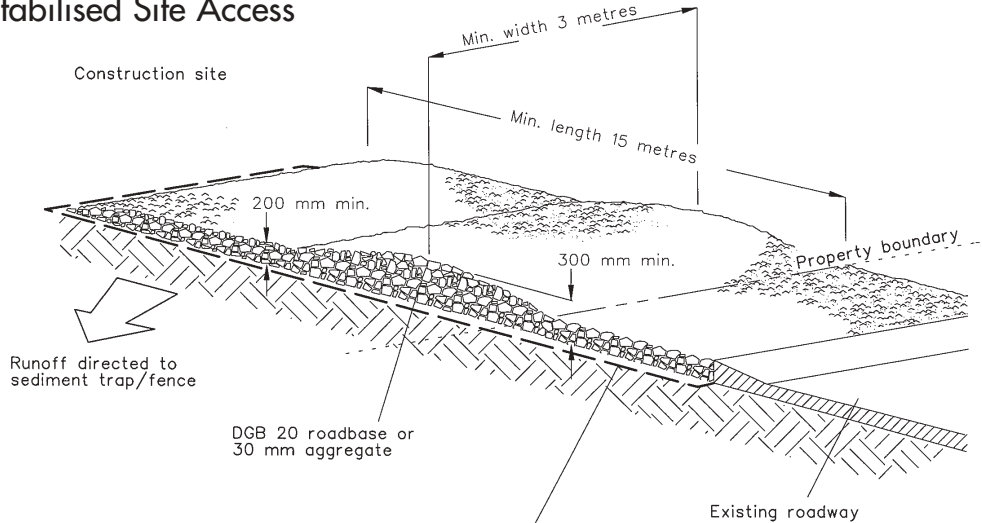
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## Stabilised Site Accesses

1. Strip the topsoil, level the site and compact the subgrade.
2. Cover the area with needle-punched geotextile.
3. Construct a 200-mm thick pad over the geotextile using road base or 30-mm aggregate.
4. Ensure the structure is at least 15 metres long or to building alignment and at least 3 metres wide.
5. Where a sediment fence joins onto the stabilised access, construct a hump in the stabilised access to divert water to the sediment fence.



## Stabilised Site Access



Geotextile fabric designed to prevent intermixing of subgrade and base materials and to maintain good properties of the sub-base layers.

Geofabric may be a woven or needle-punched product with a minimum CBR burst strength (AS3706.4-90) of 2500 N

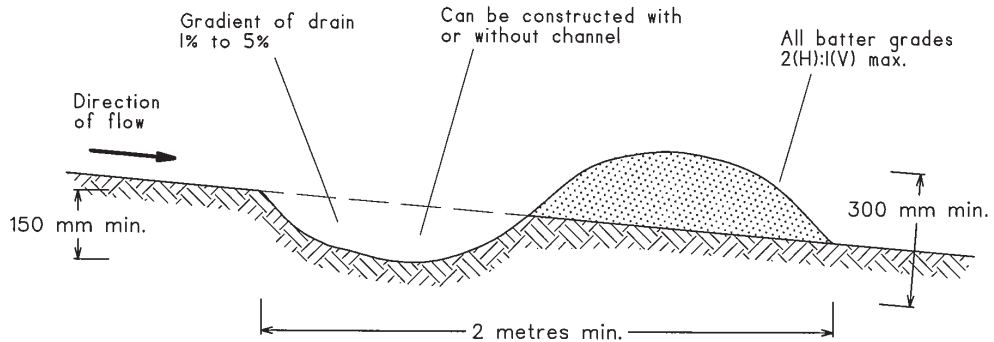
**Appendix B: Earth Bank (SD 5-5)**

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## Earth Banks (Low Flow)

1. Build with gradients between 1 percent and 5 percent.
2. Avoid removing trees and shrubs if possible – work around them.
3. Ensure the structures are free of projections or other irregularities that could impede water flow.
4. Build the drains with circular, parabolic or trapezoidal cross sections, not V-shaped.
5. Ensure the banks are properly compacted to prevent failure.
6. Complete permanent or temporary stabilisation within 10 days of construction.

## Earth Bank (Low Flow)



NOTE: Only to be used as temporary bank where maximum upslope length is 80 metres.

# Appendix C: Rock Check Dam (SD 5-4)

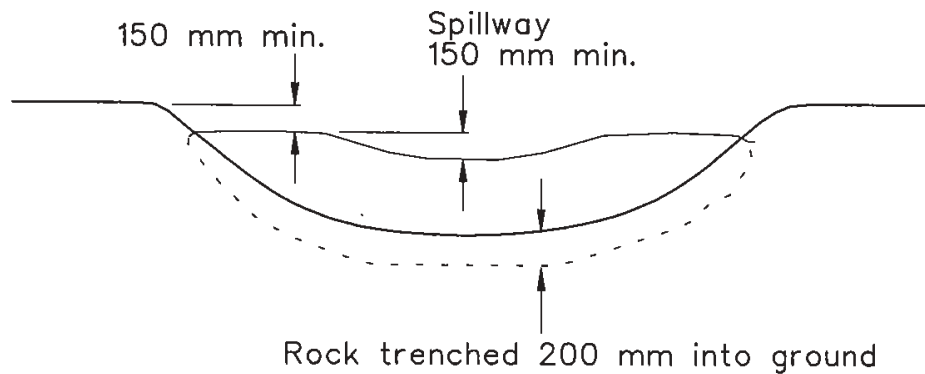
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## Check Dams

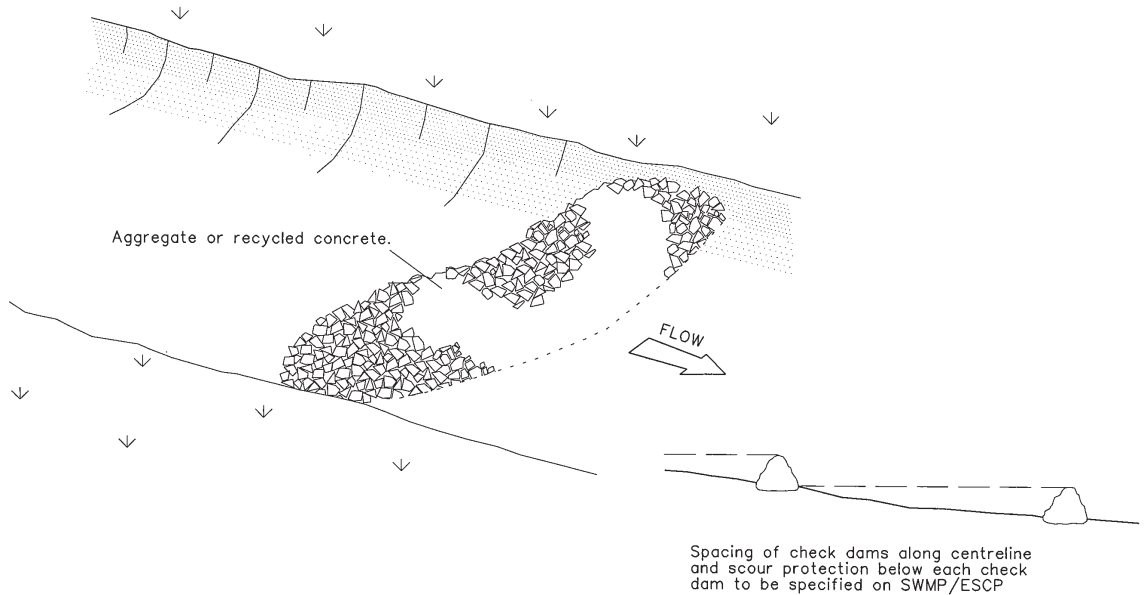
1. Check dams can be built with various materials, including rocks, logs, sandbags and straw bales. The maintenance program should ensure their integrity is retained, especially where constructed with straw bales. In the case of bales, this might require their replacement each two to four months.
2.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

---

## Rock Check Dam



## Rock Check Dam





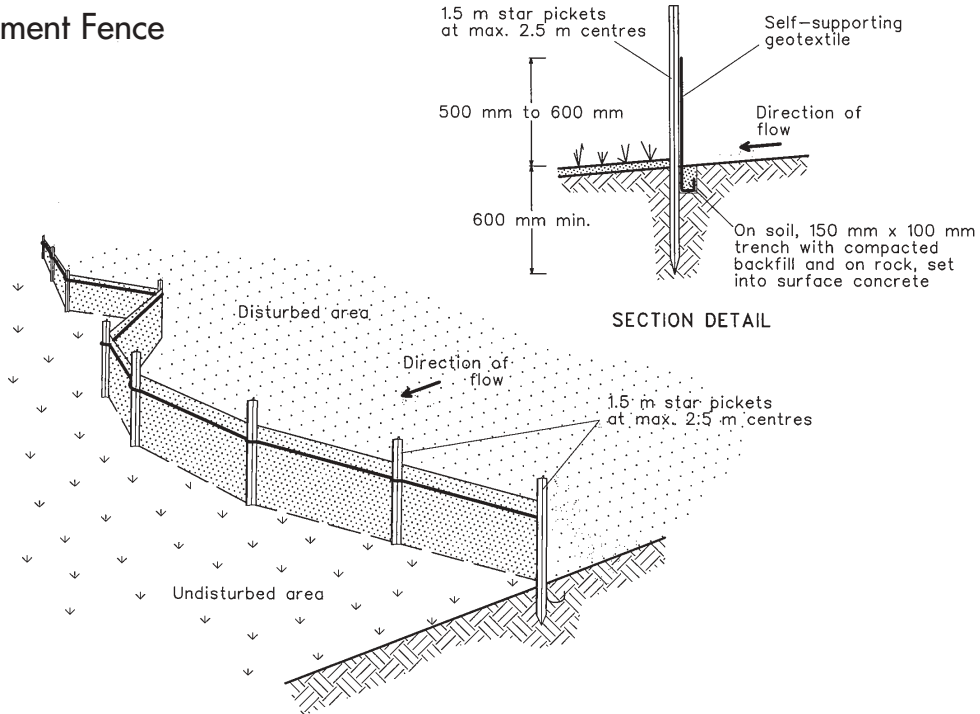
**Appendix D: Sediment Fence (SD 6-8)**

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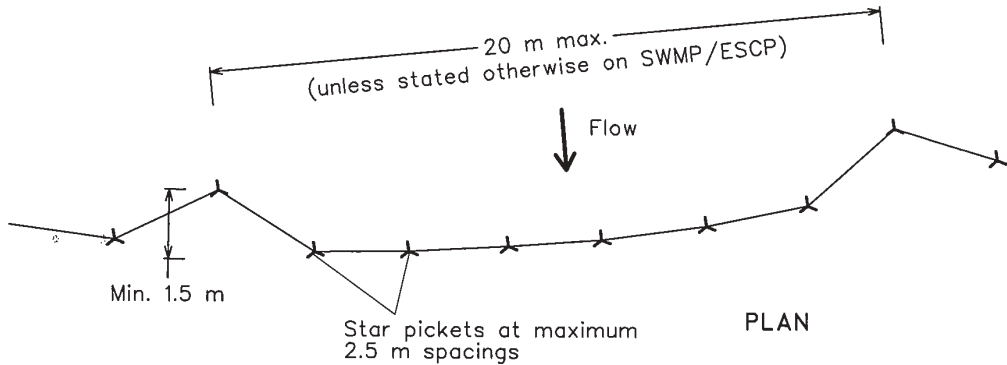
## Sediment Fences

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

# Sediment Fence



# Sediment Fence



# Appendix E: Seedbank Preparation (SD 7-1)

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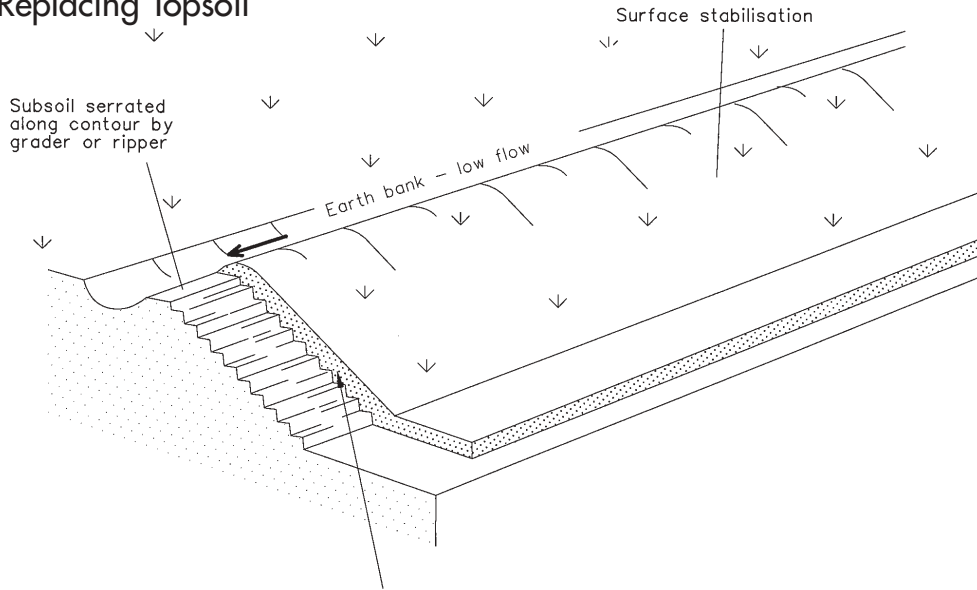
## Replacing Topsoil

1. Scarify the ground surface along the line of the contour to a depth of 50 mm to 100 mm to break up any hardsetting surfaces and to provide a good bond between the respread material and subsoil.
2. Add soil ameliorants as required by the ESCP or SWMP.
3. Rip to a depth of 300 mm if compacted layers occur.
4. Where possible, replace topsoil to a depth of 40 to 60 mm on lands where the slope exceeds 4(H):1(V) and to at least 75 mm on lower gradients.

## Seedbed Preparation

1. Loosen compacted soil before sowing any seed. If necessary, rip the soil to a depth of 300 mm.
2. Work the ground only as much as necessary to achieve the desired tilth and prepare a good seedbed. Avoid rotary hoe cultivation.
3. Avoid cultivation in very wet or very dry conditions.
4. Cultivate on or close to the contour where possible, not up and down the slope.

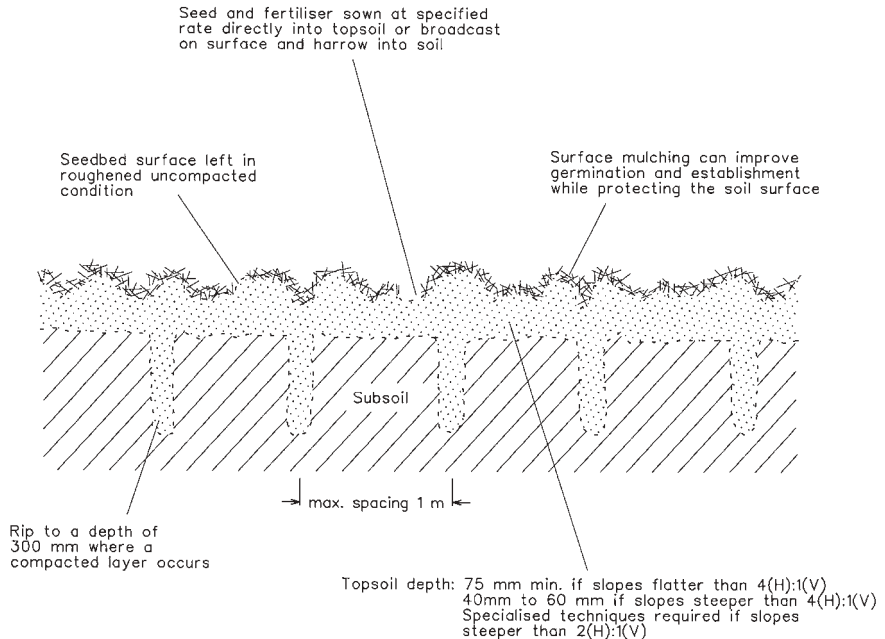
## Replacing Topsoil



Topsoil depth: 75 mm min. if batter flatter than 4(H):1(V)  
40 mm to 60 mm if batter steeper than 4(H):1(V)  
Specialised techniques required if batter slopes steeper than 2(H):1(V)



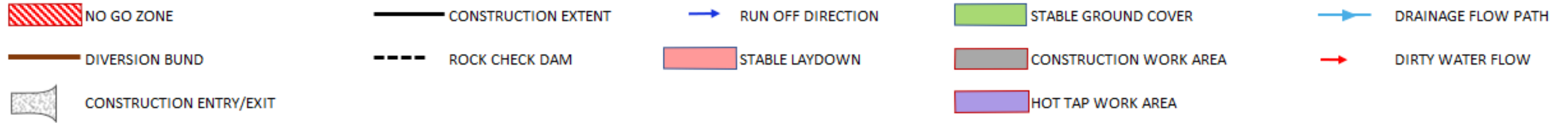
# Seedbed Preparation



# Appendix F: Progressive ESCP

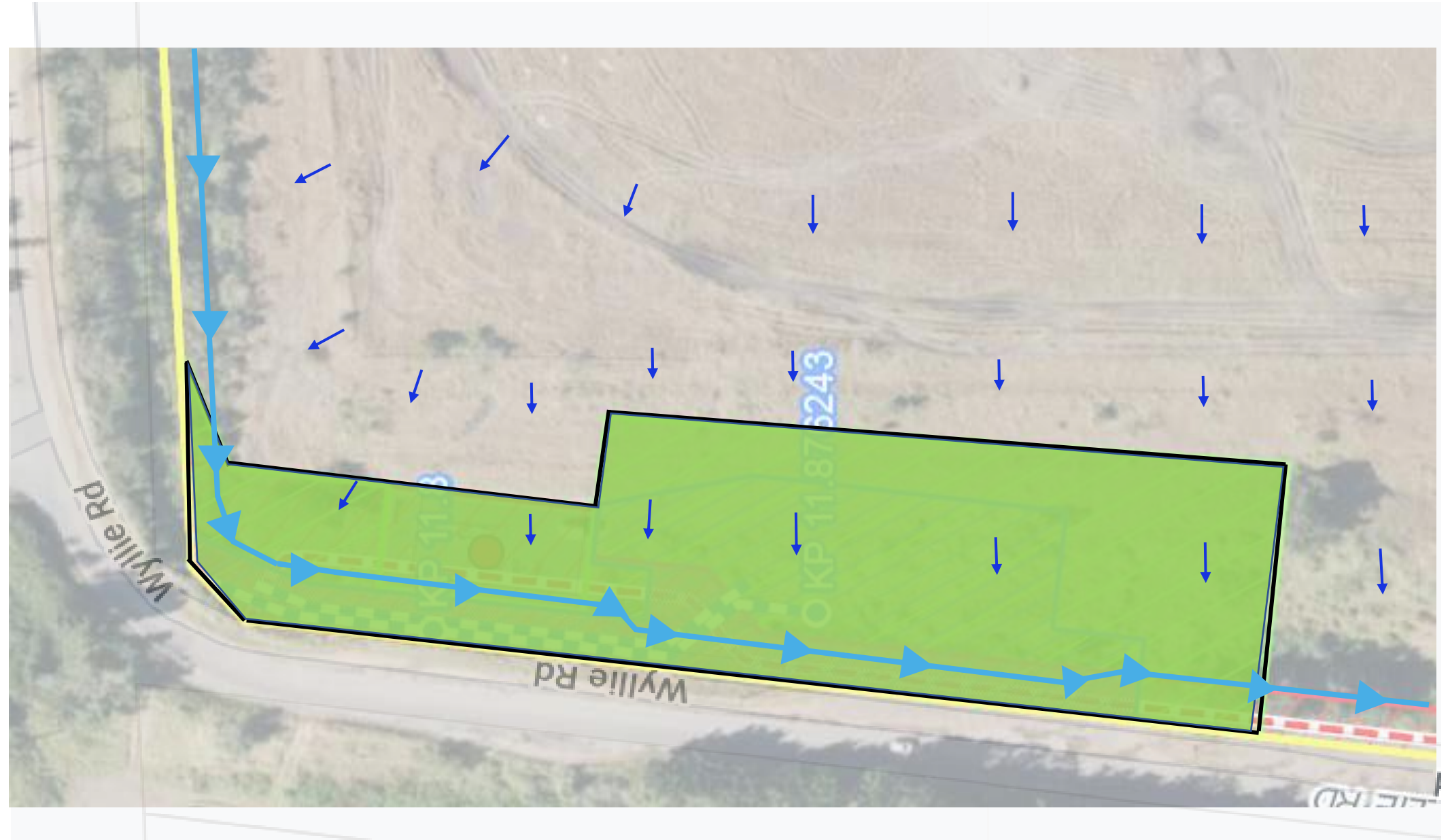
# Project Marlin Facility PESCP


## LEGEND:




## SITE SPECIFIC NOTES

1. LOCATION OF CONTROLS ARE INDICATIVE ONLY AND ARE TO BE IMPLEMENTED ON SITE BY SUPERVISOR AND HSE REPRESENTATIVE
2. ALL ESC CONTROLS AND TPZ ARE TO BE INSTALLED WITHIN THE CONSTRUCTION FOOTPRINT
3. THE EFFECTIVENESS OF CONTROLS CONTAINED WITHIN THE ESCP IS TO BE MONITORED REGULARLY AND UPDATED PROGRESSIVELY AS REQUIRED
3. ALL SITE ACCESS IS TO BE VIA STABLE CONSTRUCTION ACCESS LOCATIONS
4. UPSLOPE EARTH BANK MUST BE INSTALLED PRIOR TO CLEAR AND GRADE
5. CONTROLS MAY BE REMOVED FOR CONSTRUCTION PURPOSES BUT MUST BE REPLACED IF RAINFALL IS EXPECTED
6. WHEN FORECAST RAIN OF 80% CHANCE OF >20MM WITHIN A 24HR PERIOD, UNPROTECTED SLOPE LENGTHS OVER 5% MUST NOT EXCEED 20M
7. CONTROLS WILL BE INSTALLED PROGRESSIVELY IN ACCORDANCE WITH SECTION 3.3 ESCP.



DRAWN BY  
  
 MITCHELL PEARCE CPESC# 12478

REVIEWED BY  
  
 MATT MCDERMOTT CPESC #8153



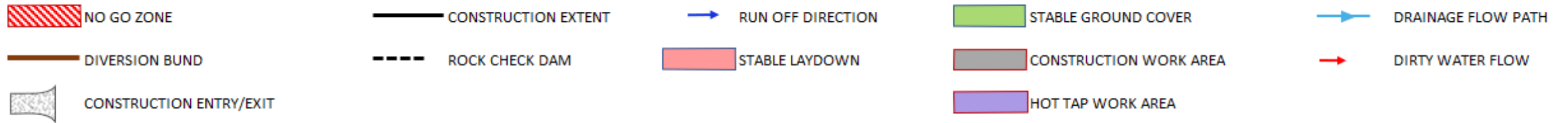
PROJECT MARLIN FACILITY - DRAINAGE PLAN

Date:  
 30/01/2023

DRAWING NOT TO  
 SCALE

# Project Marlin Facility PESCP

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DRAWN BY:

*Mitchell Pearce*

MITCHELL PEARCE CPESC# 12478

REVIEWED BY

*Matt McDermott*

MATT MCDERMOTT CPESC #8153



PROJECT MARLIN FACILITY - CATCHMENT PLAN

Date:

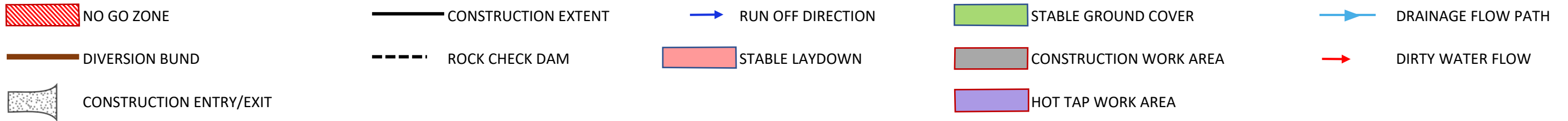
30/01/2023

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# Project Marlin Facility Site Plan


## LEGEND:

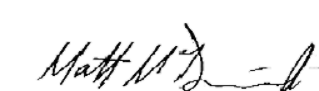


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DRAWN BY  
  
 MITCHELL PEARCE CPESC# 12478

REVIEWED BY  
  
 MATT MCDERMOTT CPESC #8153



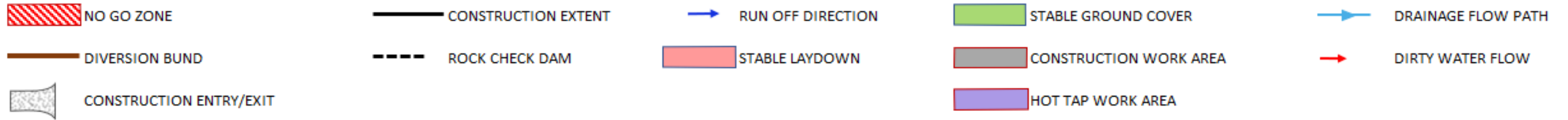
PROJECT MARLIN FACILITY - SITE ESTABLISHMENT AND DRAINAGE WORK

Date:  
 30/01/2023

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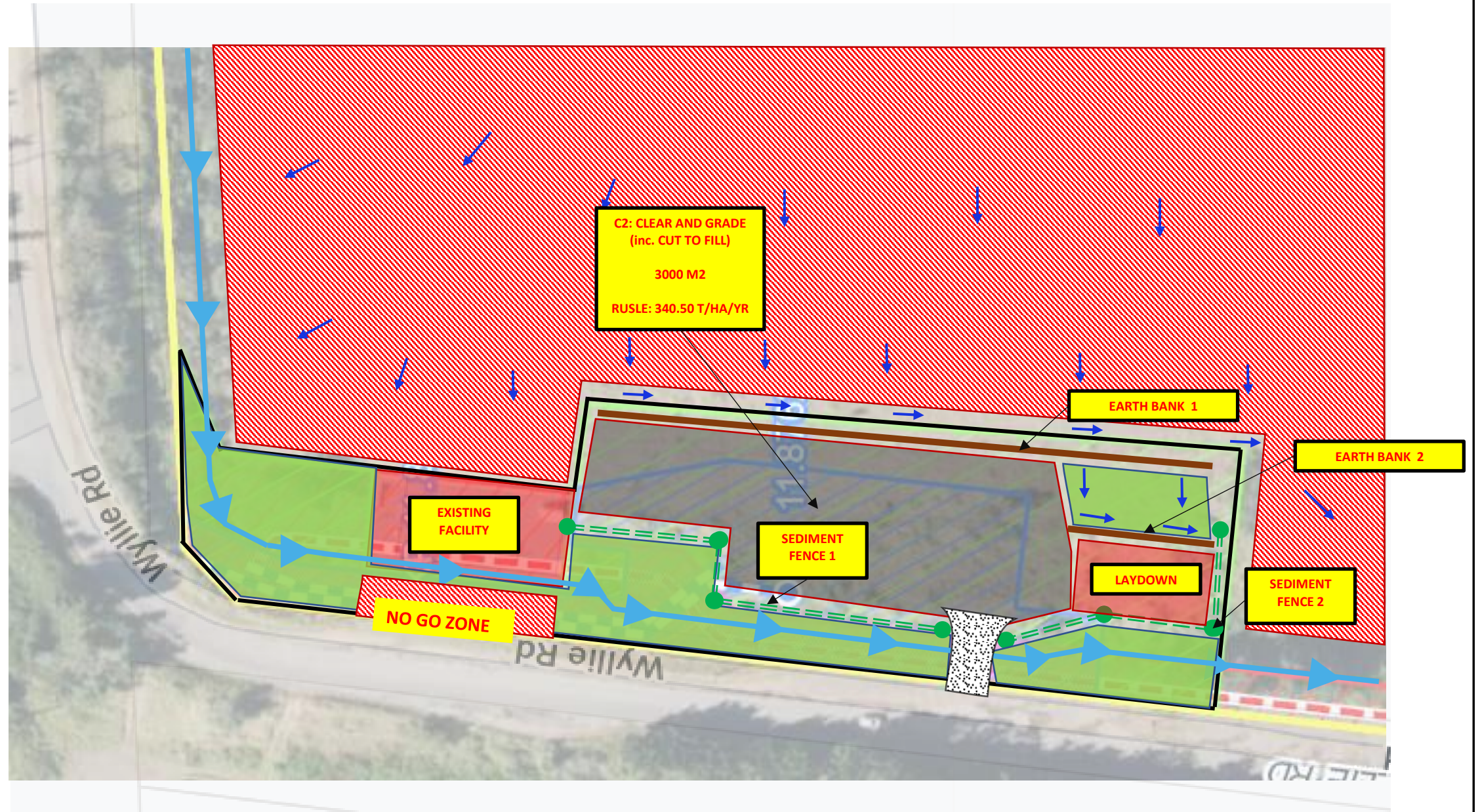
# Project Marlin Facility PESCP

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DRAWN BY

*AKL P*

MITCHELL PEARCE CPESC# 12478

REVIEWED BY

*Matt McDermott*

MATT MCDERMOTT CPESC #8153



PROJECT MARLIN FACILITY - CLEAR AND GRADE (INC. CUT TO FILL)

Date:




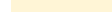








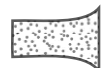

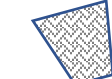
30/01/2023

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# Project Marlin Facility PESCP

## LEGEND:

 CONTOURS (10M)	 TRENCH SPOIL	 RUN OFF DIRECTION	 TEMP CONSTRUCTION AREA	 WATERCOURSE FLOW PATH
 TOPSOIL STOCKPILE	 SOIL BUND (per trench works)	 PIPELINE ALIGNMENT	 WITHIN EASEMENT	 DIRTY WATER FLOW
 COIR LOGS	 TPZ FENCING	 CONSTRUCTION ENTRY/EXIT	 BERM	 RIP RAP BATTER CHUTES

## SITE SPECIFIC NOTES

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4. UPSLOPE DIVERSION BANK MUST BE INSTALLED PRIOR TO CLEAR AND GRADE
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6. WHEN FORECAST RAIN OF 80% CHANCE OF >20MM WITHIN A 24HR PERIOD, UNPROTECTED SLOPE LENGTHS OVER 5% MUST NOT EXCEED 20M
7. CONTROLS WILL BE INSTALLED PROGRESSIVELY IN ACCORDANCE WITH SECTION 3.3 TABLE 6 ESCP.



DRAWN BY

*ALL P*

MITCHELL PEARCE CPESC# 12478

REVIEWED BY

*Matt McDermott*

MATT MCDERMOTT CPESC #8153



PROJECT MARLIN FACILITY - REHABILITATION

Date:

30/01/2023

**DRAWING NOT TO SCALE**

CONSTRUCTION ENVIRONMENT MANAGEMENT PLAN

2211 PROJECT MARLIN KGMS FACILITIES PROJECT

APPENDIX B

WAPL-SYS-PRC-003 Incident Investigation Procedure








WASCO (AUSTRALIA) PTY LTD

# INCIDENT INVESTIGATION PROCEDURE

WAPL-SYS-PRC-003

<i>Document No.</i>	<i>Revision status</i>	<i>Issued By</i>	<i>Checked By</i>	<i>Approved By</i>	<i>Date</i>	<i>Comments</i>
						
<i>WAPL-SYS-PRC-003</i>	<i>1</i>	<i>JT</i>	<i>MM</i>	<i>MW</i>	<i>22/4/15</i>	<i>Added detail on root cause analysis technique</i>
<i>WAPL-SYS-PRC-003</i>	<i>0</i>	<i>JT</i>	<i>PM</i>	<i>MW</i>	<i>22/1/14</i>	<i>Reviewed, revised and updated from old IMS procedure</i>

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## 1. PURPOSE

To provide the process and guidelines for the prompt investigation of incidents and injuries and to effectively identify the immediate and underlying causes or contributing factors.

This procedure is to be applied immediately following:

- The report of/or treatment of any person claimed to have been injured during the course of their employment;
- The occurrence of any reportable environmental incident or breach or material environmental condition or regulation
- Actions that have been taken to control or isolate any situation, which may result in an unplanned or uncontrolled event occurring; and
- A near miss.

## 2. DEFINITIONS

Hazard	A source of potential loss, harm or damage to people, property or the environment.
HSE Advisor	The person delegated with the responsibility of advising Project personnel on Statutory/Legislative requirements, HSE Management Systems and Procedures.
Incident	An event or identified hazard, which causes or has the potential to cause personal injury or illness or financial loss or liability; or an environmental management event or failure of a system of control
Incident/Injury Investigation	An investigation of any event or occurrence, irrespective of its classification or outcome, to identify the contributing factors or causes.
Injury	Any incident which results in personal harm or illness. For injury severity categories, see Incident Reporting Procedure.
Line Supervisor	A Supervisor trained in investigation procedures.
Near Miss	An event or occurrence which had the potential of causing loss, injury or damage.
Notifiable Incident	An event requiring notification to a Statutory Authority as prescribed in the applicable Statutory Act or Legislation of the Country, State or Territory in which the work is being performed.
Risk	the probability of a potential event becoming actual.
Witness	A person who has observed or has knowledge of the circumstances of a specific event or occurrence.

## 3. RESPONSIBILITIES

**Injured Employees/Witnesses** shall report any incident or injury immediately to their Supervisor, HSE Advisor or to the Medic/ First Aider as per the Incident Reporting Procedure.

**HSE Officer/Medic /First Aider** shall:

- Provide initial on site medical services, within their range of competence;
- Report to line supervision any incident or injury of which they are aware;

- Initiate an Incident or Injury Report.

**Supervisors** in control of any site or area in which an incident/injury has been reported to shall:

- Take appropriate and immediate action to secure the scene and prevent recurrence;
- Ensure any injured person receives the appropriate treatment;
- Report the incident/injury to line management (usually the Person In Charge); Gather or secure evidence as appropriate;
- Assign investigation team (severity category 4 only);
- Monitor the investigation process and follow up assigned corrective actions;
- Ensure that investigation outcomes are discussed at HSE meetings; and
- Provide feedback to injured and the initiator.

**Investigation Team Leader/Coordinators** shall:

- Review the severity category given to the event being investigated in accordance with Incident Notification Matrix in the Incident Reporting Procedure;
- Lead/coordinate/review the investigation to determine the immediate and underlying causes and/or contributing factors;
- Have responsibility for ensuring the investigation is carried out - carrying out the actual investigation can be delegated to appropriate personnel where appropriate;
- Recommend corrective actions and confirm that the actions and schedule are acceptable to the assigned supervisor;
- Document and record findings from the investigation on an Investigation Report Form (and attachments as required);
- Enter details of the investigation (including attachments as required) and action items into the HSE Database; and
- Report findings to interested parties and Line Management as per the Incident Reporting Matrix.

**Line Management** shall:

- Confirm or reassign severity category;
- Report incident/injury to appropriate management levels, legal and finance;
- Report incident/injury to appropriate authorities;
- Assign investigation team;
- Check and approve investigation report findings;
- Discuss, provide feedback to investigation leader if any disagreement exists; Monitor and act on overdue corrective actions;
- Analyse for "System Inadequacies" and action accordingly; and
- Check the quality of the Investigation Team's output.

#### 4. OVERVIEW

The primary purpose of any incident/injury investigation is to identify and correct the root causes of a reported event through detailed analysis of contributing factors as soon as possible. It is to be used as a valuable tool in the prevention of potential future injury, damage or loss.

It is Wasco's policy to identify, investigate, report and review all reported incidents, no matter how minor. However, the extent of an investigation, report and review process should reflect the severity (or potential severity) level of the incident/injury.

The investigation level of any reported incident depends on its potential or actual severity. For the purposes of this procedure there are five distinct levels of incident investigation and reporting, namely:

1. Catastrophic
2. Major
3. Moderate
4. Minor
5. Insignificant

For further detail refer to the Incident Notification Matrix in the Incident Reporting Procedure WAPL-SYS-PRC-002.

## 5. ROOT CAUSE ANALYSIS TECHNIQUE

Wasco's preferred root cause analysis technique is the *5 Whys* method.

By repeatedly asking the question "Why" (five is a good rule of thumb), you can peel away the layers of symptoms which can lead to the root cause of a problem. Very often the ostensible reason for a problem will lead you to another question. Although this technique is called "5 Whys," you may find that you will need to ask the question fewer or more times than five before you find the issue related to a problem.

### 5.1 *Benefits of the 5 Whys*

- Help identify the root cause of a problem.
- Determine the relationship between different root causes of a problem.
- One of the simplest tools; easy to complete without statistical analysis.

### 5.2 *When Is 5 Whys Most Useful?*

- When problems involve human factors or interactions.
- In day-to-day business life; can be used within or without a Six Sigma project.

### 5.3 *How to Complete the 5 Whys*

1. Write down the specific problem. Writing the issue helps you formalize the problem and describe it completely. It also helps a team focus on the same problem.
2. Ask Why the problem happens and write the answer down below the problem.
3. If the answer you just provided doesn't identify the root cause of the problem that you wrote down in Step 1, ask Why again and write that answer down.
4. Loop back to step 3 until the team is in agreement that the problem's root cause is identified. Again, this may take fewer or more times than five Whys.

### 5.4 *5 Whys Example*

#### **Incident Statement:**

**1. Why** did the emergency generator stop?

- Because it ran out of fuel.

**2. Why** did it run out of fuel?

- Because it wasn't refueled last week.

**3. Why** didn't it get refueled last week?

- Because Joe was on leave and no-body did his work.

**4. Why** didn't anyone replace Joe last week?

- Because nobody knew his refueling job was critical and he was not replaced.

**5. Why** didn't anyone look at the critical job list?

- Because there is no system to ensure the critical job list is made available to the relevant manager.

### 5.5 5 Whys and the Fishbone Diagram

The 5 Whys can be used individually or as a part of the fishbone (also known as the cause and effect or Ishikawa) diagram. The fishbone diagram helps you explore all potential or real causes that result in a single defect or failure. Once all inputs are established on the fishbone, you can use the 5 Whys technique to drill down to the root causes.

## 6. CONDUCTING THE INVESTIGATION

The steps for carrying out an investigation are:

1. Management select the Investigation Team Leader who must be trained in Incident/Injury investigation and approved by the Project Manager to lead any investigation;
2. Team Leader briefs the team and assigns tasks;

*Note: for low severity incidents, there may be only one Investigator.*

3. Team members gather data;
4. Team determines the chronological sequence of events;
5. Team identifies contributing factors to the event;
6. Team structure data on a "Causation" diagram;
7. Team determine corrective actions and assign responsibility and time frames;
8. Team leader confirms corrective actions are understood and achievable with assigned Supervisors or Managers;
9. Team leader completes and circulates draft report for comment; and
10. Management approve and act on report and team leader issues final report.

### 6.1 Selecting the Investigation Team

Management is responsible for the selection of an investigation team appropriate for the actual severity, potential severity or complexity of the incident.

Severity categories 1, 2, 3 and 4 all require an Incident Report to be completed. If the responsible management level decides that a formal investigation is not required, they must still complete the investigation report stating the reasons why. The responsible Line Manager/Supervisor in this case will be deemed the investigation leader and will be accountable for this decision.

The severity category for the selection of teams shall be based on the "potential" rather than the actual outcome of an event. Often an incident did not reach its full potential consequences. If there is any doubt about category level, then assign the next level up.

When evaluating the severity or potential severity of an event, the investigation team shall assess the potential likelihood of the same or similar events recurring. This may cause a category 5 event to be upgraded if similar events are likely to occur again.

The person selecting the investigation team should endeavour to keep the team to 4 or less. Short term membership may be necessary to provide advice on a particular aspect. The benefits of having the injured person or the incident initiator on the investigation team should be carefully considered.

The personnel listed below should be considered when selecting an investigation team:

- Line Management:
- OHS:
- HSE Representative
- Contractors
- Others
- External Authorities

## **6.2 Team Briefing and Planning**

The Investigation Team Leader will assemble the team and provide a brief outline of the incident and consequences and provide a plan for the investigation, covering the following:

- Location plan and site location information;
- Assigning responsibilities to team members;
- Tabling of documentation such as JHA's, work procedures, inspection records and work instructions for review;
- Site visits, interviews and re-enactments;
- Photographs, videos;
- Time allocation and venues for investigation; and
- Format of final report.

## **6.3 Gathering Information and Data**

### **6.3.1 Site Inspection**

It is important that the team visit the incident site as soon as possible after the event to gain a better understanding of the scene and event circumstances. Where possible, the incident should be re-enacted under the advice of those most closely associated to the event.

Witness statements will also be better understood if the site has been visited.

### **6.3.2 Interviews**

Witnesses (circumstantial or eye witnesses) should be interviewed (if applicable) at the earliest opportunity after the incident preferably within the hour to avoid inadvertent or deliberate collusion of information. All witness statements shall be formally recorded, detailing, time, date, description, name, role and signature.

It may not be possible to assemble the team in time for the interviews and the Line Supervisor may need to carry out interviews and obtain data, especially if key witnesses are departing the area.

Interviews should be conducted using the following techniques:

- Identify to the witness the purpose of the investigation. "To identify the contributory factors and assist in preventing a recurrence of the event. NOT TO PLACE ANY BLAME."
- Where possible, choose the location and setting for the interview carefully. It may be useful to conduct part of the interview at the scene of the event, as it will help the person explain the circumstances more clearly.
- Ask the witness to describe his/her full version of the event and allow this to occur uninterrupted. Key points should be noted down as this occurs.
- Remain impartial and objective. Be sympathetic, the person may be upset or in shock. If the event was fatal or traumatic, you may have a first aid person standing by. Explain you are interested in only what they actually saw or heard.
- Draft the witness statement on his/her record relay of events ensuring the record is described in sequence.
- Review what the witness has relayed, step by step. This allows the person to be sure you have recorded what they meant.
- Reassure and thank the person for their assistance and ask them not to discuss the event with other witnesses when they are satisfied with the statement, have them sign and date the form.

### **6.3.3 Gathering Data**

Obtain background or current documentation/data as appropriate including:

- JHA's

- Pre-start check sheets
- Written work procedures
- Work orders
- Permits
- Equipment inspection reports
- Certification/licence documentation
- Specification details for machines, cranes etc
- Photographs
- Sketches or site drawings of the scene
- Items associated with the event
- Competency, Training and induction records

**6.4 Determining the Sequence of Events**

The first analysis step of an investigation is to determine the sequence of events that led up to the incident. This can be done by a simple listing of events in chronological order. Refer to the 'Guideline for Building a Chain of Events'. The team should refer to all witness statements.

**6.5 Determining Immediate and Underlying Causes**

**6.5.1 Determining Immediate Causes**

Immediate causes are those that had direct contribution to the incident type or work environment at the time.

The first analysis step of an investigation is to determine the sequence of events that led up to the incident. This can be done by a simple listing of events in chronological order.

The team should refer to all witness statements.

Immediate Cause	Explanation
Information Error or Omission or Misunderstanding	<ul style="list-style-type: none"> <li>• Were inadequate instructions, communication or misunderstandings contributing factors?</li> <li>• Language problems</li> <li>• Poor feedback</li> <li>• No standard communication formats Missing or excess information</li> <li>• Poor training</li> </ul>
Failure to follow rules/procedures	<ul style="list-style-type: none"> <li>• Was failure to following rules/procedures such as the following a contributing factor?                             <ul style="list-style-type: none"> <li>• Speed limits Permit system</li> <li>• Hazardous area restrictions Operating procedures</li> <li>• Written work instructions or JHA's PPE</li> <li>• Pre Start Checks and Step Back 5 x 5</li> </ul> </li> </ul>
Inadequate warning/ HSE devices	<ul style="list-style-type: none"> <li>• Were warning or safety devices such as the following inappropriate, inadequate, malfunctioning or bypassed?                             <ul style="list-style-type: none"> <li>• Barricades</li> <li>• Guards</li> <li>• Relief valves</li> <li>• Warning signs</li> <li>• Gas detection gauges</li> </ul> </li> </ul>



Immediate Cause	Explanation
Failure to act on warning devices	<ul style="list-style-type: none"> <li>• Were warning devices such as the following not acted on?                             <ul style="list-style-type: none"> <li>• Alarms (Were they audible/visible/understood)</li> <li>• Signs (Were they readable, properly located, appropriate)</li> <li>• Relief valves venting</li> </ul> </li> </ul>
Improper Manual Handling	<ul style="list-style-type: none"> <li>• Was poor manual handling or ergonomics a contributing factor? Examples are:                             <ul style="list-style-type: none"> <li>• Poor body position</li> <li>• Improper handling e.g. Lifting, carrying or applying force</li> <li>• Poor machine/man interface e.g. Vibration, awkward operating positions</li> <li>• Poor weight identification Poor configuration of load</li> </ul> </li> </ul>
Personal Protective Equipment (PPE)	<ul style="list-style-type: none"> <li>• Was the failure to wear the appropriate PPE a contributing factor? This includes:                             <ul style="list-style-type: none"> <li>• Correct PPE not available PPE not maintained</li> <li>• PPE not appropriate, or poorly designed</li> <li>• PPE not worn (Lack of understanding of rules, incorrect size, uncomfortable)</li> <li>• PPE rules not understood PPE oversize/undersize</li> </ul> </li> </ul>
Personal Factors	<ul style="list-style-type: none"> <li>• Were slips and lapses in concentration a contributing factor? Includes reasons such as:                             <ul style="list-style-type: none"> <li>• Stress</li> <li>• Illness/medical treatments Alcohol/drugs Boredom/fatigue</li> <li>• Work environment (dust, heat, noise etc)</li> </ul> </li> </ul>
Tools/Equipment	<ul style="list-style-type: none"> <li>• Were tools and equipment inadequate or misused? Includes:                             <ul style="list-style-type: none"> <li>• Lack of correct tools/equipment available</li> <li>• Poorly maintained tools/equipment</li> <li>• Poor quality or designed products (i.e. bend or break easily) Lack of training or knowledge of tools/equipment usage Improvising to save time or effort</li> </ul> </li> </ul>
Work Environment	<ul style="list-style-type: none"> <li>• Was the physical environment of the work area a contributing factor? Includes:                             <ul style="list-style-type: none"> <li>• Excessive noise</li> <li>• Poor ventilation/heat/cold/humidity/dust/fumes</li> <li>• Inadequate lighting</li> <li>• Inadequate furniture or fittings Congested or awkward access Congested (numbers of workers in area)</li> </ul> </li> </ul>
Untidy Site	<ul style="list-style-type: none"> <li>• Was poor housekeeping a contributing factor?</li> </ul>
External Factors	<ul style="list-style-type: none"> <li>• Did uncontrollable external factors contribute to the</li> </ul>

Immediate Cause	Explanation
	incident? These could include <ul style="list-style-type: none"> <li>• Third party activities</li> <li>• Weather</li> <li>• Floods</li> </ul>
Other Failures	<ul style="list-style-type: none"> <li>• Includes any contributing immediate cause or factor not covered by the above.</li> </ul>

### 6.5.2 Determining Underlying Causes

It is the aim of incident investigations to identify and correct the “underlying causes”. These causes should have wider implications than those associated with the specific incident or location. They should identify problems with systems or processes that can affect large areas of the company.

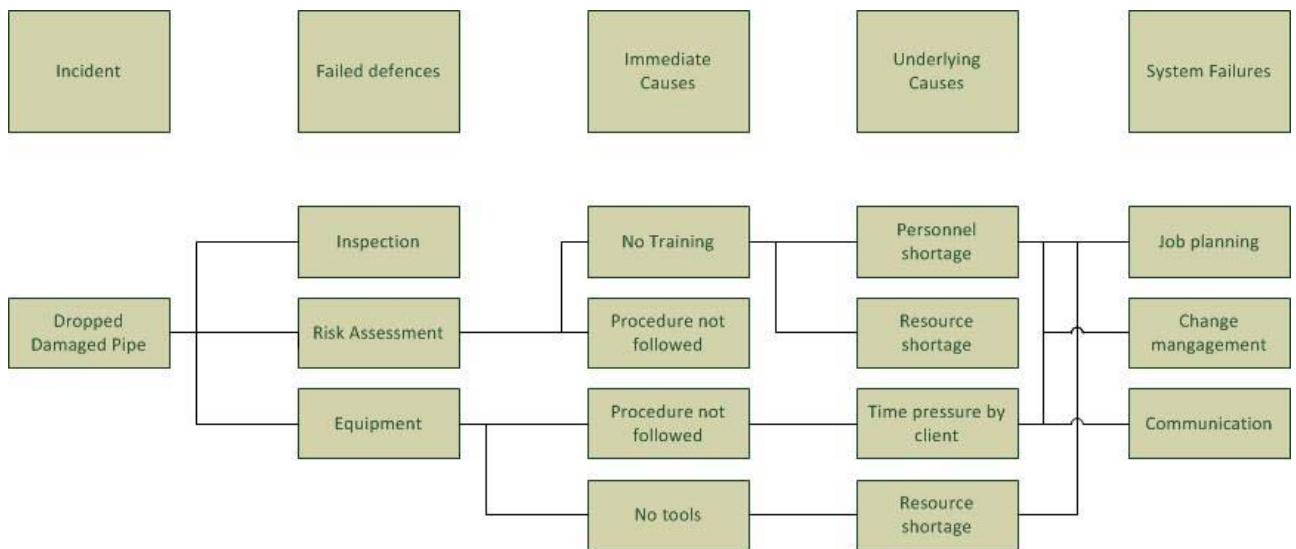
Underlying Cause	Explanation
Design	Poor equipment or facility design makes operation or access difficult, allow unexpected or unauthorised use or requires unusual maintenance. Design factors include: <ul style="list-style-type: none"> <li>• Excessive corrosion or wear rates</li> <li>• Poor person/machine interface</li> <li>• Poor user/designer communication</li> <li>• Poor operator protection</li> <li>• Poor warning/monitoring and control systems</li> <li>• Poor damage containment/minimisation systems</li> <li>• Poor escape facilities</li> <li>• Over design/complexity</li> <li>• Restricted areas/confined spaces</li> <li>• Poor access</li> <li>• Inadequate capacity or structural integrity of environmental control structures</li> </ul>
Tools & Equipment	Concerned with having the correct tools and equipment for the job. Does not include maintenance and design issues. Tools and Equipment includes: <ul style="list-style-type: none"> <li>• Lack of stock, poor warehousing practices (Storage)</li> <li>• Poor quality (Choosing cheapest options)</li> <li>• Old, out of date equipment</li> <li>• Equipment not fit for purpose</li> <li>• Equipment underrated/ underpowered/ overpowered</li> </ul>
Maintenance	Deals with the lack of appropriate maintenance and inspection management. Maintenance includes <ul style="list-style-type: none"> <li>• Lack of resources</li> <li>• Lack of, or inappropriate maintenance or inspection schedules</li> <li>• Lack of preventative maintenance and inspections</li> <li>• Failure to follow manufacturer’s maintenance recommendations</li> <li>• Failure to report or act on maintenance needs</li> </ul>
Procedures	Failure to have in place accurate, comprehensive and readily understood procedures, policies and rules. Factors include:

Underlying Cause	Explanation
	<ul style="list-style-type: none"> <li>• Lack of comprehensive operating procedures</li> <li>• Non user friendly procedures</li> <li>• Non controlled documentation</li> <li>• Procedures not regularly reviewed</li> <li>• Conflicting procedures, rules and policies</li> <li>• Failure to interpret procedures</li> </ul>
Planning	<p>Deals with the way jobs and projects are defined, planned and coordinated. Maintenance planning is covered elsewhere. Lack of planning includes:</p> <ul style="list-style-type: none"> <li>• Inadequate hazard/risk assessment e.g. HAZID, JHA, HAZOP</li> <li>• Inadequate HSE and /or environmental management plan</li> <li>• Lack of coordination of simultaneous conflicting operations</li> <li>• Inadequate contingency planning</li> <li>• Inadequate planned last minute changes</li> <li>• Scope of work inadequately defined and managed</li> </ul>
Organisation	<p>Organisation inadequacies in the structure of management contribute to responsibility and accountability shortfalls. Organisational inadequacies could include:</p> <ul style="list-style-type: none"> <li>• No clear lines of communication Inadequate communication methods Inadequate supervision or direction</li> <li>• Lack of audit or checks on internal processes Failure to audit contractors</li> <li>• Failure to allocate responsibility to individuals / positions - no one allocated with responsibility</li> </ul>
Incompatible Goals	<p>Where there is a conflict between HSE and production or economic goals. Incompatible goals could include:</p> <ul style="list-style-type: none"> <li>• Shortcuts in procedures to save time</li> <li>• Prioritising production budgets, rather than HSE budgets</li> <li>• Reducing the number and time of HSE meetings and HSE inspections to maintain production Rushing to complete jobs to make completion targets</li> <li>• Failing to adhere to, EMP, permit or tagging procedures to save time</li> <li>• Choosing Contractors on price rather than competence</li> </ul>
Induction/Training	<p>People must have sufficient knowledge, experience and skill to perform their jobs safely. Factors include:</p> <ul style="list-style-type: none"> <li>• Training/experience not adequate for the job</li> <li>• Ineffective training/induction programs</li> <li>• Selection of poorly skilled personnel</li> <li>• Poor planning or management of training schemes</li> <li>• Lack of risk perception/assessment in training programs</li> <li>• Training too detailed</li> </ul>
Psychological and Physical	<p>Involves identification of psychological and physical state of people.</p>

Underlying Cause	Explanation
Factors	These states could result from <ul style="list-style-type: none"> <li>Poor culture or morale Worker/union/management conflicts</li> <li>Stress</li> <li>Time of day or time in work cycle (Bio-rhythms) Little pride in work</li> <li>Poor recognition of work efforts Macho “can do” approach</li> <li>Physically or mentally incapable to perform function</li> </ul>

**6.5.3 Structure Data on a Causation Diagram**

The following diagram indicates how incident causation can be depicted. This is an example only.



**6.5.4 Failed Defences**

Defences are the last line of protection that prevents incidents from occurring. Defences should be in place to provide:

- Protection - e.g. inadequate or absent hard-hats; machinery guards; barricades around work areas; safety relief valves; earth leakage circuit breakers; tread on tyres and seatbelts.
- Recovery - e.g. inadequate or absent control systems that detect and compensate for abnormal conditions, gas detection and overspeed control systems.
- Contamination Prevention - e.g. inadequate or absent bunding, emergency response, emergency escape, fire/explosion walls and medivac.
- Awareness - e.g. hazards not identified in induction/training; subcontractors not inducted or trained; permit to work system not known; failure to do a JHA or similar.

There may be several failures of Defences under each category. Each failed Defence should have one or more “immediate causes”.

## 6.6 Identifying and Communicating Corrective Actions

Corrective actions must be reasonable, practical and their outcomes measurable. Prior to determining corrective actions, the Incident Causation Diagram should be thoroughly reviewed by the team to ensure that underlying causes are:

- Adequately described
- General in nature - do not only apply to specific activities or incidents
- Realistic and have contributed to the incident

The team then examines each of the identified causes and recommends corrective actions. Ensure the recommendations define Quality, Quantity, Resources and Time and are:

- Specific - recommendations are activities that can be undertaken by a work group and not general motherhood statements e.g. "all people to take care"
- Actionable - recommendations are described fully and sufficiently detailed so they can be implemented
- Achievable - recommendations are feasible and practical
- Appropriate - recommendations must be relevant, proportional to the risk.

The team then determines which sections or work groups have the authority and responsibility to implement these actions in a reasonable time frame.

If some corrective actions are subject to budgeting or long lead times, some short term controls should be identified to prevent recurrence.

*Note: Corrective actions should not exceed 4 items. If more are identified they should be prioritised based on the range of their impact.*

The investigation team leader shall contact the Supervisor of any work group assigned corrective actions to ensure the actions are within the influence of the group and that the time frame is appropriate. Once confirmed, photocopies of the report should be sent to that Supervisor by the Investigation team leader.

Prior to passing the investigation report on to Line Management for approval the Investigation leader should check that the form is complete and that all relevant attachments are included.

## 6.7 Management Approval, Distribution and Actioning of the Report

The investigation report should then be passed to Management and circulated for review and endorsement of the corrective actions.

The report should be circulated, at least, to the Management level appointing the investigation team as per the Incident Notification Matrix.

The investigation report should also be endorsed by personnel with the required authority (Management Level) to approve the recommended corrective actions, responsibilities and time frame.

Should Line Management have any concerns with the recommendations, they should consult the Investigation team leader to reach an agreement. If the Line Management decision prevails, it should be identified on the report form and Line Management held accountable.

The Investigation Team Leader (or delegate) shall enter the details of the investigation (including attachments as required) and action items into the Wasco HSE Database at the earliest opportunity.

## 7. DOCUMENTATION

WAPL-SYS-FRM-006 Incident Report Form

WAPL-SYS-PRC-002 Incident Reporting Procedure

CONSTRUCTION ENVIRONMENT MANAGEMENT PLAN

2211 PROJECT MARLIN KGMS FACILITIES PROJECT

APPENDIX C

WAPL-ENV-FRM-001 Environmental Inspection Form





<b>Workplace # &amp; Location</b>				
<b>Activity</b>				<b>Date</b>
<b>Inspection By</b>				
<b>Signatures</b>				

		A = Acceptable	NI = Needs Improvements	UA = Unacceptable	N/A = Not Applicable				
#	Inspection Item	Verification	Compliance Achieved				Comments / Action Required	Person Responsible	Close Out Date
			A	NI	UA	NA			
1.	Current environmental policy displayed?	Visual inspection.							
2.	Is there an environmental management plan developed and approved for the workplace?	Review workplace document control folder for approved management plan.							
3.	Is a waste management plan developed and approved for the workplace?	Review workplace document control folder for approved management plan.							
4.	Has a spill response scenario been developed for the workplace and included in Emergency response management plan (ERMP)?	Review approved emergency response management plan.							
5.	Are environmental hazards reported?	Review of hazard report cards/ corrective actions register?							
6.	Are toolbox talks / training sessions conducted on the workplace aspects?	Review of toolbox talk meetings folder.							
7.	Surface water/sediment controls and watercourse protection measures set up?	Visual inspection.							
8.	Is there a designated refuelling area?	Visual inspection.							
9.	Are fuel tanks adequately bunded covered and drip trays in place?	Visual inspection.							



		A = Acceptable	NI = Needs Improvements	UA = Unacceptable	N/A = Not Applicable				
#	Inspection Item	Verification	Compliance Achieved				Comments / Action Required	Person Responsible	Close Out Date
			A	NI	UA	NA			
10.	Are hazardous substance stores available and all drums, containers stored appropriately?	Visual inspection.							
11.	Are all hazardous storage areas ventilated and bunded (110% capacity)?	Visual inspection.							
12.	Are all bunds maintained? (No standing water etc.)	Visual Inspection.							
13.	Concrete wash out provided and maintained?	Visual Inspection.							
14.	Drip trays under non bunded static plant (incl. pumps)?	Visual Inspection.							
15.	Spill kits available in appropriate locations?	Visual Inspection.							
16.	Spill kits appropriate to substances being used?	Visual Inspection.							
17.	Spill kits adequate to contain spill?	Visual Inspection.							
18.	Appropriate PPE available in the event of a spill?	Visual Inspection.							
19.	Signs displayed indicating protected areas (archaeological and cultural heritage)?	Visual Inspection.							
20.	Dust suppression in operation and adequate?	Visual Inspection.							
21.	Designated waste skips available or butt bins available?	Visual Inspection.							
22.	Waste bins located in office and crib rooms?	Visual Inspection.							
23.	Designated smoking area and bins filled with sand?	Visual Inspection.							
24.	Is the workplace kept neat and tidy?	Visual Inspection.							
25.	Recycling of materials occurring? Poly or steel pipe laydown	Visual Inspection.							





		A = Acceptable	NI = Needs Improvements	UA = Unacceptable	N/A = Not Applicable				
#	Inspection Item	Verification	Compliance Achieved				Comments / Action Required	Person Responsible	Close Out Date
			A	NI	UA	NA			
26.	Chemicals segregated as per their classification compatibility?	Visual Inspection.							
27.	Is there a workplace layout map with <ul style="list-style-type: none"> <li>▪ Spill kits;</li> <li>▪ workplace/office layout;</li> <li>▪ Stormwater drains; and</li> <li>▪ Laydown / hazardous substance storage areas.</li> </ul>	Visual Inspection.							
28.	Warning signals working for temporary toilet facilities? Overflow alarm ect.	Test warning signals.							
29.	Are Employees and Subcontractors aware of their environmental responsibilities?	Spot check signed statement of responsibilities against names of personnel taken?							
30.	Is all waste removed by a licensed contractor to a licensed facility?	Review Contractors license?							
31.	Waste collection receipts available for all waste removed?	Review waste facility license?							
32.	Is all grey water discharged to sewer or septic systems?	Visual inspection.							
33.	Is environmental monitoring (e.g. dust, noise, vibration, water quality) being conducted (if applicable)?	Review noise monitoring results to identify areas of concern.							
34.	Current SDS folder held in all hazardous storage areas?	Review SDS folder to ensure there are no expired SDS's.							
35.	Are plant and equipment well maintained (smoky exhaust emissions) and checked regularly for potential leaks?	Visual inspection & review of maintenance records .							
36.	Asbestos waste handled by registered professionals?	Review qualifications and registrations.							
37.	Batteries stored correctly?	Visual inspection.							



		A = Acceptable	NI = Needs Improvements	UA = Unacceptable	N/A = Not Applicable				
#	Inspection Item	Verification	Compliance Achieved				Comments / Action Required	Person Responsible	Close Out Date
			A	NI	UA	NA			
38.	Are workplace stormwater drains marked to remind that no wastewater should be discharged to these drains?	Visual inspection.							
39.	Stop valves in place and shut correctly?	Visual Inspection							
40.	Draining taps on bunding shut and in good working order?	Visual Inspection							
41.	How is hydro test water disposed of, or is it stored for later use.	Visual Inspection, records							
42.	Has Contaminated soil been stored as per EMP.	Visual inspection							
43.	Flammable materials stored in a locked cage?	Visual inspection.							

CONSTRUCTION ENVIRONMENT MANAGEMENT PLAN

2211 PROJECT MARLIN KGMS FACILITIES PROJECT

APPENDIX D

WAPL-ENV-PLN-004 Stakeholder Management Plan





**WASCO (AUSTRALIA) PTY LTD**

## **STAKEHOLDER MANAGEMENT PLAN**

### **JEMENA PROJECT MARLIN KGMS FACILITIES EXPANSION**

**WAPL-ENV-PLN-004**

<i>Document No.</i>	<i>Revision status</i>	<i>Issued By</i>	<i>Checked By</i>	<i>Approved By</i>	<i>Date</i>	<i>Comments</i>
<i>WAPL-ENV-PLN-004</i>	<i>0</i>	<i>JT</i>				

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## 1. PROJECT DETAILS

Project Name	Jemena Project Marlin KGMS Facilities Expansion
Company Name	Wasco (Australia) Pty Ltd
Address	60 Commercial Drive, Shailer Park QLD 4120
Dates	Mid April – Q4 2023
Project Location	Wyllie Road, Kembla Grange NSW 2526

## 2. INTRODUCTION

Wasco (Australia) Pty Ltd is a member of a world class integrated energy infrastructure group undertaking numerous construction, engineering, supply, and maintenance gas projects within Australia.

Effectively managing stakeholders is a key component of successful project management. Good stakeholder management can be used to gain support for a project and anticipate resistance, conflict, or competing objectives among the project's stakeholders.

The Stakeholder Management Strategy for Marlin KGMS Facilities Project will be used to

- Identify and classify project stakeholders,
- Determine stakeholder power, interest, and influence; and
- Analyse the management approach and communication methodology for project stakeholders.

This will allow us to identify key influential stakeholders to solicit input for project planning and gain support as the project progresses. This will benefit the project by minimizing the likelihood of encountering competing objectives and maximizing the resources required to complete the project.

Early identification and communication with stakeholders is imperative to ensure the success of the Marlin KGMS Facilities Project by gaining support and input for the project. Some stakeholders may have interests which may be positively or negatively affected by the Marlin KGMS Facilities Project. By initiating early and frequent communication and stakeholder management, we can more effectively manage and balance these interests while accomplishing all project tasks.

## 3. DEFINITIONS AND ABBREVIATIONS

KGMS	Kembla Grange Metering Station

## 4. RESPONSIBILITIES

The Project Manager will be responsible for:

- Ensuring a stakeholder analysis is completed prior to the project commencing.
- Implementing relevant and identified strategies for engagement and communication with stakeholders.
- Monitoring stakeholder engagement, performance and communication.
- Ensuring stakeholder performance is routinely reported in Project reports.
- Conducting or participating in stakeholder reviews during the project.

## 5. IDENTIFY STAKEHOLDERS

It is imperative that all stakeholders are identified regardless of how major or minor they are. This is because they will be categorised after they have been identified. If stakeholders are omitted there is a likelihood that they may become evident at some point during the project's lifecycle and introduce delays or other obstacles to the project's success.

In the Initial assessment of the Project, a review of likely stakeholders will have been undertaken. The Prospect Assessment Plan should be used as a reference.

The KGMS Project Team will conduct a brainstorming session in order to identify stakeholders for the project. The brainstorming session should include the primary project team and the client. The session will be broken down into two parts. The first part will focus on internal stakeholders within the Jemena Project team. These stakeholders may include functional managers, operations/construction/maintenance personnel, project personnel, and other relevant Jemena / Zinfra employees or contractors who will be affected by the project. The second part of the session will focus on external stakeholders. These may include suppliers, landholders, customers, government groups, industry associations, training organisations, partner organizations, or any other individuals.

The following criteria will be used to determine who may be a stakeholder:

- Will the person or group be directly or indirectly affected by this project?
- Does the person or group hold a position from which they can influence the project?
- Does the person or group have an impact on the project's resources (material, personnel, funding)?
- Does the person or group have any special skills or capabilities the project will require?
- Does the person or group potentially benefit from the project or are they in a position to resist this change?

Any individual or organisation who meets one or more of the above criteria will be identified as a stakeholder. Stakeholders from the same organization will be grouped in order to simplify communication and stakeholder management.

## 6. KEY STAKEHOLDERS

Key stakeholders are often those who potentially have the most influence over a project or those who may be most affected by the project. They may also be stakeholders who are resistant to the change represented by the project. These key stakeholders may require more communication and management throughout the project's lifecycle and it is important to identify them to seek their feedback on their desired level of participation and communication.

The project team will identify key stakeholders who have the most influence on the project or who may be impacted the most by it. These key stakeholders are those who also require the most communication and management which will be determined as stakeholders are analysed. Once identified, the Project Manager will plan to obtain feedback on the level of participation they desire, frequency and type of communication, and any concerns or conflicting interests they have.

Based on the feedback gathered by the project manager, the determination may be made to involve key stakeholders on steering committees, focus groups, gate reviews, or other project meetings or milestones. Thorough communication with key stakeholders is necessary to ensure all concerns are identified and addressed and that resources for the project remain available.

## 7. STAKEHOLDER ANALYSIS

The project team will analyse its list of identified stakeholders to determine how they are categorized or grouped as well as the level of impact they may have based on their power, influence, and involvement in the project.

Once all KGMS Project stakeholders have been identified, the project team will categorize and analyse each stakeholder. The purpose of this analysis is to determine the stakeholders' level of power or influence, plan the management approach for each stakeholder, and to determine the appropriate levels of communication and participation each stakeholder will have on the project.

Once all stakeholders have been categorized, the project team will complete a stakeholder analysis matrix (within the Project Stakeholder Register) which illustrates the concerns, level of involvement and management strategy for each stakeholder.

## 8. IMPLEMENTATION OF STRATEGIES

The implementation of the strategies for each Project shall be through a proactive approach by the Project Manager, regular review of strategies and the use of the Stakeholder Register and Project reporting and audit.

### **8.1 Project Stakeholder Register**

Each Project shall develop and maintain a Stakeholder Register. The stakeholder register has a number of parts. It includes:

1. Stakeholder Analysis Matrix
2. Complaints Register
3. Stakeholder Contact Details
4. Stakeholder Correspondence

### **8.2 Engaging stakeholders in the planning and decision-making process**

The most common and powerful obstacle to stakeholder participation and commitment is lack of stakeholder engagement in the planning and decision-making processes. This can cause stakeholders to resist committing to and supporting plans, objectives, and strategies that they have not contributed to or agreed to.

On the other hand, engaging stakeholders in the planning and decision-making processes can be an effective way not only of obtaining their participation and involvement, but also of producing plans and decisions that are most likely to be workable.

### **8.3 Communicating with stakeholders**

Other common obstacles to stakeholder participation and commitment are:

- Insufficient and/or incorrect knowledge on the part of stakeholders about the context and content of a project and of the role and responsibility of the stakeholders
- Insufficient and/or incorrect understanding and acknowledgement by the project structure of the needs, issues and concerns of stakeholders
- Insufficient level of involvement of stakeholders in the day to day activities of the project
- Incorrect understanding by stakeholders of the accomplishments of the project while it is progressing, accompanied sometimes by a sense of lack of progress or loss of direction and purpose
- Stakeholders not associating sufficient positive value to the potential impact of the project

Communication is the most common and effective way of addressing these obstacles and thus influencing the participation and commitment of stakeholders throughout the duration of a project.

There are different styles of communication available to suit different circumstances and types of stakeholders. These include:

- Periodic broadcasts of information about the project, its achievements etc., for example via newsletters, e-mail etc
- Using discussion databases on the internet/intranet, for example for managing questions and answers
- Holding regular meeting with groups of people with a common interest.
- Distributing the minutes of meeting to key stakeholders
- Holding ad-hoc personal meetings with key stakeholders
- Using a suggestion box or similar device
- Periodic social events, such as evenings out etc.
- Use of training sessions, presentations and workshops to encourage in-depth discussion, gathering feed-back on specific issues and provoke a sense of ownership

Special care should be taken when planning communication actions related to critical stakeholders. It is advisable to select a communication style that is appropriate for their role and position.

A stakeholder's preferred style of communication is highly personal, not all executives prefer short sharp one-on-one meetings; some enjoy and derive great value from being involved in presentations and workshops.

### **8.4 Managing expectations**

Every stakeholder is likely to have a different viewpoint on the project and to expect different outcomes. Understanding a stakeholder's expectations makes it possible to communicate with the stakeholder in a way that will validate the stakeholder, and therefore maximise stakeholder commitment and participation. If a stakeholder's expectations are not properly understood and managed then there is a risk of causing concern and anxiety, and of losing stakeholder commitment.



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One effective way of managing stakeholder expectations consists of discussing and documenting reciprocal expectations with each critical stakeholder and reviewing these periodically. It is important to discuss not only what the stakeholder expects from the project, but also what the project expects from the stakeholder.

### **8.5 Managing Complaints**

Addressing and promptly managing complaints is essential for good Stakeholder management. Wasco (Australia) Pty Ltd has a complaints management process. Refer to the Complaints Management Procedure.

### **8.6 Correspondence and Contact Management**

All correspondence to and from stakeholders, mailouts, promotional material, presentations to stakeholders, public meetings, etc will be recorded on the Stakeholder Register.

## **9. MONITOR AND REVIEW**

Once the project commences, the Stakeholder register becomes the main tool for management of stakeholders. It may become necessary to re-align the stakeholder management plan regularly. For the KGMS Project, the stakeholder analysis and the stakeholder management plan be reviewed every 3 months.

Significant deviations from the stakeholder management plan will need to be managed as exceptions. Examples could be:

- New Stakeholders emerge.
- Significant deviations in what a stakeholder will deliver, when and at what cost
- A key stakeholder leaving an organisation or changing their position of contribution and commitment in regard to the project.

## **10. PROJECT REPORTING AND AUDIT**

Stakeholder management performance will be reported for the KGMS project as part of its routine Project reporting. Project auditing will also include review and analysis of Stakeholder management performance and compliance with the commitments of the Stakeholder plan and the Stakeholder Register.

## **11. REFERENCES**

WAPL-SYS-PRC-006 Complaints Management Procedure

WAPL-ENV-FRM-002 Stakeholder Contact Form

WAPL-ENV-REG-004 Stakeholder Register

WAPL-SYS-PRC-003 Incident Investigation Procedure



**WASCO AUSTRALIA PTY LTD**

# COMPLAINTS MANAGEMENT PROCEDURE

**WAPL-SYS-PRC-006**

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## 1. PURPOSE

The purpose of this procedure is to describe the process by which external complaints are received, addressed, managed and closed out. It is Wasco (Australia) Pty Ltd's (Wasco) objective to conduct its business without receiving complaints. However, it is recognised that sometimes complaints will be received, and this procedure addresses how they will be managed.

## 2. OBJECTIVES

It is important to ensure that when a complaint is received it is acted on immediately, and that the person making the complaint feels that the complaint is being taken seriously. The complaint must be recorded, and investigated. It is essential that the person or body that made the complaint is (a) informed of (and involved in if necessary) progress being made in the investigation and (b) notified when the complaint has been resolved and the actions taken or outcome achieved.

## 3. SCOPE

This procedure relates to Complaints received by Wasco from external stakeholders including members of the public, government bodies, industry organisations, landowners, and clients. The procedure is also to be used for ensuring any loss or damage suffered by stakeholders is recorded and rectified.

## 4. RESPONSIBILITIES

### 4.1 *President*

The President is responsible for ensuring all complaints are fully addressed, registered within Wasco, and investigated and closed out satisfactorily.

### 4.2 *Relevant Manager*

The Relevant Manager is responsible for ensuring that their project maintains a system for receiving, recording and investigating all complaints, and that all personnel and contractors in the Project are aware of the requirements. The Relevant Manager is responsible for investigating complaints in conjunction with other relevant Wasco managers.

### 4.3 *Systems Manager*

The Systems Manager is responsible for overall management of the complaints process, for interfacing with clients and stakeholders, and for ensuring the business complies with its processes for complaints management. The Systems Manager maintains the complaints register and provides Stakeholder reporting, including Complaints reports.

## 5. TRAINING AND INDUCTION

Developing and maintaining excellent stakeholder relationships is very important to Wasco. Inductions for all employees and contractors shall include information on the importance of good stakeholder relationships, and training on how to deal with complaints received.

## 6. MANAGING A COMPLAINT

### 6.1 *Receiving a Complaint*

Any person may receive an external complaint. All complaints should be recorded on the Complaints Form. Should a form not be available, the person receiving the complaint should obtain as much detail as possible and contact their manager with the information (via phone, email, or verbally).

The Relevant Manager and the Systems Manager must be informed of the complaint within 2 hours. Where relevant, the Systems Manager shall inform the Project's client immediately thereafter, including notifying them of any immediate actions taken. On being notified of a complaint, it shall be entered into the Project Complaint Register.



**6.2 Investigating the Complaint**

Complaint forms shall be maintained by each Project or Job. The person investigating the complaint should gather all relevant information, talk to the complainant if possible and ensure all facts are obtained. They should assign actions to rectify the problems and communicate the actions. Actions may include actions directly relating to the complaint, or may also include more general actions for all Wasco projects.

**6.3 Closing Out Complaints**

The Systems Manager and the Relevant Manager shall monitor all assigned actions and ensure that they are all completed. Once completed, the complaint may be closed out, the client and the complainant notified, and closed out in the register.

**7. COMPLAINTS REGISTER**

Wasco maintains a Master complaints register. Each Project or Department shall maintain a register of complaints, and provide this to the Systems Manager each month.

**8. KEY PERFORMANCE INDICATORS (KPIs)**

Whilst every complaint will be different in nature and detail, it is Wasco’s goal to close out all complaints within 7 days. The following KPIs should be used as a guide:

Issue	Goal
<ul style="list-style-type: none"> <li>• Initial complaint notified to Relevant Manager and Systems Manager;</li> <li>• Client notified</li> </ul>	Within 2 hours
<ul style="list-style-type: none"> <li>• Immediate actions taken, and investigation commenced</li> </ul>	Within 24 hours
<ul style="list-style-type: none"> <li>• Investigation completed; actions implemented, complainant notified and complaint satisfactorily closed out</li> </ul>	Within 7 days

**9. REPORTING**

At least monthly, the Relevant Manager shall notify the Systems Manager of the status of all complaints, and provide a copy of the Project complaint register to them.

The Systems Manager shall prepare a monthly Social Performance Report that includes details on complaints received, complaints closed out, and actions taken to rectify any issues.

**10. ANNUAL REVIEW**

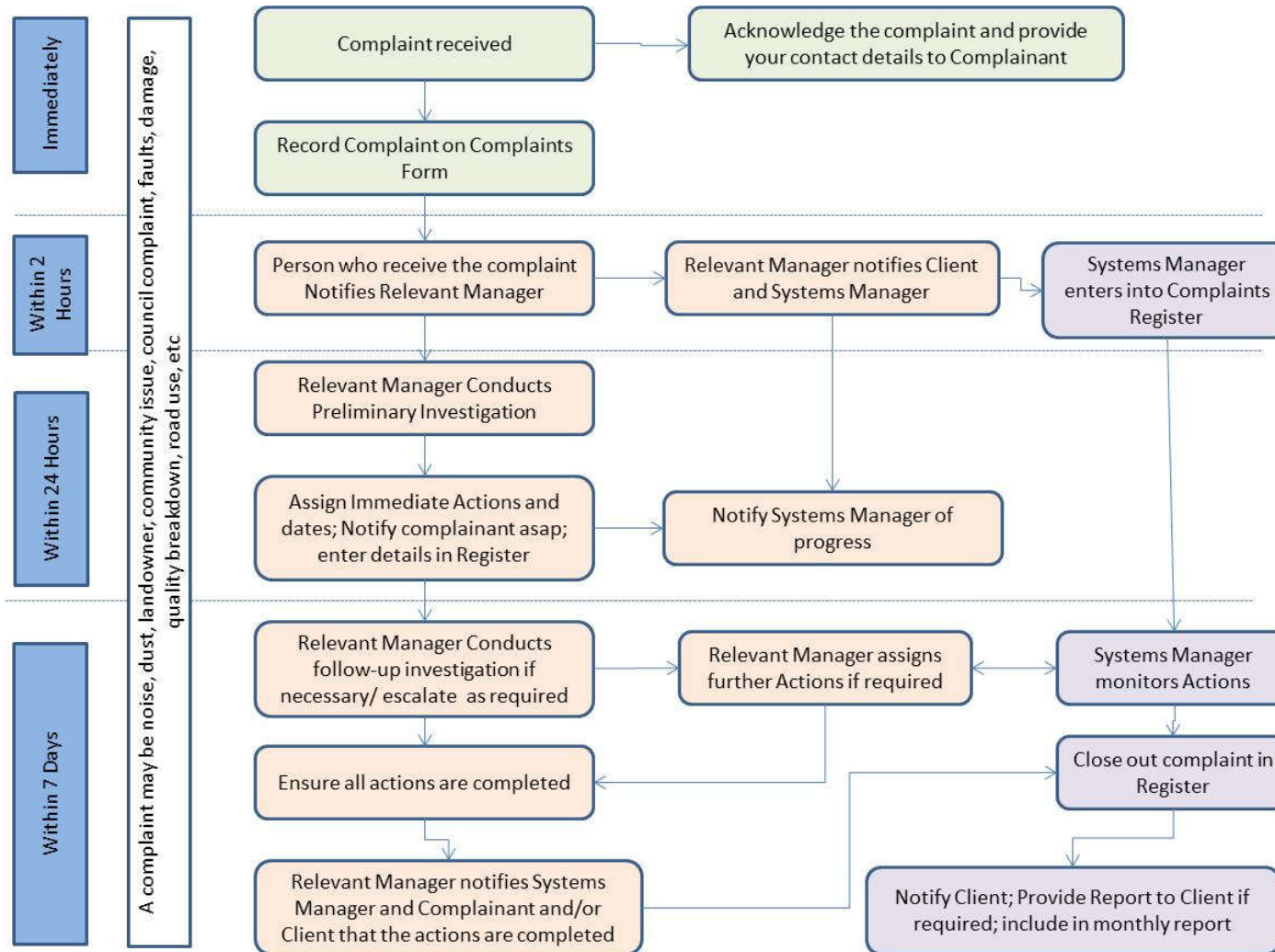
As part of Wasco’s continuous improvement process, an annual review of Social Performance will be conducted, including complaints received, trends, and initiatives taken or to be taken to improve overall performance.

**11. FORMS AND REGISTERS**

Complaint Form WAPL-SYS-FRM-008

Complaints Register WAPL-SYS-REG-003

12. FLOW CHART





Project References			
Project Name		Project Number	

Meeting Details			
Date of Meeting		Time of Meeting	
Location of Meeting			

Details of Contact			
Name			
Address			
Lot on Plan		Phone:	

Items Discussed	

Other:



Actions and Follow-up	

Name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Stakeholder

Name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Wasco Authorised Representative





Project: 

KGMS FACILITIES PROJECT
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## Stakeholder Register

P2211-ENV-REG-001

Stakeholder Identification and Strategies



Key Stakeholder Group	Stakeholder Type (Sponsor, Advocate, Blocker etc)	Identify their Level of Buy-In to the Change (Driver, Neutral, Restrainer) of the Project	Identify their level of influence on the outcome of the Project (High, Medium, Low)	Identify Strategies to Deal with the Resistance	Responsible Person	By When or Ongoing

### Stakeholder Contact List



Stakeholder	Company Name	Address Line 1	Address Line 2	Suburb	Postcode	State	Country	Contact Person	Role				

Stakeholder Correspondence and Other Material



Date	Received From	Sent to	Summary of Content	Type of	Reference					

Complaints Register



Complaint / Compliment												Complaint Closeout		
Complaint ID	Date	Wasco Project	Client	Location	Date of Complaint/ Compliment	Made by	Person Receiving Complaint/ Compliment	Nature of Complaint/ Compliment	Details	Communicated to Wasco Manager	Communicated to Client Manager	Person Investigating	Person Responsible	Dated Closed
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# CONSTRUCTION ENVIRONMENT MANAGEMENT PLAN

2211 PROJECT MARLIN KGMS FACILITIES PROJECT



## APPENDIX E

### Consultation Record

The following table provides a detailed record of the consultation activities associated with this Plan.

Stakeholder	Date Sent	Send Method	Due Date	Date Received	Comments
Wollongong City Council (WCC)	6 March 2023	Email	17 March 2023	17 March 2023	<ul style="list-style-type: none"><li>- Noted that consultation will continue with stakeholders including WCC. <i>No action.</i></li><li>- Noted that all incidents will be reported and WCC were applicable. <i>No action.</i></li><li>- Noted that correct reference is Wollongong City Council, not Shire Council. <i>Updated.</i></li><li>- Noted that WCC have mapped the site as potentially contaminated. <i>No action.</i></li><li>- Noted that the CEMP are to be prepared before construction commenced. <i>No action.</i></li><li>- Noted that WCC make no comment on the accuracy of the report. <i>No action.</i></li></ul>
Transport for NSW	6 March 2023	Email	17 March 2023	16 March 2023	No comments provided. <i>No action.</i>

Note: consultation was not undertaken with Sydney Trains as Stage 2 pertains to a localised area on Wyllie Road, Unanderra that does not interface with Sydney Trains assets or land holdings. Given Stage 2 does not interface with Sydney Trains, it was deemed that consultation with Sydney Trains would not be required (as per Section 15.1).