COASTWIDE CIVIL

COASTWIDE CIVIL

POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN

SHELL COVE PARK

FRASERS PROPERTY AUSTRALIA

19 CROOME LANE, ALBION PARK NSW2527

APPROVED COMPANY AS/NZS 4801 QMS Certification Services
APPROVED COMPANY ISO 9001 QMS Certification Services
APPROVED COMPANY ISO 14001 QMS Certification Services

Michael Tracy
michael.t@coastwidecivil.com.au

Document title	POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN SHELL COVE BUSINESS PARK
Document short title	SHELL COVE BUSINESS PARK CONSTRUCTION PIRMP
Status	Final
Date	20 April 2022
Project name	SHELL COVE BUSINESS PARK
Client	FRASERS PROPERTY AUSTRALIA

CONTENTS

ACRONYMS

ASS	Acid Sulphate Soils
CEMP	Construction Environmental Management Plan
CLM Act	Contaminated Land Management Act 1997
EPA	Environment Protection Authority
EPL	Environmental Protection Licence
MSDS	Material Safety Data Sheet
OEH	NSW Office of Environment and Heritage
PIRMP	Pollution Incident Response Management Plan
POELA Act	Protection of the Environment Legislation Amendment Act 2011
POEO Act	Protection of the Environment Operations Act 1997
SEMP	Site Environmental Management Plan

1 Purpose and Scope

1.1 Purpose of this Plan

This Pollution Incident Response Management Plan (PIRMP) has been prepared in response to amendments to the *Protection of the Environment Legislation Amendment Act* 2011 (POELA Act) that requires licensees to prepare, implement and test pollution-incident management plans (including community notification and community protocols) for each licensed activity and specified non-licensed activities.

The objectives of this PIRMP, as per the *EPA's Environmental Guidelines for the preparation of pollution incident response management plans* are to:

- ensure that a pollution incident is communicated to the relevant authorities and to people outside the licensed area who may be affected.
- minimise and control the risk of a pollution incident; and
- ensure that plan is appropriately implemented and regularly tested.

This PIRMP relates to the Coastwide Civil Pty Ltd (CWC) Environment Protection Licence (EPL 21674) has been prepared for the Bulk Earthworks operations, involving cut and fill operations to establish the levels for future built form for the Shell Cove Business Park, and the storage, treatment, and management of Acid Sulfate Soils (ASS). An initial estimate suggests that the operation will require additional fill material for the site/ this PIRMP will be prepared for the project's operational phase.

1.2 Scope of Construction Works

Shellharbour City Council propose to develop a Shell Cove Business Park,

- The combined construction phases consist of the construction and Preparation for the development of the Business Park
- Virgin Excavated Natural Material (VENM) as defined within *The Protection of the Environment Operations Act 1997 (POEO Act)*
- Excavated Natural Material (ENM) as defined within the EPA's Resource Recovery Exemption under *Part 9, Clauses 91 and 92* of the *Protection of the Environment Operations (Waste) Regulation 2014*.
- Alternate fill material as deemed suitable by the NSW EPA Resource Recovery Orders and Exemptions
- Fill from the Boat Harbour Development (approved under the Concept Plan (MP07_0027 Mod 1) and DA95/133). It is expected the fill material will consist of VENM & ENM which may be classified as Acid Sulphate Soils (ASS) or Potential Acid Sulphate Soils (PASS).
- Land Platform works for hotels, shopping centres residential Development
- The bulk earthworks for the Future Shell Cove Business Park and adjoining land (zoned RE1)
- The proposed development location (otherwise known as the site) is located at the southwestern end of the Shell Cove development within the Shellharbour local government area and has the legal title of Lot 9012 DP 1279959. The total area of the parcel is 17.95 Ha and has previously been partially distributed as a part of the Shell Cove Business Park Development. The site is bounded by harbour boulevard to the north, Bass point Tourist Road to the east, Rangoon Avenue to the west and Bass Point quarry to the South.

1.3 Inventory of Pollutants

Pollutants that will be used or stored on-site during the construction activities are expected to include those listed in **Appendix A** (Pollutant Inventory).
Establishment of the 5 Sediment Ponds which will discharge water as per the EPL protection Licence, Coastwide Civil will follow the requirements of the Environment Protection Licence
External Pollutants: Mobile Plan Excavator Dozer, Dump truck, Mobile Fuel Cart, light Vehicles.
Soil Stabilisation (Lime) will be Store Onsite in a mobile storage facility.

The proposed storage locations for pollutants are identified in **Appendix B** (Maps).

This PIRMP would be amended following the preparation of the Contractor's methodology and the Contractor's detailed Site Environmental Management Plan (SEMP).

1.4 Description and Likelihood of Hazards

The Contractor shall complete a risk assessment and identification of the potential environmental impacts associated with the works as part of the SEMP based on the Contractor's construction methodology. As such, this PIRMP would be updated following the preparation of the SEMP. For this PIRMP, environmental risks have been identified from Coastwide Civil Construction Environmental Management Plan (CEMP) and Site Environmental Management Plan (SEMP).

Pollution incidents that may occur because of the construction activities and cause material harm to the environment are listed below.
A summary of pre-emptive actions and controls associated with each of the hazards is provided in **Appendix C**.

The table below details the risk associated with each hazard without controls and the residual risk following the implementation of management measures and controls. The residual risk associated with each hazard is low or very low.

Hazard	Potential Consequences	Risk	Pre-emptive Actions	Residual Risk
Significant emission of:				
• smoke or fumes from plant and equipment • dust and windblown soil during clearing and construction • odour from acid sulphate soils	• Complaint by community • Eye Irritation, Breading problems to Asma Suffers • Strong odour Smell, unbreedable	Low	Refer to controls specified in **Appendix C**	Very low
		High		Low
Significant release to stormwater systems, beach, or ocean of:				
• sediment ponds on discharge turbid water with a high level of Acid • turbid water from site runoff, construction of the breakwater or channel dredging • acidic groundwater • groundwater discoloured with iron • fresh or deoxygenated water • pollution from spills of ASS, sewage, solid waste, fuel, oil, chemicals, or other construction materials	• Environmental contamination of surface waters including adjacent coastal waters not suitable for Swimming • toxic to Fishbed and kills the fish environment	High	Refer to controls specified in **Appendix C**	Low
	• Reduced light penetration to marine vegetation from turbid waters	Medium		Low
	• Exposure to hazardous substances/ injury Chemical Injuries	Low		Very low
• Neighbour's Complaints	• Any type of Complaints	High		Low

1.5 Safety Equipment

Safety equipment kept on-site comprises:

- All personnel wearing personal protective equipment (PPE) relevant to the scope of works being undertaken. Basic site PPE requirements are as follows:
    - Hard hat
    - Long pants long shirt
    - Hi- vest or shirt
    - Safety glasses
    - Steel capped boots,
    - Gloves to be carried are required to be used in the Manual Handling activity
    - P2 Musk must be available in the event of odour contamination occurring.

- In addition to the above basic requirements, any additional PPE must be worn as required to suit any specific tasks.
- Additional PPE for visitors or in the case of an emergency will be kept in the main site office.
- Relevant Safety Data Sheets (SDS) will be kept with all fuel, chemicals, and hazardous substances. The register of SDS provided in **Appendix A** and a copy of each SDS shall be kept in the main site office
- Water sprays/ water carts for dust control.
- Fire extinguishers will be located on each plant, in the main site offices as per safety fire regulations
- Spills kits shall be located in the Mobile Fuel truck (which will come to the site each day), at the main site offices, and within the immediate area of the lime storage facility.
- Silt booms deployed within storm-water channels or site water bodies to control turbidity
- Bunded areas to control any spills from chemical storage, pumps, or generators.
- Standard portable first aid kits in each supervisor's vehicle. In addition, a first aid kit (code of practice 2020 low risk) shall be provided in the main site and satellite offices.

In addition, onsite construction equipment such as dozers could be used to create additional bunding to contain any spills.

1.6 Maps

The map provided in **Appendix B** identifies the likely location of pollutants that will be kept on the premises, i.e., at the main site offices. Note that some pollutant storage locations will be mobile, e.g., fuel trucks

Any air pollution incident (e.g., release of smoke) has the potential to impact the surrounding properties to the north and west of the site as shown on the maps. Any spills or leaks have the potential to impact surface water drainage lines, storage ponds or groundwaters within the site. The site is situated within a valley that drains the ocean and prevents the runoff of pollutants to surrounding urban areas. The discharge points for runoff from the site to the ocean are at the existing watercourse outlet beneath the bridge on Bass Point Tourist Road which is on the northern side of the eastern breakwater and on the South of Bass Point Road of the eastern breakwater (refer to **Appendix B**).

2 NOTIFICATIONS

2.1 Distribution of this Plan

A controlled hardcopy of this PIRMP must be always kept onsite.

A copy of the relevant sections of the plan to be made publicly available will be provided on the Shell Cove Business Park development website within 14 days of preparation of this PIRMP. Those sections, exclusive of any personal information, include:

- Procedures for contacting relevant authorities as detailed in **Section 0**; and
- Procedures for communicating with the community as detailed in **Section 0**.

2.2 Duty to Notify

Following the *EPA's Environmental Guidelines for the preparation of pollution incident response management plans, "*a pollution incident means an incident or set of circumstances during or because 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."

Under the *Protection of Environment Operations Act*, 1997 (POEO Act), notification of a pollution incident is required if there is a risk of material harm to the environment, defined as follows.

a) harm to the environment is material if:
   i) Involves actual or potential harm to the health or safety of human beings or to ecosystems that are not trivial; or
   ii) Results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000 (or such other amount as is prescribed by the regulations); and
b) loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.

In the event of a pollution incident, notification of the relevant regulatory authorities listed in **Section 0** is required immediately (i.e., promptly and without delay).

2.3 Contact Details for Key Personnel

In the event of a pollution incident, the Actions Flow Chart provided in Section Error! Reference source not found. **shall be implemented**.

Coastwide Civil shall be primarily responsible for the management of any pollution incidents onsite. As an incident may require the ceasing of all works, an evacuation, or the emergency use of plant and equipment being utilised for construction works, Coastwide Civil Foreman shall be the first point of contact.

Coastwide Civil Foreman shall immediately notify the Safety Manager and Construction Manager and Frasers Property Australia who in turn will be responsible for notifying external parties (refer to **Section 0**), All other notification and action shall be initiated by Coastwide Civil.

In summary, Coastwide Civil Foreman must:

- notify Coastwide Civil Safety and Construction Managers immediately after becoming aware of the incident
- notify Clients and Shellharbour Council
- notify the Coastwide Civil Environmental Manager (responsible for the environmental management of the works including preparation and implementation of the SEMP and this PIRMP) and activate the environmental management team.
- initiate notification of the community via the Shell Cove Community Liaison Officer (refer to **Section 0**).
- initiate corrective and preventative actions in conjunction with the environment team.
- investigate incidents; and
- issue non-conformance reports and corrective action reports.

Coastwide Civil Site foreman shall be responsible for:

- immediately notifying the relevant authorities (refer to **Section 0**).
- acting on any incidents and emergencies in addition to the corrective and preventative actions implemented by the Contractor; and
- reviewing corrective action reports.

Contact details for the relevant onsite personnel are as follows.

Contact	Names	Representative of:	Phone Number
Development Director	Mathew Gulliver	Frasers Property	0402 362 170
Construction Manager	Craig Rogers	Coastwide Civil	0418 421 549
Superintendent	Johnothan Campbell	Coastwide Civil	0411 323 769
Environment Manager	Michael Tracy	Coastwide Civil	0402 127 361
Safety Manager	Michael Tracy	Coastwide Civil	0402 127 361
Project Manager	Harry Wallace	Coastwide Civil	0447 572 260
Community Liaison Officer	Mathew Gulliver	Frasers Property	0402 362 170

2.4 Notification of External Parties

In the event of a pollution incident when material harm to the environment is caused or threatened, Frasers Property shall immediately notify the relevant authorities, in the following listed order.

These contacts have been identified per the EPA's *Protocol for industry notification of pollution incidents*.

Contact	Phone Number
EPA Pollution Hotline	131 555
NSW Ministry of Health Wollongong Office	Normal Hours: (02) 4221 6700 After Hours: (02) 4222 5000 (Wollongong Hospital – ask for Public Health Officer on-call)
SafeWork NSW	13 10 50
Shellharbour City Council	Main Switchboard Telephone: (02) 4221 6111 After Hours Emergency: (02) 4221 6171
Fire and Rescue NSW	000 (if there is an immediate threat to human health or property and inadequate resources to contain the release)

Relevant information to be given consists of the following information, as known at the time of the incident:

a) the time, date, nature, duration, and location of the incident,
b) the location of the place where pollution is occurring or is likely to occur,
c) the nature, the estimated quantity or volume and the concentration of any pollutants involved if known,
d) the circumstances in which the incident occurred (including the cause of the incident, if known),
e) the action is taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution if known,
f) other information prescribed by the regulations.

Where information for items c) to f) are not known at the time of the initial notification, that information must be notified immediately after it becomes known.

2.5 Communications with Neighbours and the Community

Frasers Property has appointed a qualified Community Liaison Officer to function as the primary contact point for public enquiries and concerns and to be responsible for advising the public of progress and particular events during the construction period.

Signage has been erected at the entrance to the site showing contact details for any enquiries.

In the event of a pollution incident with the potential to cause material harm, the Community Liaison Officer shall notify the community of the potential to be at risk as a result of the incident. The method of communication will vary depending on the nature of the event. Urgent notification may be undertaken by direct door knocking of affected residents, or by phone call if contact details are easily obtainable (e.g., nearby schools, nursing homes). Letterbox drops to affected members of the community would be the preferred method of communication for less urgent notifications.

Broader community notification may be undertaken via signage in relevant areas, or advertisement in local newspapers as is deemed suitable based on the nature and scale of the event.

Should the pollution incident be a major event, notification of the community may be undertaken by emergency services personnel as directed by the relevant authority (refer to **Section 0**).

The notification shall include specific information to minimise the risk of harm to the community.

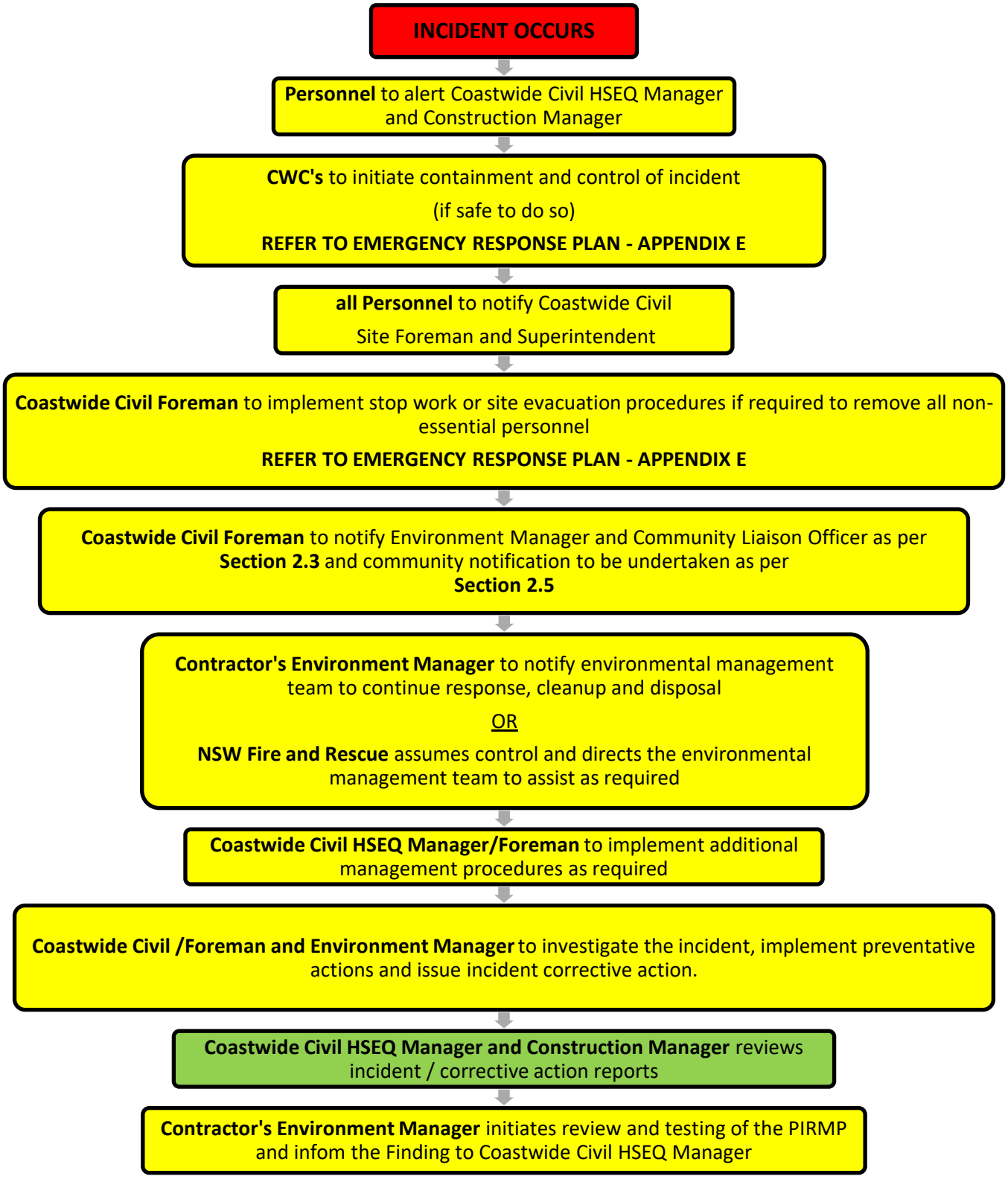
As the primary risk of harm involves the release of turbid water, leachate, fuels/ lubricants, or water of poor quality (low pH, deoxygenated or with elevated concentrations of heavy metal concentrations), the notification would contain recommendations with regards to avoiding swimming, surfing and/or fishing at the beach and adjacent foreshore areas for a specified period. Such incidents would also involve placing signage along Shellharbour South Beach at beach access points.

Should the incident involve emissions of significant dust or smoke to air, residents downwind (given consideration of the prevailing wind) and any nearby sensitive receptors such as schools, hospitals and nursing homes shall be notified with a recommendation to keep doors and windows closed until the incident has been controlled.

3. INCIDENT MANAGEMENT/ RESPONSE

3.1 Actions

In the event of a pollution incident, the response procedure outlined in the flow chart below shall be followed during any pollution incident.



3.2 Clean-Up and Disposal

Following containment and control of the pollution incident, clean-up shall be undertaken properly followed by disposal of materials. This may involve the use of spill kits and disposal of contaminated booms and absorbent material in bins provided or the excavation of sediment or dredging of sediment-laden waters and placement in sediment basins for treatment.

Where required, appropriately qualified and licensed contractors shall be employed to carry out the clean-up and disposal activities as necessary

4. TRAINING

A staff training program including a site induction is required as part of the Coastwide Civil SEMP the training shall ensure that:

- All staff on site including workers, subcontractors are aware of their responsibility in the event of an emergency; and
- Those personnel required to implement environmental management procedures (such As Storage, Clean- up, Installation of preventative controls and are properly trained.

The training program shall include the following key elements:

- Site inductions including an environmental component covering all aspects of site environmental management such as monitoring (e.g., dust, water quality) and education (e.g., acid sulphate soils, their identification and treatment)
- Specific environmental controls training for relevant staff (e.g., training in spill kit use and installation of sediment controls). Training of new staff shall be undertaken by site Foremen upon employment, and refreshers given informally on an ongoing basis to address any skill deficiencies. More formal training (e.g., in spill kit use) may be given in a Toolbox format as required.
- Monitoring of staff performance including the identification of the need for refresher training
- Verification of competency undertaken for all machine operators by a trainer and assessor. Competency shall be assessed upon employment for any new experienced operators. For operators being trained to operate a new item of plant, competency shall be assessed and signed off when the trainer and assessor believe that the worker can operate the plant item without supervision.
- Daily site inspections including inspection of environmental controls which also provides an additional opportunity to identify staff training needs
- Weekly Toolbox Talks at which environmental issues are discussed
- Prestart Meetings held before the commencement of new job activities including discussion of environmental considerations related to the task and training of workers in new environmental procedures if required
- Preparation, review and sign off, Safe Work Method Statements (SWMS) by workers before the commencement of new job activities. The SWMS include environmental procedures as relevant

Training records shall be kept on-site in the following locations:

- **Inductions** – Copies will be kept electronically on our server at the head office
- **Training plan matrix:** – matrix identifying the capabilities of all staff – kept electronically on our server
- **VOCs:** – completed competency assessments for all CWC workers kept electronically on our server
- **Qualifications** – copies of CWC worker licenses, qualifications etc. kept electronically on our server
- **Toolbox Talks:** - copies of all documented toolbox talks are kept in the Site Office in the Safety Management Plan folder
- **SWMS:** – all CWC and subcontractor SWMS kept in Site Office.

5. Testing and Review

This PIRMP is to be reviewed, amended, and tested:

- following preparation of the PIRMP and the SEMP.
- routinely at least once every 6 months.
- within one month of the occurrence of any pollution incident.

The review shall include a site walkover to confirm the main pollutants listed in the pollutant inventory and the hazards associated with any potential pollution incident.

Testing shall comprise of a mock pollution incident relevant to the site and construction activities (such as a mock release of turbid water) to ensure that the information contained within this PIRMP is accurate and that the incident response mechanisms are workable. This shall be conducted **twice** annually.

Tracking of PIRMP testing and review is to be kept following the form provided in **Appendix D**.

Appendix

Appendix A - Map

Appendix B – Summary of Pre-Emptive Actions

Air Quality Controls

General Controls

- All equipment used and all facilities erected are designed and operated to control the emissions of smoke, dust, fumes, and other air pollutants into the atmosphere.
- Works shall be confined to working hours of 7:00 to 17:00 Monday to Friday and 7:00 to 13:00 Saturdays and shall only be undertaken outside of these hours if it is of an emergency nature or other exemptions are approved by the EPA.
- Coastwide Civil shall seek to minimise the potential for the generation of dust, odours, and noxious vapours through minimisation of machinery movements and restriction of traffic movements and speeds.
- Coastwide Civil shall consider the prevailing weather conditions in which all work is undertaken and modify/or cease site operations were necessary in the case of adverse weather conditions such as high wind.
- Implementation and recording of an air quality monitoring program involving dust and odour monitoring at the nearest residences and regular inspection of the site and construction activities to visually monitor dust and odour emissions.

Smoke and Fume Emissions

- There shall be no burning of any material at the site.
- All plant and equipment must not emit unacceptable levels of smoke/ fumes and ensure that they comply with OEH licence conditions for air quality standards.
- The operation of any plant and equipment found emitting visible smoke/ fumes for periods longer than a designated time (refer to Contractor's SEMP) shall be suspended until acceptable levels can be achieved.

Dust and Wind-Blown Sand

- Appropriate dust and windblown sand suppression measures will be implemented to ensure that unacceptable levels of dust are not generated by construction activities.
- Minimise areas disturbed by works at any given time, including the progressive rehabilitation of disturbed areas following earthworks.
- Use water carts to keep haulage roads moist during operational hours.
- Spray disturbed areas with a fine spray of water during earthworks activities; and
- Ensure all watering equipment, including sprays, sprinklers and water carts are adequately maintained and readily available during the works.

Potential Odour from Acid Sulphate Soils

- Apply odour suppressants to any odorous sediment to minimise the amount of odour emission when levels of odour exceed trigger values.
- Minimise the size of the exposed odorous sediment area.
- Add lime to odorous sediment to reduce odour emissions.

Corrective Actions

- Immediately suspend any activity that generates unacceptable dust, odour or gases and implement further mitigation measures before a resumption of activities.
- Monitor the activity during recommencement to ensure that unacceptable air quality levels are not exceeded.

Controls for Release of Pollutants to Stormwater Systems, the Beach and Ocean

General

- Bunding of the Shell Cove Business Park construction site to control runoff. Bunding shall be planted, must not contain any ASS, and shall be controlled for dust.

Erosion Control

- Installation of erosion control measures prior to any site disturbance or earthworks including:
  - Upslope diversion drains
  - Locating stockpiles away from watercourses
  - Installation of combination sediment filters, barriers and/or basins downslope of disturbed areas
- Stabilisation of all drainage diversions immediately and of all disturbed areas as soon as practical.
- Maintenance of all sediment and erosion controls throughout the site works.

Clean Stormwater Management

- Diversion of clean stormwater (i.e., non-turbid water from undisturbed areas) from upstream areas around the construction site where possible.
- An area of the existing swamp shall be maintained for the majority of the construction period to receive clean (non-turbid) stormwater and periodically break out across the beach in a similar manner to the current hydraulic regime.
- Clean stormwater shall be conveyed through the site in a manner isolated from construction activities.
- The Following filling in of the remnant swamp, the clean stormwater shall be generally diverted to the boat harbour.

Dirty Stormwater Management

- Dirty stormwater (i.e., from disturbed areas) shall be collected in sediment basins at shell Cove Business Park excavation.
- Dirty water from sediment basins shall be disposed of via:
  - evaporation.
  - use for dust suppression and irrigation of revegetated areas.
  - treatment to remove sediment, gross pollutants and excess acidity prior to compliance testing and discharge to clean stormwater systems.
- Sedimentation basins shall be cleaned out when capacity is reduced by 30%.
- Records shall be kept of the date, location, and quantity of:
  - flocculants and neutralizing agents were applied to sediment basins.
  - any water discharged from sediment basin to clean surface water systems including results of compliance testing before release.
  - sediment removed from sediment basins.

Groundwater Management

- Groundwater from any dewatering activities shall be discharged into the Boat Harbour Precinct at shell Cove. Water levels are managed to have a constant minimal level of water at all times. Groundwater is discharged to the 'clean' stormwater system after treatment to remove sediment, gross pollutants, and any excess acidity, with testing to confirm compliance with EPL criteria.

Construction Traffic

- Construction traffic movements shall be restricted to defined roads where possible and will be minimised during and after wet weather.
- Measures shall be installed to prevent the carrying of mud or dirt onto public roads.
- Watercourse crossings shall be constructed in a manner that prevents sediment from washing into the watercourse

Acid Runoff/ Discharge from ASS

- Excavation of ASS shall be conducted in wet or moist conditions to prevent oxidation.
- ASS remaining outside the shell Cove Business Park footprint is to be "chased out" in areas of low finished surface level. In other areas, the ASS outside the shell Cove Business Park footprint is to be consolidated and capped in situ to minimise the risk of oxidation.
- Areas of exposed ASS shall be isolated from the clean stormwater system by bunds. Runoff from such areas shall be collected, tested and, if necessary, treated to ensure compliance with EPL criteria.

Spills

- All fuels, oils, paints, and other chemicals stored on-site shall be contained in a bunded area constructed to comply with the requirements of Australian Standards and the *Dangerous Goods Act* 1975.
- The bunded area must be constructed with an impervious floor and must not be fitted with a drain valve.
- The bunded area shall be inspected weekly and immediately after wet weather.
- The Contractor shall immediately clean up any spills detected.
- Sewage effluent must not be disposed of onsite. A licensed waste pump-out contractor must remove all sewage waste from the site.

Monitoring and Compliance

- Surface water monitoring shall involve monitoring of waters upstream and downstream of construction works for turbidity acidity (pH) and the presence of oils and grease in surface waters. In addition, the apparent colour of the surface water shall be monitored at the downstream monitoring location.
- Surface water monitoring shall be conducted weekly in dry weather and daily in wet weather and/ or during a swamp breakout.
- All dirty water in stormwater sediment basins shall be monitored for suspended sediment concentrations before discharge to the clean stormwater system.
- All potentially acidic water from the Shell Cove Business Park construction shall be monitored for acidity (pH) and corrected, if necessary, before discharge into the clean surface water system. Results shall be compared to specific trigger values.
- Water discharged from the Shell Cove Business Park excavation shall be monitored for pH and turbidity and the other pollutants listed in the EPL. Monitoring shall be conducted three times per week during any discharge from the Business Park excavation or Bulk Work
- Stormwater, erosion, and sediment control measures shall be inspected weekly during dry weather; daily within periods of extended rainfall; or within two days of the cessation of heavy rainfall.
- Regular inspections of the condition of all turbidity containment structures or control devices to ensure their integrity as well as the beach on either side of the entrance and the intertidal rocky reef habitat to the south of the entrance to detect any spills or gross pollution. Inspections shall be carried out:
    - during land-based construction: weekly during dry weather periods and daily during periods of extended rainfall; and
    - within two days of the cessation of any rainfall event that results in 20 mm or more rain falling at the site in any 24 hours.
- Recording of inspections including:
    - The date and time of the inspection.
    - details of the use of any flocculants.
    - dates and times when sediment was cleaned out.
    - whether any water pollution control structures had their design exceeded; and
    - any maintenance requirements.

Corrective Actions

- Immediately investigate to determine the source of the pollution.

- Unless the source of the pollution is upstream of the site, the Contractor shall instigate works to rectify the water quality in the shortest practical time.
- Take steps to prevent the discharge of polluted water to the environment by diverting such water into the shell Cove Business Park sediment ponds excavation or other effective measures.
- Water in sediment basins or the shell Cove Business Park that exceeds trigger values shall receive further treatment and testing before discharge to the 'clean' surface water system.
- At any time should monitoring data from the discharge point from the Shell Cove Business Park does not meet the compliance standards, the dewatering activity would cease or be temporarily directed to a standby pond/ tank until the water at the discharge point meets compliance standards.
- If a visual plume is observed in the nearshore zone as a result of heavy rainfall leading to a breakout and the monitoring data from the discharge point from shell Cove Business Park to the ocean:
    - is compliant, and no further action (related to dewatering) is required.
    - is not compliant, dewatering is either to cease. or to be temporarily directed to a standby pond/ tank. Use of the shell Cove Business Park may resume when meets the compliance standard.
- Should any incidents arise, due to the works, that lead to an actual or potential adverse impact on beach safety these shall be immediately investigated and reported to EPA and existing procedures revised were required to ensure no reoccurrence.

Interpretation of Ph Ranges

pH Value	Result	Comments
pH ≤ 4, jarosite not observed in the soil layer/horizon	May indicate an AASS indicating previous oxidation of RIS or may indicate naturally occurring non-ASS soils	Generally, not conclusive as naturally occurring, non-ASS soils, such as many organic soils (for example peats) and heavily leached soils, often also return pH ≤ 4
pH > 7	Expected in waterlogged, unoxidized, or poorly drained soils	Marine muds commonly have a pH > 7 which reflects a seawater (pH 8.2) influence. Oxidation of samples with H2O2 can help indicate if the soil materials contain RIS

Appendix C - Record of PIRMP Testing and Review

PIRMP Testing and Review Tracking Record				
Version	**Date Tested**	**Date Amended**	**Modified By**	**Details of Amendments Required/ Made**
1				**Version 1 of the plan**
2				**Update to reflect Stage 2**
3				**Revision following EPA Review.** **The document is now maintained by CWC.**
4				**Updated:** • PIRMP Tested & Reviewed by Mauricio Roman • Names & Phone Numbers • Appendix A - SDS list • Appendix B - Map Chemical storage locations/Monitoring points • Appendix c - Ground Water management Appendix E - Emergency Evacuation map within the Emergency Response Plan
5		**9 Sep 2025**		**Updated:** • Names & Phone Numbers • PIRMP Tested & Reviewed by Michael Tracy

Appendix D – Emergency Response Plan